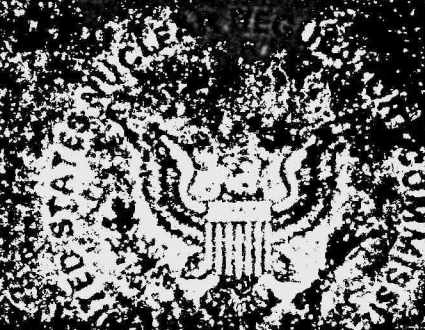


NUREG-0750
Vol. 20, No. 5
Pages 1437-1572

NUCLEAR REGULATORY COMMISSION ISSUANCES

November 1984



U.S. NUCLEAR REGULATORY COMMISSION

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NUREG-0750
Vol. 20, No. 5
Pages 1437-1572

NUCLEAR REGULATORY COMMISSION ISSUANCES

November 1984

This report includes the issuances received during the specified period from the Commission (CLI), the Atomic Safety and Licensing Appeal Boards (ALAB), the Atomic Safety and Licensing Boards (LBP), the Administrative Law Judge (ALJ), the Directors' Decisions (DD), and the Denials 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.

U.S. NUCLEAR REGULATORY COMMISSION

Prepared by the Division of Technical Information and Document Control,
Office of Administration, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555
(301/492-8925)

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Commission
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COMMISSION

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket Nos. 50-322-OL
50-322-OL-4

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

November 21, 1984

Upon review of the Licensing Board's September 5, 1984 Order authorizing fuel loading and precritical and cold critical testing at the Shoreham Nuclear Power Station, Unit 1, the Commission determines that the order may become effective only after another Licensing Board in this proceeding resolves certain issues remanded to it in ALAB-788, 20 NRC 1102 (1984) in favor of the applicant (or determines that they are not material to low-power testing), and the Staff resolves any remaining uncontested issues. The effectiveness of any Licensing Board order regarding the remanded (ALAB-788) issues is delayed by the Commission until 7 days after issuance.

**OPERATING LICENSES: HEALTH AND SAFETY
REGULATIONS (LOW POWER)**

Every health and safety regulation is not necessarily applicable to fuel loading and to every phase of low-power operation. Rather, simple logic

and common sense indicate that some regulations should have no application to fuel loading or some phases of low-power operation.

RULES OF PRACTICE: STAY OF AGENCY ACTION (CRITERIA)

In determining whether to grant a stay, the Commission or the adjudicatory boards consider (1) whether the moving party has made a strong showing that it is likely to prevail on the merits; (2) whether the party will be irreparably injured unless a stay is granted; (3) harm to other parties should a stay be granted; and (4) where the public interest lies. 10 C.F.R. § 2.788(e).

NUCLEAR REGULATORY COMMISSION: ADJUDICATORY RESPONSIBILITIES

The Commission is obligated under the Administrative Procedure Act and under principles of fair and efficient administration to act with reasonable dispatch on requests for licenses.

MEMORANDUM AND ORDER

This concerns the request of Long Island Lighting Company (LILCO) for a license authorizing it to engage in fuel loading and low-power testing pursuant to 10 C.F.R. § 50.57(c). On September 5, 1984, the Licensing Board designated to hear and decide LILCO's request (the "Exemption Board") granted LILCO's motion for summary disposition of safety issues related to Phases I and II of low-power testing (fuel loading and precritical and cold critical testing) (LBP-84-35A, 20 NRC 920). When considered along with the Exemption Board's September 19, 1984 Order (unpublished) dismissing physical security contentions, the effect of the Exemption Board's September 5 Order would normally be to permit the NRC Staff to issue a license for Phases I and II. Of course, Staff would also have to resolve any remaining relevant uncontested issues.

In this case, however, two events prevent the Exemption Board's order from becoming immediately effective: the Commission's decision

to conduct an immediate effectiveness review¹ and the Appeal Board's October 31, 1984 Decision in ALAB-788 (20 NRC 1102), which remanded three "minor" issues to the Licensing Board conducting the operating license proceeding (the Brenner Board).² For the reasons stated below, we conclude that the Exemption Board's September 5, 1984 Order may become effective, but only after the Brenner Board determines in writing, with supporting rationale, that issues remanded to it in ALAB-788 either are not material to Phases I and II of low-power operation or that these issues are resolved in favor of LILCO.

The Exemption Board found, based on uncontroverted facts, that no emergency AC power system was required for core cooling during Phases I and II, and thus that no AC power was needed to permit "functioning of structures, systems, and components important to safety," within the meaning of GDC 17. The Board concluded that LILCO should be permitted to conduct fuel loading and low-power testing as proposed in Phases I and II. Order of September 5, 1984, LBP-84-35A, *supra*, 20 NRC at 926.

As we read it, the Exemption Board found in essence that the purpose of GDC 17 — to ensure that there is sufficient AC power to provide core cooling in the event of a postulated accident — has no application to Phases I and II, and that GDC 17 was not intended to apply where there was no reason for its application.³ We agree with the Exemption Board.

In CLI-84-8, we held that "10 C.F.R. § 50.57(c) should not be read to make General Design Criterion 17 inapplicable to low-power operation." (19 NRC at 1155.) By this we meant only that § 50.57(c) does

¹ The Exemption Board referred its decisions to us for our review in light of our statement of May 16, 1984, that "[a]ny initial decision authorizing the grant of an exemption shall not become effective until the Commission has conducted an immediate effectiveness review." CLI-84-8, 19 NRC 1154, 1156.

The instant decision concludes our immediate effectiveness review for Phases I and II. As a separate matter, in an Order of November 19, 1984 (unpublished), we invited the parties to submit to us, by November 29, 1984, their comments concerning the immediate effectiveness of the Exemption Board's October 29, 1984 "Initial Decision" authorizing the grant to LILCO of an exemption from GDC 17 for Phases III and IV (LBP-84-45, 20 NRC 1343).

² In Orders of November 2 and 5, 1984 (unpublished), the Brenner Board directed the parties to file comments by November 15 concerning the effect of ALAB-788 on the issuance of a low-power license, and on any further actions required of the parties and that Board. On November 20, 1984, the Brenner Board conducted a conference with the parties on these issues, and ruled that the pendency of any remanded issues does not affect the possible issuance of a low-power license. The rationale for the Board's ruling is to be set forth in a future Board order.

³ Suffolk and the State argue that the lack of a qualified onsite AC power system violates 10 C.F.R. Part 50, Appendix B, and GDCs other than GDC 17, and that those violations must be adjudicated or exempted prior to issuing an OL. However, all of the other requirements cited are applicable only if GDC 17 requires LILCO to have a qualified onsite AC system for Phases I and II. The Exemption Board held that it did not, and we agree.

not, by itself, carve out an exception from all health and safety regulations that would otherwise be applicable to a low-power license. We did not mean to say, however, that every health and safety regulation, regardless of its purpose or terms, must be deemed fully applicable to fuel loading and to every phase of low-power operation, or that the pressures, temperatures, and other stresses associated with full power must be postulated in evaluating applicability of, or compliance with, regulations for low power. Each regulation must be examined to determine its application and effect for fuel loading and for each phase of low-power operation. Simple logic and common sense indicate that some regulations should, by their own terms, have no application to fuel loading or some phases of low-power operation. Indeed, this was recognized by counsel for Suffolk County in oral argument before us. See Oral Argument of May 7, 1984, transcript at 73-74.⁴ The Exemption Board followed this approach in its decision. Under CLI-84-8, our effectiveness review has focused on the special issues that have been raised in this case related to GDC 17. We have not considered the merits of the Exemption Board's September 19, 1984 Order on physical security contentions. Under 10 C.F.R. § 2.764(f), low-power decisions, including the September 19, 1984 Order, may become effective without prior Commission review.⁵

Based upon our review of the parties' comments of September 14, 1984, we also address the factors specified in 10 C.F.R. § 2.788(e): whether the State and County have made a strong showing that they are likely to prevail on the merits; whether there will be irreparable harm to the County and State if no stay is granted; whether LILCO will be harmed by a stay; and where the public interest lies.

We are unpersuaded by the arguments that we have no authority to issue a license for Phases I and II, or by any of the other arguments that have been made to us opposing issuance of the license.⁶ The State and

⁴ We note that Suffolk's counsel recognized in oral argument before us that GDC 4, concerning environmental qualification and missile resistance, is not fully applicable to low-power licenses. We see little distinction in this regard between GDC 4 and GDC 17 in the context of the Phase I and II license authorized by the Exemption Board.

⁵ We note that on November 13, 1984, Suffolk and the State noticed an appeal of the Exemption Board's September 19, 1984 physical security decision, and of its October 29, 1984 Initial Decision.

⁶ Suffolk and New York State argue that the Commission may issue only construction permits and operating licenses because these are the only types of authorizations contemplated by the Atomic Energy Act and by our regulations. The Commission may not, then, authorize an operating license which permits anything less than fuel loading and testing up to 5% of full power. They call the Phase I and II license an illegal "no power license." We reject this argument. The argument ignores the language of § 50.57(c), which defines low-power testing as "operation at *not more than 1 percent of full power for the purpose of testing* the facility" (emphasis added), and long-standing Commission practice of requiring issuance of a license before even fuel loading can be undertaken.

County have not made a strong showing that they are likely to prevail on the merits.

The County and the State argue that although they would not be irreparably injured by the "minimal" irradiation of the plant, issuance of a Phase I and II license would irreparably injure "the integrity" of the licensing proceeding. We interpret this to be an argument that once the Phase I and II license is granted, the eventual issuance of a full-power license is a foregone conclusion. We cannot agree with this implication. A full-power license will issue if and only if the Commission can make the findings that it must make prior to the issuance of such a license. Issuance of the Phase I and II license is completely without prejudice to later decisions on low- or full-power licensing, and we express no opinion at this time whether further licenses for low or full power can or will be issued.

Finally, the State and County have not demonstrated that the public interest will be harmed by the grant of a license for Phases I and II. We are obligated under the Administrative Procedure Act and under principles of fair and efficient administration to act with reasonable dispatch on requests for licenses. The hearing litigation in this case has been long and difficult, and where parts of it have been concluded and findings made, we believe the public interest requires that we accord those findings the legal effect they deserve.

For the above reasons, we have decided to approve the Exemption Board's September 5, 1984 decision, recognizing, as explained above, that no license can issue until some further consideration of the issues remanded in ALAB-788, and until Staff is satisfied with resolution of any remaining uncontested issues. To allow for the orderly processing of any request for expedited judicial review, any written order of the Brenner Board, with supporting reasons, (1) determining that the issues remanded to it are not material to Phases I and II of low-power operation, or resolving these issues on their merits in favor of LILCO, and (2) authorizing issuance of a license for Phases I and II, shall not become effective until 5:00 p.m., Eastern Standard Time, 7 days after the date of the authorizing order.

The Brenner Board's expeditious consideration whether the issues remanded to it in ALAB-788 have any effect on the issuance of a license for Phases I and II is reflected by its orders of November 2, 5, and 20, 1984. The Commission directs the Board to continue its expeditious con-

sideration of this issue by issuing its further order setting forth rationale as soon as practicable.

It is so ORDERED.

For the Commission

JOHN C. HOYLE
Acting Secretary of the
Commission

Dated at Washington, D.C.,
this 21st day of November 1984.

Atomic Safety and Licensing Appeal Boards Issuances

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman
Dr. W. Reed Johnson
Thomas S. Moore
Christine N. Kohl
Gary J. Edles
Dr. Reginald L. Gotchy
Howard A. Wilber

APPEAL BOARDS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

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

In the Matter of

Docket Nos. 50-352
50-353

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

November 5, 1984

The Appeal Board denies intervenors' motions that seek a stay of the issuance of a low-power license for the Limerick facility. Treating the motions as requests to suspend the low-power license authorization (because the license had already issued by the time the Appeal Board received the motions), the Appeal Board finds that the stay criteria have not been satisfied and that one of the motions is untimely.

RULES OF PRACTICE: STAY OF AGENCY ACTION
(CRITERIA)

In ruling on a stay request, appeal boards are required by the Commission's Rules of Practice to consider the same four factors traditionally applied by courts in deciding similar motions: (1) whether the moving party has made a strong showing that it is likely to prevail on the merits; (2) whether the party will be irreparably injured unless a stay is granted; (3) whether the granting of a stay would harm other parties; and (4) where the public interest lies. 10 C.F.R. § 2.788(e).

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(CRITERIA)**

The second factor contained in 10 C.F.R. § 2.788(e), irreparable harm, is often the most important in determining the need for a stay. *United States Department of Energy* (Clinch River Breeder Reactor Plant), ALAB-721, 17 NRC 539, 543-44 (1983); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 632 (1977).

**OPERATING LICENSE: LOW-POWER LICENSE (EFFECT
ON FULL-POWER LICENSE)**

The issuance of a low-power license does not begin an "inexorable" process that threatens the public safety. A full-power license will not and cannot be issued to any utility until it has demonstrated that the plant in question can be operated safely and in accordance with myriad regulatory requirements.

**OPERATING LICENSE: LOW-POWER LICENSE
(SUSPENSION)**

If a safety problem is revealed at any time during low-power operation or as a result of the merits review of a party's appeal of authorization of that operation, the low-power license can be suspended. *See, e.g., Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Unit 1), CLI-81-30, 14 NRC 950 (1981).

OPERATING LICENSE PROCEEDINGS: ECONOMIC ISSUES

The Commission's long-held view on economic concerns is that they are not within the proper scope of issues litigated in NRC licensing proceedings. A nuclear plant's possible effect on rates, the utility's solvency and the like are best raised before state economic regulatory agencies. *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975 (1984).

**RULES OF PRACTICE: STAY OF AGENCY ACTION
(TIMELINESS OF REQUEST)**

Under 10 C.F.R. §§ 2.788(a) and 2.710, a party is obliged to seek a stay within 15 days of the service date of a licensing board decision.

RULES OF PRACTICE: STAY OF AGENCY ACTION

A party's motion for stay will be denied where the movant wholly fails to address the stay criteria of 10 C.F.R. § 2.788(e). See *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-493, 8 NRC 253, 270-71 (1978).

APPEARANCES

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

Robert J. Sugarman, Philadelphia, Pennsylvania, for intervenor Delaware Unlimited, Inc.

Troy B. Conner, Jr., Mark J. Wetterhahn, and Robert M. Rader, Washington, D.C., for applicant Philadelphia Electric Company.

Benjamin H. Vogler and Ann P. Hodgdon for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

In its second partial initial decision in this operating license proceeding, the Licensing Board authorized the issuance of a low-power license to applicant Philadelphia Electric Company (PECo). LBP-84-31, 20 NRC 446 (1984).¹ In two subsequent orders, the Board declined to stay, and reaffirmed as well, the effectiveness of its low-power license authorization. Licensing Board Order of September 7, 1984 (unpublished); Licensing Board Memorandum and Order of October 15, 1984 (unpublished). In filings dated October 23 and 25, 1984, intervenors Friends of the Earth (FOE) and Del-Aware Unlimited, Inc., have asked us to stay, respectively, LBP-84-31 and the Board's October 15 order.² Although their precise requests differ, FOE and Del-Aware both seek the same ul-

¹ A low-power license permits fuel loading and low-power testing up to five percent of rated power.

² FOE has also appealed LBP-84-31 and a related order, and Del-Aware has appealed the Board's October 15 order.

timiate relief — a stay of the issuance of a low-power license to PECO. Applicant and the NRC staff oppose intervenors' requests.

On October 26, however — unbeknown to us and before we had received either stay request — the NRC's Director of Nuclear Reactor Regulation (NRR) issued a low-power license to PECO.³ Thus, in an order issued October 29, 1984, we indicated that we would treat the two stay requests as motions to suspend the underlying authorization for the license, and we expedited the time for filing replies. We also noted that the criteria applicable to deciding stay requests would apply.

As explained below, both FOE and Del-Aware have failed to satisfy their burden of demonstrating that PECO's low-power license should be suspended. Accordingly, we deny the motions.

1. In ruling on a stay request, we are required by the Commission's Rules of Practice to consider the same four factors traditionally applied by the courts in deciding similar motions:

- (1) Whether the moving party has made a strong showing that it is likely to prevail on the merits;
- (2) Whether the party will be irreparably injured unless a stay is granted;
- (3) Whether the granting of a stay would harm other parties; and
- (4) Where the public interest lies.

10 C.F.R. § 2.788(e). Further, in several decisions, we have noted that the second factor, irreparable harm, is often the most important in determining the need for a stay. *United States Department of Energy* (Clinch River Breeder Reactor Plant), ALAB-721, 17 NRC 539, 543-44 (1983); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-437, 6 NRC 630, 632 (1977).

FOE has attempted, albeit briefly, to satisfy these criteria. It argues that (1) the reactor building is not able to withstand overpressures from postulated external explosions; (2) fuel was brought into the plant in violation of NRC regulations, the Atomic Energy Act, and the National Environmental Policy Act; and (3) once Limerick begins to operate, an inexorable process will start, which will threaten safety, increase electric rates, impair the region's economy, and force FOE's representative (Robert L. Anthony) to move from the area. FOE acknowledges that a stay will delay testing at Limerick, but contends that the safety and economic concerns it has raised must take precedence.

FOE provides no citations to the record or substantive argument in support of its view that the reactor building is not able to withstand over-

³ We do not suggest that the Director acted improperly in issuing the license.

pressures from external explosions. The Licensing Board addressed this matter at length during the hearing and in LBP-84-31 and a subsequent order denying FOE's motion to reopen on this issue. See LBP-84-31, *supra*, 20 NRC at 464-97; Licensing Board Order of October 5, 1984 (unpublished). We have reviewed the Board's decision in this regard and, although we express no view on the merits of FOE's appeal, see no cause to suspend the low-power license on this basis.

As for the assertedly unlawful delivery and transfer of the fuel into the plant, we ourselves have discussed this matter at length on two earlier occasions. See ALAB-765, 19 NRC 645 (1984); ALAB-778, 20 NRC 42 (1984). FOE gives us no basis on which we could alter our earlier judgment that the fuel was moved properly and does not present a safety risk. As FOE has pointed out, this matter (specifically, review of ALAB-765) is pending before the U.S. Court of Appeals for the Third Circuit. *Anthony v. Philadelphia Electric Co.*, No. 84-3409 (3d Cir. filed June 28, 1984). The court, however, denied Mr. Anthony's request for a stay on July 12, 1984.

FOE is mistaken in its belief that issuance of a low-power license begins an "inexorable" process that threatens the public safety. In the first place, a full-power license will not and cannot be issued to any utility until it has demonstrated that the plant in question can be operated safely and in accordance with myriad regulatory requirements.⁴ Further, if a safety problem is revealed at any time during low-power operation or as a result of the merits review of the parties' appeals, the low-power license can be suspended. See, e.g., *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Unit 1), CLI-81-30, 14 NRC 950 (1981). With respect to the economic concerns noted by FOE in this connection, they are not within the proper scope of issues litigated in NRC proceedings. The Commission has just recently reaffirmed its long-held view that a nuclear plant's possible effect on rates, the utility's solvency, and the like is best raised before state economic regulatory agencies. *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975 (1984). And, finally, an individual's decision to move away from the vicinity of a nuclear plant is necessarily a personal one.

FOE has therefore failed to show that it is likely to prevail on the merits of its appeal and that it will be irreparably harmed unless the low-power license is lifted. Nor has it shown that such action is within the public interest.

⁴ The Licensing Board has not yet completed the hearing on issues that must be resolved before a full-power license can be issued.

Even if FOE had succeeded in its burden, however, its October 23 request is untimely under the Commission's rules and could be denied on that ground as well. FOE has requested a stay of LBP-84-31, which was issued August 29. Under 10 C.F.R. §§ 2.788(a) and 2.710, FOE was obliged to seek a stay within 15 days of the service date of that decision — i.e., by September 13. FOE's motion to reopen, then pending before the Licensing Board, did not stay the effectiveness of the Board's unequivocal low-power license authorization embodied in LBP-84-31. Further, FOE was so advised of this in the Licensing Board's Order of September 7, *supra*. The delayed filing of FOE's appeal, pursuant to our permission, also did not stay the effect of LBP-84-31 or extend the time for seeking such a stay. See Appeal Board Order of September 28, 1984 (unpublished).

2. In ALAB-785, 20 NRC 848 (1984), we affirmed most of the Licensing Board's earlier partial initial decision and related orders concerning the supplementary cooling water system (SCWS) for Limerick. We remanded, in part, however, in order to give Del-Aware the opportunity to reformulate and to resubmit two of its SCWS contentions that the Board had excluded from consideration. *Id.* at 866-70, 874-76, 885. Following the issuance of ALAB-785, PECO asked the Licensing Board to confirm that, despite the partial remand of SCWS issues, the low-power license authorized in LBP-84-31 could nonetheless be issued. After obtaining the parties' comments on this matter, the Licensing Board agreed with PECO and reaffirmed the effectiveness of the license authorization made in LBP-84-31. Licensing Board Order of October 15, *supra*. It is that ruling that Del-Aware asks us to stay.

Del-Aware makes no effort to address the four factors in 10 C.F.R. § 2.788(e) pertinent to our decision. It asserts generally and without citation to the record that operation of the Limerick facility "may" be dependent on operation of the supplementary cooling water system. It claims further that supplemental cooling water is necessary for the safe shutdown of the plant in the event that a tornado were to destroy the cooling tower. In conclusion, Del-Aware simply states that "[a] stay is necessary and appropriate because of the environmental and safety implications of the low power testing without the supplemental cooling water system, as set forth in Intervenor's Answer to Applicant's Motion (dated October 10, 1984)."⁵

⁵ The other pleading to which Del-Aware refers, without even any particular page citations, is as generalized in its arguments as is the motion before us here.

PECO argues that Del-Aware lacks standing to make the arguments put forth in its petition for stay and that we lack jurisdiction to rule on them. We need not decide either question, inasmuch as we find

(Continued)

The Licensing Board earlier explained to Del-Aware that the SCWS is not needed even for *full-power* operation during certain times of the year (e.g., the fall through spring months) and that it is not needed at all for safe shutdown of the plant. A fortiori, the SCWS is not necessary for low-power operation. See Licensing Board Memorandum and Order of August 24, 1984 (unpublished), at 23-25. See also LBP-84-31, *supra*, 20 NRC at 492; Letter from V.S. Boyer to A. Schwencer (Oct. 19, 1984), attached to Applicant's Opposition to Motions for Stay (Nov. 2, 1984). Having wholly failed to show any error in the Board's reasoning, Del-Aware has not persuaded us that a suspension of the low-power license is warranted. Del-Aware's motion is therefore denied. See *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-493, 8 NRC 253, 270-71 (1978).

FOE's motion for a stay of LBP-84-31 and Del-Aware's petition for a stay of the Licensing Board's October 15, 1984, order, treated as requests to suspend the underlying low-power license authorization, are *denied*.

It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

no basis to grant Del-Aware's stay request. PECO remains free to raise these issues again in response to Del-Aware's brief on appeal. We note, however, our preliminary view that Del-Aware's arguments — though vague and generalized — thus far clearly relate to the SCWS that it challenged below, we addressed in ALAB-785, and the Licensing Board considered again in its appealable October 15 order in response to PECO's own motion.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Gary J. Edles
Dr. Reginald L. Gotchy

In the Matter of

Docket Nos. 50-338-OLA-2
50-339-OLA-2

**VIRGINIA ELECTRIC AND
POWER COMPANY**
**(North Anna Power Station,
Units 1 and 2)**

November 20, 1984

Determining that, in the particular circumstances of the case, the appellant had sustained no present or potential injury by the Licensing Board's denial of its intervention petition, the Appeal Board dismisses its appeal from that denial.

NEPA: ENVIRONMENTAL IMPACT STATEMENT (NEED)

Section 102(2)(C) of the National Environmental Policy Act of 1969, 42 U.S.C. 4332(2)(C), requires a federal agency to prepare an environmental impact statement (EIS) in every recommendation or report on proposals for legislation or other major federal actions significantly affecting the quality of the human environment. If, however, after an initial environmental assessment, the agency determines that no significant impact will result from a proposed action, without additional analysis it may publish a statement indicating that such is the case.

RULES OF PRACTICE: STANDING TO APPEAL

It is well-settled that in Commission practice as in judicial proceedings, only a party aggrieved may appeal. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-644, 13 NRC 903, 914 (1981), and cases there cited.

APPEARANCES

James B. Dougherty, Washington, D.C., for Concerned Citizens of Louisa County.

Michael W. Maupin, Patricia M. Schwarzschild and Marcia R. Gelman, Richmond, Virginia, for the Virginia Electric and Power Company.

Henry J. McGurran for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

Concerned Citizens of Louisa County (CCLC) has appealed under 10 C.F.R. 2.714a from a portion of the Licensing Board's October 15, 1984 memorandum and order entered in two related proceedings involving proposed amendments to the operating licenses for the North Anna nuclear facility. In that order, the Board admitted CCLC as a party to one of those proceedings but denied it intervenor status in the other. Before us, CCLC urges that it was entitled to intervene in both. It appearing, however, that CCLC has sustained no present or potential injury in fact as a consequence of the challenged action below, we dismiss the appeal.¹

I.

The two license amendments in question are desired by the applicant Virginia Electric and Power Company (VEPCO) to ameliorate a severe

¹ We accordingly do not reach the merits of either CCLC's attack upon the October 15 order or the insistence of the applicant and the NRC staff that the order should be affirmed.

spent fuel storage problem at its Surry nuclear facility located near Newport News, Virginia. The first of the amendments, referred to as "OLA-1," would permit the receipt and storage of 500 Surry spent fuel assemblies at VEPCO's North Anna nuclear facility, located in Louisa County, Virginia, approximately 100 miles from Surry. The second amendment, referred to as "OLA-2," would permit the expansion of the capacity of the North Anna spent fuel pool to enable it to accommodate the received Surry assemblies.²

Insofar as here relevant, CCLC sought intervention in the OLA-1 and OLA-2 proceedings on the strength of identical contentions:

The proposed license amendment constitutes a major federal action significantly affecting the human environment, and thus may not be granted prior to the preparation of an environmental impact statement[:]

Neither VEPCO nor the NRC [s]taff has adequately considered the alternative of constructing a dry cask storage facility at the Surry station [: and]

The Environmental Assessment prepared by the NRC [s]taff is inadequate in [that] . . . it does not evaluate the risks of accidents (including sabotage) involving Surry-North Anna shipments[.] . . . the consequences of [such] credible accidents . . . [, and] the alternative of constructing a dry cask storage facility at the Surry station.³

Further, in large measure, the bases assigned in each proceeding for the contentions were the same. According to CCLC, the packing and transportation of the Surry assemblies will entail substantial safety and environmental risks.⁴ For this reason, CCLC maintained, the NRC staff was required by the National Environmental Policy Act of 1969⁵ to prepare a full environmental impact statement in which, among other things, it considered the alternative of constructing a dry cask storage facility at Surry.⁶

² This expansion would be accomplished by replacing the high-density fuel racks currently installed in the North Anna pool with neutron absorber fuel racks. The change would increase storage capacity of the spent fuel pool from 966 to 1737 fuel assemblies. Environmental Assessment, attached to July 3, 1984 letter from D. Hassel to Licensing Board, at 2.

³ Attachment to letter from J. Dougherty to Licensing Board (July 30, 1984) (hereafter Contentions) at 1, 3, 4, 6, 7, 8.

⁴ *Id.* at 1, 6.

⁵ 42 U.S.C. 4321. Section 102(2)(C) of that Act, 42 U.S.C. 4332(2)(C), requires a federal agency to prepare an environmental impact statement (EIS) "in every recommendation or report on proposals for legislation or other major Federal actions significantly affecting the quality of the human environment." A full EIS, however, is not always necessary. If, after an initial environmental assessment, the agency determines that no significant impact will result from a proposed action, without additional analysis it may publish a statement indicating that such is the case. This is what occurred in this instance. The NRC staff performed a single environmental assessment that considered both proposed license amendments and concluded that a complete EIS was unnecessary because neither amendment would have a significant environmental impact.

⁶ Contentions at 3, 4-5, 7-9.

With regard to the North Anna spent fuel pool, CCLC did not contend that the proposed modification would pose safety risks; nor did it identify any significant environmental impact that conceivably might flow from the modification. CCLC did assert, however, that the two sought amendments were so closely related that they could not be separated for purposes of environmental analysis.⁷

In its October 15 order, the Licensing Board concluded that the contentions and assigned bases were sufficient to allow CCLC's intervention in the OLA-1 proceeding concerned with the receipt and storage at North Anna of the Surry spent fuel. It reached, however, the diametrically opposite result with respect to the OLA-2 proceeding. As the Board saw it, the bases assigned for the contentions were inadequate to allow CCLC to be heard with regard to the proposed modification of the North Anna spent fuel pool. Thus, CCLC's petition to intervene in the OLA-2 proceeding was denied and, there being no other petitioners for intervention, the proceeding was dismissed.⁸

II.

It is well-settled that, "[i]n Commission practice as in judicial proceedings, only a party aggrieved may appeal."⁹ In the unique circumstances of this proceeding, we are satisfied that CCLC cannot be deemed aggrieved by the rejection of its endeavor to intervene in the OLA-2 proceeding. Our conclusion in this regard rests upon the following factors:

1. As we have seen, none of the three contentions that CCLC advanced in the OLA-2 proceeding is founded upon a particularized claim that the modification of the North Anna spent fuel pool might pose a health and safety risk to CCLC members or have a significant environmental impact. Rather, it is clear from the bases assigned for the contentions that CCLC's entire focus is upon the risks assertedly associated with the packing and transportation of the Surry spent fuel assemblies. Having been admitted (on the footing of the very same three contentions) to the OLA-1 proceeding which is specifically addressed to the receipt and storage of the assemblies at North Anna, CCLC will have a full opportunity to litigate those concerns before any of the assemblies might be packed and transported.

⁷ *Id.* at 6.

⁸ Memorandum and Order of October 15, 1984, *supra*, at 9.

⁹ *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 & 2), ALAB-644, 13 NRC 903, 914 (1981), and cases there cited.

2. Consequently, the only practical effect of the challenged action below is that the modification of the North Anna spent fuel pool might take place before the Licensing Board determines whether the receipt and storage of the Surry assemblies at North Anna should be authorized. Because, however, CCLC at least implicitly acknowledges that it would not have significant safety or environmental implications, the undertaking of the modification at this time perforce could occasion no harm to the organization or its members.

3. Finally, the OLA-2 authorization cannot affect to any extent either (a) CCLC's right to participate in the OLA-1 proceeding on the matters of concern to it; or (b) the outcome of that proceeding. As a matter of both fact and law, a modification of the North Anna spent fuel pool can and will have no bearing upon whether, over CCLC's objections, VEPCO is given the green light to transport the Surry assemblies for receipt and storage at North Anna. To the contrary, the fate of the OLA-1 application necessarily will hinge entirely upon the results of the independent safety and environmental appraisal of the receipt and storage proposal.¹⁰

For the foregoing reasons, CCLC's appeal from the Licensing Board's October 15, 1984 memorandum and order is *dismissed*.¹¹

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

¹⁰ See *Duke Power Co. (Transportation of Spent Fuel from Oconee Nuclear Station for Storage at McGuire Nuclear Station)*, ALAB-651, 14 NRC 307, 313-15 (1981). In this connection, it matters not that CCLC maintains that the environmental effects of the two proposals should be "summed" (i.e., added together). For, to repeat, CCLC pointed to no impact of the spent fuel pool modification that might be added to the asserted environmental impact of the receipt and storage proposal.

¹¹ This action moots CCLC's request for a *stay pendente lite* of the Licensing Board's dismissal of the OLA-2 proceeding and resultant authorization of the issuance of the pool modification license amendment.

Atomic Safety and Licensing Boards Issuances

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LICENSING BOARDS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Herbert Grossman, Esq.
Dr. Walter H. Jordan

In the Matter of

Docket Nos. 50-445-OL-2
50-446-OL-2
(ASLBP No. 79-430-06A-OL)

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

November 2, 1984

The Licensing Board vacates its order of September 17, 1984 (LBP-84-36, 20 NRC 928).

MEMORANDUM
(Request for Staff Analysis)

Pursuant to the suggestion of the Office of Investigation (OI) in its memorandum of October 25, 1984, we vacate our September 17, 1984 Order (LBP-84-36, 20 NRC 928) concerning OI documents. We also request the Staff to inform the Board about an appropriate deadline within which the Staff will advise the Board of its view whether all or part of the nineteen reports at issue (as well as other in-process OI investigations) are potentially relevant and material to the licensing proceeding.

including issues of intimidation and of management commitment to quality. We would appreciate the Staff taking special pains to explain, objectively and in as much detail as possible without violating confidences or rights to personal privacy, the possible relevance of all or part of the deleted materials.

ORDER

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Gustave A. Linenberger, Jr.
Dr. Oscar H. Paris

In the Matter of

Docket Nos. 50-424-OL
50-425-OL
(ASLBP No. 84-499-01-OL)

GEORGIA POWER COMPANY, *et al.*
(Vogtle Electric Generating
Plant, Units 1 and 2)

November 5, 1984

In this Memorandum and Order, the Licensing Board rules on Intervenor's objections to its Memorandum and Order deciding the admissibility of Intervenor's contentions. LBP-84-35, 20 NRC 887 (1984).

The Licensing Board further rules that Intervenor's request for an investigation into Applicants' practices provides no basis for broadening an existing contention relating to Applicants' quality assurance program.

MEMORANDUM AND ORDER

**(Ruling on Intervenor's Objections to Order of September 5, 1984,
and Other Matters)**

On September 5, 1984, we issued a Memorandum and Order, in the captioned proceeding ruling on the admissibility of proposed contentions of Intervenor Campaign for a Prosperous Georgia and Georgians Against Nuclear Energy. LBP-84-35, 20 NRC 887 (1984). Intervenor

timely filed objections on September 27, 1984, to the Board's rulings on Contentions 10.2 and 11. Pursuant to our recommendation Intervenor had consolidated their efforts and are acting jointly. We consider their contentions consolidated and movants as joint intervenors, hereinafter to be referred to as CPG/GANE.

Applicants, Georgia Power Company and the other owners, in accordance with our order, filed a reply to Intervenor's objections on October 12, 1984, and Nuclear Regulatory Commission Staff (Staff) did so on October 22, 1984.

In our Memorandum and Order of September 5, 1984, we asked the parties to confer for the purpose of rewording Contention 8, which relates to quality assurance. They were unable to agree and instead filed statements of position. This subject will be treated in this Memorandum and Order along with that above and a schedule will be set forth for submitting contentions on emergency planning for Plant Vogtle.

CONTENTION 10.2

Intervenor had asserted for their subcontention that synergistic effects in environmental qualification of equipment had not been considered by Applicants. We found Applicants had addressed synergistic effects on cable and that Intervenor had not identified any equipment or components which they believed to be susceptible to synergisms, and to which a contention would be directed. The subcontention was found to lack a specific basis and its admissibility was denied.

The September 27, 1984 objection to our ruling was in the nature of a petition for reconsideration. It offered nothing in support of their position that had not been previously submitted and considered. They continue not to identify any equipment or components that are alleged to be subject to environmental qualification requirements and for which synergism has a significant effect on equipment performance. Intervenor has not presented us with any valid grounds that would warrant the reconsideration of our prior ruling. The subcontention remains without basis and we reaffirm our prior ruling.

CONTENTION 11

Intervenor asserted in the proposed contention that Applicants failed to consider defects in the Vogtle steam generator system that constitute an undue risk to health and safety. In support, CPG/GANE cited an NRC summary of Unresolved Safety Issues (August 20, 1982) that

stated that the steam generator tubes, of a manufacturer that was to supply those for Plant Vogtle, had shown degradation from several causes.

To overcome some of the causes, the Vogtle FSAR recited specific measures which are to be taken to protect against water hammer effects and corrosion effects that include denting and stress corrosion cracking in the steam generator tubes. Intervenor failed to indicate in what specific manner any of these corrective measures, adopted by Applicants to overcome the possible deficiencies, are inadequate. Cited unresolved safety issues, consisting of bubble collapse or vibration-induced fatigue cracking mechanisms for tube degradation that could contribute to accidents associated with tube failure occasioned by these mechanisms were not addressed by Applicants in the FSAR.

Absent the submittal of basis by Intervenor to support a claim that deficiencies will exist in the Vogtle steam generator system arising from water hammer effects or corrosion effects, we narrowed the scope of Contention 11 to address only bubble collapse and vibration-induced fatigue cracking mechanisms for tube degradation.

Intervenor's objection to the Board's ruling is nothing more than a repetition of their original assertions made in support of the Contention, which we found wanting. They provide no grounds for the Board to reconsider its prior ruling, which is affirmed.

CONTENTION 8

In our Memorandum and Order of September 5, 1984, we determined that further inquiry was justified to determine whether Applicants have formulated and implemented an adequate quality assurance program for the facility. At that time CPG and GANE were individually participating in the proceeding. We found grounds to admit a contention of CPG (CPG Contention 8) whose interest was in the area of welds; and of GANE (GANE Contention 8), the scope of which extended to matters in addition to welds. We instructed the parties to confer about the language of the contentions with the objective of rewording them in a manner that would permit more focused litigation on the issue. CPG and GANE were asked to consider consolidating the two contentions.

The parties reported back to the Board that their efforts have been unsuccessful. CPG/GANE on October 10, 1984, submitted a revised contention on quality assurance covering "proper welding, placement of concrete, the use of properly trained personnel, inspection/testing, material preservation, procurement, and adequate and complete corrective action in response to violations." Applicants proposed that the scope of

the contention be limited to welding of both the reactor coolant and containment systems. Staff asserted that the CPG/GANE revised contention was overly broad and lacked specificity. Its position was that the CPG contention involving welds, that had been initially submitted, was close to admissibility.

Our review of the bases previously submitted by CPG and GANE to support the contentions on quality assurance, in the area of welds, found them to be sufficient to raise the issue in a broad context extending to such matters as inspection and the adequacy of radiographs made of the welds. Additional bases exist for a contention focusing on improperly documenting the placement of concrete, the inadequate testing of concrete and falsification of concrete quality test records. Sufficient grounds were provided for inquiry into the procurement practices of the Applicants insofar as they may result in the acquisition of substandard materials and into whether corrective action by Applicants is timely accomplished. Another area warranting development in the quality assurance program is whether Applicants' procedures for the protection of equipment are followed.

Intervenors have provided the grounds for a litigable contention in the specified areas, as to the adequacy of Applicants' quality assurance program for safely operating the subject facility.

CPG/GANE in their October 10, 1984 submittal, seek amendment of the bases for Contention 8 in the area of Applicants' procurement practices predicated upon two newspaper articles, of late August and early September 1984. The articles raised the possibility of costs having been increased for the Vogtle facility because of favoritism in the bidding process having been extended to a supplier of the Applicants, through the unauthorized release of bid information. Georgia Power Company discharged seven employees because of the practice. Intervenors request that an investigation be pursued to ascertain if the alleged favoritism extended to the quality of materials and to ascertain why the quality assurance program did not uncover the program deficiency long ago.

Applicants object to the amendment because Intervenors do not allege any connection between the procurement irregularities and Applicants' quality assurance program. They claim no link is established between the irregularities and the need for an investigation. The owners contend that the request to amend the bases for Contention 8 is inexcusably late and untimely. Furthermore, in an affidavit submitted by the Vice-President and Project General Manager of the Vogtle Project, it was stated that Georgia Power Company conducted an investigation which disclosed that the bidding practices primarily involved the purchase from one vendor of expendable supplies, which were not part

of the power plant structure and systems and not related to the quality of the plant. It was further recited that there was a minimal amount of safety-related work and material provided by the vendor, which audits and reviews by Georgia Power Company disclosed conformed to quality standards. Affiant reported that Georgia Power Company had also determined that adequate controls existed and were applied at Plant Vogtle to ensure that the subject vendor met the requirements of the engineering requisitions and purchase orders.

In a response of October 22, 1984, Staff believes that Intervenor's requested amendment of the bases of Contention 8 "is a step in the direction of providing a basis for a properly focused contention on whether the recent firing of seven of Applicants' workers and alleged favoritism to equipment suppliers extends to or affects the quality of the materials purchased from the suppliers in question or other suppliers." Staff suggests that the Board grant the parties additional time within which to attempt to agree on the wording of a Contention 8 limited to the recent allegations reported in the press.

The Board finds no grounds to permit the amendment of the bases underlying Contention 8, as sought by CPG/GANE. The newspaper articles on which the request is predicated do not in any way relate the reported procurement irregularities to any safety inadequacies at Plant Vogtle. A concern expressed in the articles was how the practices affected the costs of the plant and their being passed on to ratepayers. The purpose of the Commission's requirement for a quality assurance program is to assure the safe operation of the plant and is not imposed to promote cost effectiveness. Intervenor recognized the absence of an established nexus between the procurement irregularities and plant safety. At this stage what they seek is an investigation to determine if any exists. In that Applicants reported the findings of their investigation after Intervenor's request was made, it is unknown whether CPG/GANE now consider that further inquiry is unnecessary.

The request for an investigation does not provide the basis for broadening a litigable contention dealing with the merits of an existing quality assurance program. It would be premature to base a contention on matters that are wholly in the realm of speculation and may be non-existent. For that reason we deny the request to amend the bases of the contention, as requested.

Evidently Staff believes an investigation might establish a link between Applicants' procurement practices and the effectiveness of their quality assurance program. The action we have taken here should not in any way be construed as dissuading Staff from making an inquiry into this area. Licensing of the plant is dependent on Applicants' ability to operate

the plant safely. We should be advised of the results of any inquiry Staff makes and informed if action is required by the Board.

Based upon our findings in the Memorandum and Order of September 5, 1984, and the above, we restate the consolidated CPG/GANE Contention 8 as follows:

Applicants have not and will not implement a quality assurance program for Plant Vogtle for welding, for properly documenting the placement of concrete, for adequately testing concrete, for the preparation of correct concrete quality test records, for procuring material and equipment that meet applicable standards, for protecting equipment and for taking corrective action as required, so as to adequately provide for the safe functioning of diverse structures, systems and components, as required by 10 C.F.R. Part 50, Appendix B, such that reasonable assurance exists that operation of the facility will not endanger the public health and safety.

CONTENTIONS ON EMERGENCY PLANNING

In the September 5, 1984 Memorandum and Order, Intervenors were authorized to submit revised contentions on emergency planning, within 30 days of Applicants' issuance of the emergency plans. It was expected Applicants would do so about October 1, 1984. Applicants now expect to file onsite emergency plans in December 1984. Official State and county emergency plans are expected to be filed in May 1985 but a draft is expected to be made available before then. The parties have agreed and we concur that any CPG/GANE contentions relating to onsite emergency plans and the arrangements which Applicants have made with the Department of Energy Savannah River Project, concerning the latter's response within the Savannah River site to an emergency at Vogtle, shall be filed within 30 days after each of the respective filings are made with the parties. Contentions related to the State and county emergency plans shall be due within 30 days of the time of their filing with the parties, or if draft plans are provided, within 30 days after furnishing of the draft.

Order

Based upon all of the foregoing, it is hereby Ordered:

1. Intervenors' objections to the Board's Rulings on Contentions 10.2 and 11, in the Memorandum and Order of September 5, 1984, are overruled.
2. Intervenors' Contention 8 is restated and admitted as set forth above. The request to amend the bases of Contention 8 is denied.

3. The time for filing revised contentions on emergency planning is as set forth above.

THE ATOMIC SAFETY AND
LICENSING BOARD

Morton B. Margulies, Chairman
ADMINISTRATIVE LAW JUDGE

Gustave A. Linenberger, Jr.
ADMINISTRATIVE JUDGE

Dr. Oscar H. Paris
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 5th day of November 1984.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Peter B. Bloch, Chairman
Herbert Grossman, Esq.
Dr. Walter H. Jordan

In the Matter of

Docket Nos. 50-445-OL-2
50-446-OL-2
(ASLBP No. 79-430-06A-OL)

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

November 16, 1984

The Licensing Board refuses to honor a grant of privilege for some documents created by Joseph J. Lipinsky and said to be covered by attorney-client privilege. The Board finds that Applicants' lawyer could not properly represent Mr. Lipinsky, who had previously taken a position adverse to Applicants' and who therefore had an irreconcilable conflict of interest. In addition, the Board honors a limited claim of privilege for documents for which attorney work product privilege was claimed but denies the privilege for other documents for which the Board found an overriding interest in obtaining the documents because of their importance in the proceeding.

RULES OF PRACTICE: EVIDENCE (ATTORNEY-CLIENT PRIVILEGE)

Documents are not privileged pursuant to an attorney-client privilege if they were generated in the course of an attorney-client relationship that appeared to exist but could not exist because of an irreconcilable conflict-of-interest. An attorney-client relationship cannot be used to draw down a mask of secrecy over an attorney's relationship with an individual whose position was adverse to the position of another client whom the attorney continues to represent.

RULES OF PRACTICE: EVIDENCE (WORK PRODUCT PRIVILEGE)

A claim of work product privilege may be overridden with respect to documents for which there is an important evidentiary need.

**MEMORANDUM
(Lipinsky Privileges)**

I. INTRODUCTION

The "O.B. Cannon issue" arose in this case because of an internal O.B. Cannon memorandum (Lipinsky Memorandum) that mysteriously "leaked" and became public knowledge. That memorandum was prepared by Mr. Joseph J. Lipinsky, who was O.B. Cannon's quality assurance manager. The information contained in the memorandum was collected by Mr. Lipinsky in fulfillment of O.B. Cannon's contractual commitment to review Comanche Peak's painting program as a consultant to Applicants' management.

Among the more damaging conclusions stated in the Lipinsky Memorandum are:

preliminary assessment that Comanche Peak has problems in the areas of material storage, workmanship (quality of work and painter qualification and indoctrination), not satisfying ANSI requirements and possibly coating integrity.

* * *

to some extent a parallel can be drawn with Comanche Peak and Zimmer. Comanche Peak is doing inspections to the degree that they . . . are comfortable or will tolerate.

* * *

often the writer felt that B&R wanted to buy the "right" answer. This is substantiated to some extent by the fact that they did not try to utilize the expertise and/or experience of the writer with regard to Quality Assurance/Quality Control, and the attitude of the B&R management (specially Quality Assurance).

Subsequent to this "leak," Mr. Lipinsky met with Applicants' personnel and lawyers. For a substantial portion of this time, Mr. Lipinsky appears to have continued to assert the validity of his conclusions. However, when he appeared for a sworn statement before a Nuclear Regulatory Commission (NRC) investigator, he was represented personally by a lawyer who also represents Applicants. In that interview and subsequently, Mr. Lipinsky testified that his preliminary conclusions were hastily drawn and do not raise serious problems.

The Board is concerned about whether Mr. Lipinsky's preliminary conclusions may be correct and about the process through which Mr. Lipinsky appears to have changed his mind.

Accordingly, on October 4, 1984, the Atomic Safety and Licensing Board in the harassment/intimidation portion of the operating license proceeding issued subpoenas duces tecum to O.B. Cannon executive personnel Robert B. Roth, John J. Norris, and Joseph J. Lipinsky. The Board's subpoenas requested the production of

All records, including notes or recordings, in the possession or control of O.B. Cannon or its agents and relating directly or indirectly to: (1) work planned, discussed or conducted by O.B. Cannon for Texas Utilities Electric Company or its successors and their agents (Comanche Peak) during or after 1983, (2) the purpose or process of planning for the "Lipinsky Memo Meeting of November 10-11, 1983," and (3) the contractual or informal relationship between O.B. Cannon and Comanche Peak, including payments between them.

Attached to the subpoenas was a memorandum issued by the Board providing an explanation of the Board's request and defining the breadth of documents the Board determined was encompassed by each subpoena.

The schedule of documents attached to the subpoena to the witnesses should be broadly interpreted in light of the purposes for which we are seeking testimony. For example, records relating to meetings prior to November 11 in which the witnesses discussed the Lipinsky report or its basis should be included in (2) of the schedule. Notes or recordings made at such prior meetings or memoranda or letters discussing those meetings are relevant. Similarly, any records that shed light on the termination or suspension of work under Applicants' purchase order are clearly relevant. Nothing in this paragraph should be interpreted to limit the scope of the attached schedule.

Memorandum (Testimony of O.B. Cannon Witnesses) at 2, October 4, 1984.

Counsel for O.B. Cannon submitted several documents in response to the Board's request but withheld one memorandum and 3 days of calendar diary notes, all prepared by Mr. Lipinsky. (Brief in Support of Lipinsky Privilege, November 5, 1984). Applicants informed the Board that they reviewed the O.B. Cannon files and cited fifteen documents for which they asserted attorney-client privilege or work product privilege. (Letter, McNeil Watkins, II, to Atomic Safety and Licensing Board (ASLB), October 18, 1984; Applicants' Motion to Supplement Statement as to Privileged Trial Preparation Materials, October 19, 1984.) Intervenor CASE submitted a Brief in Opposition to Applicants' nondisclosure of the materials designated by the Applicants as privileged. CASE alleged that those documents not produced bear heavily on the question of whether Mr. Lipinsky was "pressured, coerced or influenced into recanting and changing the conclusions that he originally reached about coatings and related quality control at Comanche Peak." CASE Brief in Opposition to Applicants Request for Nondisclosure of Relevant Lipinsky Documents, October 26, 1984.

We accept CASE's above statement of the issue. We find a reasonable nexus between it and Applicants' management's character, an issue which has arisen in the course of litigation in this part of the case. See *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-84-13, 19 NRC 659 (1984).

In ruling on the motion for production now before the Board, we must determine (1) whether the privileges asserted are properly claimed, and (2) if the material is privileged, whether there is an overriding necessity for production to overcome the traditional policy considerations in favor of withholding privileged documents.

II. ATTORNEY-CLIENT PRIVILEGE

We begin with a discussion of the attorney-client privilege claimed by Mr. Lipinsky. The substance of Mr. Lipinsky's assertion is that attorneys with the firm actively representing Applicants (Texas Utilities Electric Company) in the licensing proceeding also represented Mr. Lipinsky in his capacity as a consultant to Applicants, and as his personal counsel during a deposition conducted by the NRC on January 4, 1984.

Based on a letter dated November 14, 1984, from counsel for O.B. Cannon to CASE Attorney Anthony Roisman and on a confirming entry in his diary, Mr. Lipinsky allegedly formally requested the legal representation of Mr. Reynolds and his firm on November 29, 1983. From the facts presently before the Board we cannot determine whether Mr.

Lipinsky was represented by Applicants' counsel as of November 29, 1983.

Before delving into the facts of whether and when an attorney-client relationship existed, the Board expresses serious concern over this matter because it appears that the Code of Ethics section on Conflict of Interest and Impermissible Representation may have been transgressed. Rule 1.7(b)(1) states:

(b) A lawyer shall not represent a client if the representation of that client may be materially limited by the lawyer's responsibilities to another client or to a third person, or by the lawyer's own interests, unless:

(1) the lawyer reasonably believes the representation will not be adversely affected;

We believe, given the content of the Lipinsky report (as discussed *infra*), that it would not be reasonable for attorneys for Applicants to believe they could properly represent Mr. Lipinsky. His interest as a non-party deponent (which he amply illustrated in his diary notes) was solely to prevent his being forced into making fraudulent statements (potentially actionable against him) favorable to Applicants' coatings program in order to protect his position with O.B. Cannon. This interest was not compatible with the primary interest of Applicants in having Mr. Lipinsky assist Applicants in discounting the importance of the Lipinsky Memorandum.

Prior to the time he allegedly engaged counsel, Mr. Lipinsky had argued that an audit would be required to settle his uncertainties. He had learned at a meeting with Applicants on November 10 and 11, 1983, that they did not share his view. This apparent divergence of opinion meant that Mr. Lipinsky required legal advice about whether to maintain his original views and risk possible business or legal consequences or whether to reconsider his position. This latter course also had its perils because Mr. Lipinsky needed to consider in detail whether he could legitimately testify under oath that information he had collected and conclusions he had drawn were not valid.

Although the letter from O.B. Cannon's counsel states Mr. Lipinsky was advised of the potential conflict of interest but that he voluntarily consented to the representation, we see representation by Applicants' attorneys as impermissible.

We are persuaded by two comments contained in the Model Rules of Professional Conduct, adopted by the American Bar Association on August 2, 1983. The comments are contained under Rule 1.7, the general rule pertaining to conflict of interest. These comments compel the conclusion that it was impermissible for Applicants' law firm to have

agreed to accept Mr. Lipinsky as a client. The first statement references loyalty to a client:

Loyalty to a client is impaired when a lawyer cannot consider, recommend or carry out an appropriate course of action for the client because of the lawyer's other responsibilities or interests. The conflict in effect forecloses alternatives that would otherwise be available to the client.

The test whether a conflict precludes representation involves a determination that:

it will materially interfere with the lawyer's independent professional judgment in considering alternatives or foreclose courses of action that reasonably should be pursued on behalf of the client.

We are unconvinced that Mr. Nicholas S. Reynold's firm could represent Mr. Lipinsky adequately in light of the firm's relationship to Applicants. The firm could not fully pursue with him the option of continuing to support his story. This conclusion is buttressed by the other statement crucial to our view:

An impermissible conflict may exist by reason of substantial discrepancy in the parties' testimony, incompatibility in positions in relation to an opposing party or the fact that there are substantially different possibilities of settlement of the claims or liabilities in question.

Applicants' counsel had a serious incentive not to defend the validity of the evaluations and conclusions contained in Mr. Lipinsky's Memorandum. Had they taken Mr. Lipinsky's view as accurate or reasonable, the position in which Applicants would have been placed would be a difficult one to defend to the Board and Staff in the licensing proceeding.

Even if we concluded that there was no ethical barrier to representing Mr. Lipinsky, for the Board to accept the attorney-client privilege, it must be established initially that an attorney-client relationship existed during the period in which the documents in question were generated. To help it to make that determination, the Board earlier inquired directly of Mr. Watkins and Mr. Norris as to the nature of the relationship between the Applicants' law firm and O.B. Cannon personnel. (*See* Tr. Oct. 1, 1984, at 18,721-27.) Based on the testimony elicited, the Board finds that for the extended period of time as suggested in the briefs submitted by Applicants and O.B. Cannon, no attorney-client relationship existed between the law firm retained by Applicants and O.B. Cannon employees working as Applicants' consultants.

At the October 1, 1984 hearing, counsel for Applicants and the O.B. Cannon witness, Norris, were asked repeatedly about the existence of any attorney-client relationship between Applicants' counsel and O.B. Cannon personnel. They were questioned specifically about past or present relationships and any or all relationships between the law firm and the O.B. Cannon firm or its individual employees. Tr. 18,721, 18,725-27, 18,734-37. Counsel and witness Norris were precise in their responses that the only attorney-client relationship between the law firm and the O.B. Cannon firm or personnel, other than a possible derivative one based on O.B. Cannon being a consultant for Applicants, was the representation by counsel Watkins of Mr. Lipinsky on only the date of January 4, 1984, at the deposition taken of Lipinsky by the NRC. *Ibid.* (Although the testimony of Mr. Norris is subject to a motion to strike, he has had the opportunity to contradict these statements and has not filed any testimony to that effect.)

During the course of the discussion on the transcript pages noted above (Tr. 18,721-27, 18,734-37), counsel had ample time to provide the Board with a full and complete explanation of the relationship between O.B. Cannon and Applicants' counsel if any existed in the past, or at the time of the hearing. Applicants' counsel would persuade the Board that there has been an ongoing attorney-client relationship based on O.B. Cannon's employment as a consultant to Applicants. The Board does not agree, and we conclude that O.B. Cannon, by virtue of its being a consultant to Applicants, does not thereby simply become a client of Applicants' counsel. Further, we find no evidence of any document establishing an attorney-client relationship between Applicants' law firm and O.B. Cannon. No contract or retainer agreement was mentioned by Mr. Watkins at the October 1984 hearing or by Mr. Lipinsky in his affidavit dated November 1984. Although O.B. Cannon now appears to have paid for the legal expenses, there is no indication that the firm had retained counsel prior to January 4, 1984, that Mr. Lipinsky had any belief other than that Applicants were paying for "his" counsel, or that Mr. Lipinsky ever intended to pay for counsel. See letter from Joseph Gallo, counsel for O.B. Cannon, to Anthony Roisman, counsel for CASE, November 14, 1984 (Gallo Letter).

While we recognize that Applicants' counsel represented Mr. Lipinsky on January 4, 1984, we do not find credible other statements indicating an attorney-client relationship between Applicants' law firm and O.B. Cannon during the preceding several months. Our determination is supported by Mr. Norris' testimony concerning the meeting he and Mr. Lipinsky attended on November 22, 1983, at the Washington, D.C. office of Applicants' counsel concerning so-called "Lipinsky Memorandum."

At the October hearing, Judge Bloch propounded several questions relating to the interaction at that conference between Messrs. Reynolds and Walker and Messrs. Norris and Lipinsky. Each of Mr. Norris' responses indicates the attorneys were acting solely on behalf of Applicants.

Q. Was he [Mr. Watkins] giving you legal advice?

A. Negative.

Q. What did he say?

A. Well, they were asking Joe the details about the memo, as I remember it. I was an observer there. It's Joe's memo; you know, it's Joe's to defend, if he has to defend it, and prove it if he has to prove it.

Q. Were they giving Joe legal advice?

A. No, not to my knowledge. I think Joe as I remember it, mentioned just in passing that he felt like he was going to retain his own attorney. And to the best of my knowledge, I never discussed it with Joe. I think he probably retained somebody locally to give him legal advice.

(Emphasis added. Tr. 19,882-83).

The Board notes that an understanding of legal advice given to a non-professional is not dispositive of whether legal advice was provided. However, the dialogue adds weight to the Board's determination by corroborating Mr. Watkins' statement that his firm's representation of Mr. Lipinsky took place solely on January 4, 1984. (*See infra* Tr. at 18,725). Mr. Norris' perception that Mr. Lipinsky may have desired a personal attorney different from Applicants' counsel also calls into some doubt Mr. Lipinsky's alleged sudden desire to retain Applicants' counsel just 7 days later.

Finally, the Board finds significant the diary notation by Mr. Lipinsky prior to his attendance at the November 22 meeting between Applicants' counsel and other O.B. Cannon personnel. In two separate entries Mr. Lipinsky described Mr. Reynolds as the "Tugco attorney."

Message from D.M. (In Houston — 1205 Hrs E Street 11/21/83) JJN on way to airport to Washington, D.C. to Tugco Attorney

* * *

Purpose of meeting with Tugco attorney — not sure.

We find it noteworthy that before Mr. Lipinsky allegedly engaged Mr. Reynolds as counsel, i.e., before November 29, 1983 (*see* Gallo Letter), the contacts between Mr. Lipinsky and Applicants' firm were initiated at the attorneys' behest. Generally, the steps one takes to retain an attorney are initiated by the potential client, and not by an attorney.

The conferences throughout November 1983 where the law firm representing Applicants met with Mr. Lipinsky were tense because they were an attempt to ascertain Mr. Lipinsky's position. These meetings could have set a tone that would have interfered with subsequent communications, which could not therefore be full and candid. Thus, it makes more questionable an open, unconstrained relationship between attorneys for Applicants and Mr. Lipinsky. Such freedom to discuss important matters is a crucial factor in the attorney-client relationship.

It is also clear to us that Mr. Lipinsky could not have fully discussed his concerns with Mr. Reynolds, who would have been immediately obligated to relay the information to Applicants. Furthermore, it was Mr. Lipinsky's understanding that he would immediately lose the assistance of counsel were he to take a position adverse to Applicants. Gallo Letter at 2.

The assertion of privilege with respect to Mr. Lipinsky's diary notes from November 29 to January 3 is especially troubling. According to Lipinsky's notes of November 14, 1983, the diary was initiated at the suggestion of NRC investigators to enable Lipinsky to protect his employment rights in the event he were fired over the Comanche Peak incident. Whatever claims of attorney-client confidentiality may be asserted with regard to communications between Lipinsky and Applicants' attorneys cannot extend to these diary notes even if they were prepared solely for Mr. Lipinsky's private use. See for example Weinstein's Evidence, ¶ 503(b)[03]. Here, where the documents were for potential public use, the claim for privilege is even weaker. We would not have expected Mr. Lipinsky to record truly confidential matters in this diary.

The significance of the diary notes kept by Mr. Lipinsky is that if counsel merely clarified his initial statements in the course of representation, those notes should support counsel's position. If, on the other hand, initial statements were modified to suit Applicants' needs, those notes would be expected to indicate the extent of Mr. Lipinsky's voluntary participation in that process. Hence, the notes are crucial to a full understanding of the truth.

We shall require the production of Mr. Lipinsky's diary notes for November 30, 1983, and for December 1 and 8, 1983. Mr. Lipinsky's January 9, 1984 memorandum, also sought to be withheld, clearly is not covered by attorney-client privilege. First, the relationship was asserted to exist only up to January 4. Second, we have found that the relationship never existed. This document also clearly is not covered as the work product of lawyers. It appears to be solely his product and there is no evidence that it contains lawyers' opinions or was produced in anticipation of litigation.

III. WORK PRODUCT IMMUNITY

As mentioned earlier, the Board received two letters from Applicants' counsel dated October 18, 1984, identifying fifteen documents for which work product immunity is claimed. Applicants contend that these items detailed are privileged, and thus not discoverable by Intervenor CASE because they "were prepared by Applicants' representatives in anticipation of litigation" or by Applicants' Counsel. (Watkins' Letters to the Board, dated October 18, 1984).

Applicants argue that the documents for which the work product immunity is claimed are exempted under NRC regulation 10 C.F.R. § 2.740(b)(2). This regulation encompasses the attorney work product doctrine set out in *Hickman v. Taylor*, 329 U.S. 495, 675 S. Ct. 385, 91 L. Ed. 451 (1947), and more recently codified in Rule 26(b)(3) of the Federal Rules of Civil Procedure. Section 2.740(b)(2) states:

(2) *Trial preparation materials.* A party may obtain discovery of documents and tangible things otherwise discoverable under paragraph (b)(1) of this section and prepared in anticipation of or for the hearing by or for another party's representative (including his attorney, consultant, surety, indemnitor, insurer, or agent) only upon a showing that the party seeking discovery has substantial need of the materials in the preparation of this case and that he is unable without undue hardship to obtain the substantial equivalent of the materials by other means. In ordering discovery of such materials when the required showing has been made, the presiding officer shall protect against disclosure of the mental impressions, conclusions, opinions, or legal theories of an attorney or other representative of a party concerning the proceeding.

Attorney work product is ordinarily given substantial deference in shielding from discovery an attorney's inner thought processes to enable the attorney to best prepare a client's case. It provides a "zone of privacy" within which attorneys may weigh the merits of their case and determine a litigation plan from which to proceed. (*Coastal States Gas Corp. v. Department of Energy*, 617 F.2d 854, 864 (D.C. Cir. 1980)). But the work product doctrine is not unlimited in scope. It provides immunity for material gathered or prepared by an attorney or other representative of a party only if the material is for the purpose of litigation, either presently on-going or reasonably anticipated at a future time. *Hickman v. Taylor*, *supra*; *Osterneck v. E.T. Barwick Industries*, 82 F.R.D. 81, 87 (N.D. Ga. 1979); 8 Wright & Miller, Federal Practice & Procedure § 2024 (1970).

The work product doctrine, while not easily overridden, is not intended to provide an absolute immunity from discovery. *United States v. Lipsky*, 492 F. Supp. 35, 44-45 (1979). See also *Nixon v. Sirica*, 487 F.2d 700, 714-17 (1973) (even the President's privilege is not absolute). It is

a qualified immunity requiring a balancing of the substantial need shown by the party seeking discovery for the materials sought and his inability to obtain the materials or their substantial equivalent by other means without undue hardship, with the policy considerations shielding an adverse party's counsel in the course of preparation of the case for litigation. *Hickman, supra*, 329 U.S. at 511-12, 675 S. Ct. at 393-94; Fed. R. Civ. P. 26(b)(3). If the documents sought are categorized by the Board as attorney work product, the Board must then proceed to determine "whether the party seeking discovery has demonstrated need and hardship as mandated by *Hickman* and the *Federal Rules*." *Lipshy, supra*, 492 F. Supp. at 46.

Although the Board is aware of the distinction drawn by some courts between ordinary work product and opinion work product in applying the above two-pronged test (see *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-82-82, 16 NRC 1144, 1162 (1982)), the distinction is not mandated by either Fed. R. Civ. P. 26(b)(3) or 10 C.F.R. § 2.740(b)(2). It is our view that such a distinction does not serve to further the analysis of the work product immunity as it applies to the discovery motion pending before us. Further, there is case law which supports the proposition that even opinion work product, while ordinarily afforded a high degree of immunity, is subject to discovery when the need for that information is at issue and compelling. *Boring v. Keller*, 97 F.R.D. 404 (1983).

The party resisting disclosure must bear the burden of proving that the privilege is properly applied. The party seeking disclosure of documents claimed to be privileged as attorney work product has the burden of establishing need and hardship. See 35 Ad. L. Rep. 3d 412, 526 (Supp. 1979). As noted herein, the substantive issue over which this discovery dispute arose concerned whether a witness was coerced or pressured into changing his testimony by Applicants or their counsel. To understand the significance of this witness' testimony, the Board recounts the relevant facts as shown in the record since August 1983.

The witness whose testimony is now in question is Joseph J. Lipinsky. Mr. Lipinsky is a quality assurance expert for O.B. Cannon Inc., a paint coatings firm that was retained by Applicants in 1983 to provide an analysis and evaluation of the paint coating program at Comanche Peak. In the course of his work in evaluating the quality assurance aspects of the coatings program, Lipinsky produced a "trip report" containing essentially unfavorable evaluations and judgments about the coatings program. This trip report was not intended to be disseminated outside Mr. Lipinsky's organization (O.B. Cannon, Inc.). However, through a series of unexplained events, the trip report surfaced among Comanche Peak

personnel and its contents became known to Applicants' management, causing them serious concern.

After the trip report (or "Lipinsky Memorandum") was brought to Applicants' attention, a series of meetings took place between O.B. Cannon personnel including Messrs. Lipinsky and Norris, and Applicants and their counsel. One purpose of these meetings may have been to gain an understanding of the reasons for Mr. Lipinsky's negative appraisal of Applicants' paint coatings program. It also appears, however, that Applicants understood the potentially damaging ramifications of the Lipinsky Memorandum to its position in the NRC licensing proceeding and met with O.B. Cannon representatives to control the possible damage done by the report. The facts in this case are also unusual in that, when Mr. Lipinsky had written a report describing Comanche Peak as "worse than Zimmer" and appeared to be a potential adverse witness, the Applicants hired O.B. Cannon and Mr. Lipinsky to provide services to it.

We find these facts to be troublesome in light of the work product privilege now claimed for Mr. Lipinsky and other O.B. Cannon witnesses. It does not seem logical that Mr. Lipinsky would be hired as an expert retained for litigation purposes, when O.B. Cannon's original contract provided that their services would be as consultants for the sole purpose of evaluating the paint program. Once Mr. Lipinsky's memo became known to Applicants and Intervenor, Mr. Lipinsky's testimony and his relevant documents could not be shielded from discovery by modifying Lipinsky's employment for the purpose of engaging him as an agent or representative within the meaning of 10 C.F.R. § 2.740(b)(2) or Fed. R. Civ. P. 26(B)(3).

At issue here is the modification of Mr. Lipinsky's views concerning the trip report. Intervenor claims there is no other way to determine whether Mr. Lipinsky was coerced or pressured into later claiming that the concerns he expressed were unfounded other than to see the documents leading to his denial of his own professional evaluation. (CASE Brief in Opposition to Applicant Request for Non-Disclosure of Relevant Lipinsky Documents, October 26, 1984.) That, Intervenor asserts, is the showing of substantial need to obtain the documents Applicants designate as privileged. We regard the threshold requirement of a "substantial need" showing as one to be rigorously applied by the judicial body. *Diamond v. Stratton*, 95 F.R.D. 503 (1982); *In re Doe*, 662 F.2d 1073. But even if the Board followed the extreme reasoning contained in the 1977 case, *In re Murphy*, 560 F.2d 326, 336 (1977), where the Court said "opinion work product enjoys a nearly absolute immunity and can be discovered only in very rare and extraordinary circumstances," we

find the facts surrounding the Lipinsky Memorandum to be extraordinary enough to meet the test *Murphy* sets out.

When substantial need for the contested documents is demonstrated, the immunity ordinarily accorded under the work product doctrine is overcome. Moreover, we see no other practical means to obtain the same facts about how Mr. Lipinsky's testimony evolved into his September 28, 1984 affidavit other than to view the documents related to the incident. It has always been stressed to the parties that it is the Board's strong preference to review documents as the best evidence of what occurred — documents are unmarred by risks inherent in live testimony such as lapses in memory or witness editorializing. Therefore, we do not feel that the same information or its substantial equivalent can be obtained by CASE by other means.

In balancing the relevant factors to determine whether the work product doctrine should shield the documents enumerated in Applicants' letters of October 18, we find that the weight of and unusual nature of the facts in this case tip the scale to the side of disclosure. However, we have not decided to order wholesale disclosure where it would clearly be inappropriate to do so. We exempt documents numbered 12, 13, and 14 as legitimately privileged under the work product doctrine. These documents were generated by Mr. Watkins, an attorney for Applicants, apparently for use internally by the law firm. It does not appear that distribution outside the law firm was contemplated.

ORDER

For all the foregoing reasons and based on consideration of the entire record in this matter, it is, this 16th day of November 1984,

ORDERED

That documents 12, 13 and 14, listed in Texas Utility Electric Company's letter to the Board of October 18, 1984, are privileged and need not be disclosed. In all other respects, privilege asserted by O.B. Cannon and by Applicants with respect to any O.B. Cannon or Lipinsky documents, is *denied*. Those documents must be delivered to the parties and the

Board by 12 noon tomorrow, November 17, 1984, at the locations specified in the course of this morning's telephone conference.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Peter B. Bloch, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

B. Paul Cotter, Jr., Chairman
Dr. Richard F. Cole
Gustave A. Linenberger

In the Matter of

Docket Nos. 50-458-OL
50-459-OL
(ASLBP No. 82-468-01-OL)

GULF STATES UTILITIES
COMPANY, *et al.*
(River Bend Station, Units 1
and 2)

November 20, 1984

In this Memorandum and Order, the Licensing Board grants Intervenor's motion to withdraw its remaining contentions; grants Applicants' motion to withdraw their application as to Unit 2; and dismisses the proceeding.

MEMORANDUM AND ORDER
(Terminating Proceeding)

I. INTRODUCTION

On October 9, 1984, a prehearing conference was convened in Baton Rouge, Louisiana, preparatory to commencing the first phase of hearings on the remaining safety contentions in this operating license proceeding.

As a result of motions made at that time, all remaining issues in the proceeding are resolved in this decision, and the proceeding is terminated as to both units.

II. PROCEDURAL HISTORY

The proceeding arises out of petitions to intervene in the application by Gulf States Utilities and Cajun Electric Power Cooperative (Applicants) for a license to possess, use, and operate two boiling water reactors known as River Bend Station Units 1 and 2. The reactors are located in West Feliciana Parish, 3 miles southeast of St. Francisville on the Mississippi River and approximately 24 miles north-northwest of Baton Rouge. Each reactor is designed to operate at a power level of 2894 megawatts thermal with an equivalent electrical output of approximately 936 megawatts. Construction was authorized on March 25, 1977. Approximately 87% of Unit 1 was completed by April 30, 1984, with fuel load now scheduled for April 1985. Report on Termination of Construction Activities, at 1, attached to Motion for Withdrawal of Application for Unit 2. On or about April 15, 1983, Applicants halted construction on Unit 2 which was less than 1% complete. LBP-83-52A, 18 NRC 265, 267 (1983).

Notice of the Applicants' request for a facility operating license was published on September 4, 1981, in the *Federal Register*. 46 Fed. Reg. 44,539 (1981). Petitions to intervene were filed by the Louisiana Consumers League, Inc. (LCL), Louisianans for Safe Energy, Inc. (LSE), and Gretchen Reinike Rothschild, individually. The two corporate petitioners and the single individual petitioner were admitted to the proceeding and consolidated as Joint Intervenors. The State of Louisiana also petitioned to participate both as a party to the proceeding, and as an interested State pursuant to 10 C.F.R. § 2.715 (1981). Louisiana was admitted as an interested State, but a ruling on its status as a party was deferred. LBP-83-52A, *supra*, 18 NRC at 267.

The parties filed some thirty-three contentions of which five were rejected at the outset, eight were withdrawn, several were consolidated, and two were admitted for hearing. A ruling on the balance, including fourteen contentions concerning emergency planning, was deferred pending negotiations among the parties. Prior to the October 9, 1984 prehearing conference, the parties filed written testimony as well as proposed findings of fact and conclusions of law which they exchanged and

commented on pursuant to this Board's direction. All parties were extremely cooperative in following this Board's instruction to seek a negotiated,¹ rather than a litigated, resolution of the deficiencies and concerns underlying the contentions filed.

III. RESOLUTION OF CONTENTIONS

A. Old River Control Structure

The Old River Control Structure is a barrier approximately 70 miles north of Baton Rouge, maintained by the U.S. Army Corps of Engineers to prevent the Mississippi River from diverting some portion of its flow into the Atchafalaya River. All Intervenor contended initially that Applicants had not adequately considered the effect of a failure of the structure on the safe operation of the plant. They contended that the structure's failure would divert the Mississippi River to the present course of the Atchafalaya River and thus: (1) the volume of the Mississippi River would be greatly diminished; and (2) there would be an increase in salt content in the waters due to the intrusion of more saline waters from the Gulf of Mexico. The State raised this matter because it had received virtually no treatment in the FSAR and the State wanted the Board to know of this potentially significant event.

At the prehearing conference, the Joint Intervenor and Louisiana filed a motion to withdraw their contention concerning the possible failure of the Old River Control Structure. The motion states:

After discussions among the parties, review of the proposed testimony of the parties, and in consideration of the agreement of Gulf States Utilities Company to monitor the River Bend Station intake water for conductivity on a monthly basis and to establish procedures to receive information on a quarterly basis from the Corps of Engineers on the location of the salt wedge in the Mississippi River, the concerns raised by this contention have been resolved.

No other party objected to the motion. Tr. 272-75.² We concur that the agreement described in the motion resolves the concerns raised in the motion, and it shall be granted.

¹ Since the Applicants' Final Safety Analysis Report was docketed in 1981, it has been amended, revised or supplemented at least 13 times.

² Transcript references are to the October 9, 1984 prehearing conference.

B. Asiatic Clams

Intervenors initially contended that:

Applicants have failed to provide adequate assurance that the River Bend Station components and systems relying on Mississippi River water for their operation will be adequately protected against infestation of the Asiatic Clam (*Corbicula leana*). See I&E Bulletin 81-03, "Flow Blockage of Cooling Water to Safety System Components by *Corbicula* sp. (Asiatic Clam) and *Mytilus* sp. (Mussel)."

Asiatic clams are small freshwater shellfish that survive in low-salinity water and multiply at enormous rates. First identified in the northwest corner of the United States in the late 19th Century, the creature now inhabits thirty-five of the contiguous United States. The Asiatic clam was first noticed in Louisiana in the late 1960s. Applicants' Proposed Findings of Fact 1-4. In 1980, Arkansas Nuclear One was shut down due to extensive plugging of containment cooling units caused by the entry of Asiatic clams through the service water supply. Consequently, IE Bulletin No. 81-03 required utilities to determine whether the shellfish are present, identify what components they might threaten, and describe the prophylactic actions that would be taken. Thus, Asiatic clams present a generic safety issue. Staff Proposed Findings 4 and 5.

Following discussion among the parties and review of proposed testimony, Joint Intervenors filed a motion to withdraw their contention related to the Asiatic clam based on an agreement as to certain actions Gulf States Utilities would take. Tr. 288-93. The agreement prescribes a periodic exchange of information and reports satisfactory to the parties. *Id.* The Board finds that the agreement adequately resolves the concern raised and will grant the motion.

C. Emergency Planning Contentions

On September 28, 1984, Joint Intervenors served a Motion to Withdraw Emergency Planning Contentions. The motion recited, *inter alia*, that following discussions with Louisiana emergency planning officials, the contentions were resolved by

the enactment of legislation (State of Louisiana Acts 1984, No. 825), and by revisions which are to be made to the Louisiana Peacetime Radiological Response Plan ("Plan"). Plan revisions, which have been agreed to by the Louisiana Nuclear Energy Division, Louisiana Department of Environmental Quality, which is responsible for fixed nuclear facility emergency planning within the State of Louisiana, will be incorporated into the plan at an appropriate future time.

Motion to Withdraw at 1-2. Attached to the motion is a statement of the response to seven of the contentions and the action taken. These matters range from updating the response plan in light of the reorganization of State government agencies, to provision for an injunction to enforce an evacuation order, to provision for additional transportation. The motion recites that no other parties object to it. Motion to Withdraw at 2; Tr. 271-72, 275-87. This motion, too, shall be granted.

IV. WITHDRAWAL OF APPLICATION TO CONSTRUCT UNIT 2

On July 2, 1984, Applicants filed a Motion for Withdrawal of Application for Unit 2. The motion states that Gulf States, for itself and as agent for Cajun Electric, requests the issuance of an order authorizing the withdrawal without prejudice of the application for an operating license. The motion was based on notice to this Licensing Board on January 6, 1984 that the Board of Directors of Gulf States Utilities had voted not to build Unit 2 and a report submitted with the motion on termination of construction activities for the unit. The report describes Gulf States'

commitment to return disturbed site areas to an acceptable state under a program to be approved and supervised by the NRC Staff.

Motion at 2. The motion cited *Public Service Co. of Oklahoma* (Black Fox Station, Units 1 and 2), LBP-83-10, 17 NRC 410 (1983) as precedent for the relief requested.

The report describes a variety of site restoration activities to be completed in the first year, most having to do with restoration of areas excavated, for example the Unit 2 reactor and related buildings, as well as the disposition of related structures and equipment. Unit 2 was located on the same site as Unit 1.

The only response to Applicants' motion to withdraw came from the Staff who did not object to the motion. After describing the limited amount of work that had been performed at the site pursuant to a September 1975 Limited Work Authorization and the 1977 Construction Permit, Staff asserted that Applicants' commitment to repairs, monitored by the Staff, assured adequate site restoration. Staff's Response to Motion for Withdrawal of Application for Unit 2. We agree. The Board has personally inspected the site and finds that Applicants' commitment to perform restoration work, which will be monitored by the Staff, is adequate. Accordingly, the motion will be granted. *Black Fox, supra.*

V. CONCLUSION

For all the foregoing reasons and upon consideration of the entire record in this matter, the foregoing motions are granted and this proceeding is terminated as to both Unit 1 and Unit 2, subject to NRC Staff monitoring and approving implementation of the site restoration work for Unit 2 described in Applicants' Report on Termination of Construction Activities dated June 1984.

Order

Upon consideration of the findings and conclusions in the foregoing Memorandum and the entire record in this matter, and pursuant to the authority contained in 10 C.F.R. Part 2, it is, this 20th day of November 1984,

ORDERED

1. That Applicants' request to withdraw without prejudice the application to operate River Bend Station Unit 2 is granted, and the proceeding is terminated as to Unit 2, subject to NRC Staff approval of the implementation of site restoration work described in Applicants' June 1984 Report on Termination of Construction;

2. That the Director of Nuclear Reactor Regulation shall cause to be published in the *Federal Register* in accordance with 10 C.F.R. § 2.107(c) a notice of the withdrawal of the application for a construction permit for River Bend, Unit 2;

3. That Joint Intervenors' motions to withdraw their contentions concerning the Old River Control Structure, infestation by Asiatic clams, and emergency planning are granted, and this proceeding is terminated as to Unit 1.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

B. Paul Cotter, Jr., Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
November 20, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James L. Kelley, Chairman
Dr. Richard F. Foster
Dr. Paul W. Purdom

In the Matter of

Docket Nos. 50-413

50-414

(ASLBP No. 81-463-06-OL)

DUKE POWER COMPANY, *et al.*
(Catawba Nuclear Station,
Units 1 and 2)

November 27, 1984

The Licensing Board issues a Partial Initial Decision resolving "foreman override" concerns in the Applicants' favor. The phrase "foreman override" denotes a situation where, for example, a foreman directs a welder to weld in violation of procedures in order to speed construction. See LBP-84-24, 19 NRC 1418, 1562-66 (1984). Following an evidentiary hearing, the Licensing Board found that instances of foreman override at Catawba had been isolated, and that in any event they did not represent a significant breakdown in quality assurance. In light of these findings and earlier findings favorable to the Applicants on various safety and emergency planning contentions, the Board authorizes the Director of Nuclear Reactor Regulation to issue full-power operating licenses for the Catawba Nuclear Station.

APPEARANCES

J. Michael McGarry, III, Anne W. Cottingham, and Mark S. Calvert, Washington, D.C., and **Albert V. Carr, Jr.**, Charlotte, North Carolina, for the Applicants, Duke Power Company, *et al.*

Robert Guild, Columbia, South Carolina, for the Intervenor, Palmetto Alliance.

Jesse L. Riley, Charlotte, North Carolina, for the Carolina Environmental Study Group.

George E. Johnson and **Bradley Jones** for the Nuclear Regulatory Commission Staff.

Richard P. Wilson for the State of South Carolina.

PARTIAL INITIAL DECISION RESOLVING FOREMAN OVERRIDE CONCERNS AND AUTHORIZING ISSUANCE OF OPERATING LICENSES

I. INTRODUCTION

In this Board's Partial Initial Decision of June 22, 1984 (LBP-84-24, 19 NRC 1418), we retained jurisdiction over one relatively narrow aspect of Palmetto Alliance's broad quality assurance contention alleging systematic deficiencies and pressure to approve faulty workmanship at Catawba. The aspect not then resolved has come to be known as "foreman override" and arose from the following circumstances. During the initial hearings, a volunteer Board witness, Howard S. Nunn, Jr., had alleged instances where a foreman had instructed welders to weld in violation of procedures. The Board resolved Mr. Nunn's specific concerns in the Applicants' favor. PID, 19 NRC at 1562-65. However, Mr. Nunn's concerns had also triggered an NRC Staff investigation which had uncovered further allegations of foreman override from a confidential source, designated as "Welder B" (Staff Ex. 27, at 27-28). Following further investigation of Welder B's allegations, the Staff requested that the Applicants initiate an extensive inquiry into these foreman override concerns. See Staff Ex. 31, P.A. Ex. 146. The Board subsequently determined that it could not resolve those concerns on the then-existing record.

Accordingly, we left the record open to receive the Applicants' and the NRC Staff's followup reports, and to consider further action at that point. PID, 19 NRC at 1565-66. We conditioned our order authorizing issuance of a low-power license upon:

Demonstration to this Board of a reasonable assurance that the "Welder B" and related concerns described in §§ III.B.48-III.B.51 do not represent a significant breakdown in quality assurance at Catawba.

Id. at 1585.

Upon receipt of the anticipated reports,¹ the Board called for comments from the parties and determined that further discovery and hearings on the foreman override concerns on an expedited basis were warranted. Tr. 12,843-44. Consistent with the Commission's *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452 (1981), this Board has consistently sought to avoid or reduce delays in this licensing proceeding "whenever measures are available that do not compromise the Commission's fundamental commitment to a fair and thorough hearing process." *Id.* at 453. In that regard, Palmetto Alliance's request for discovery and a hearing on foreman override concerns was received on September 17, 1984, and granted, over objection, on September 21, 1984. At that time, the Applicants were predicting that Catawba's Unit 1 would be ready to go critical on October 17, 1984. Affidavit of Warren Owen dated September 12, 1984, and appended to Applicants' pleading of that date. Under the circumstances, and considering particularly the narrow scope of the foreman override concept, the Board put forward a tentative schedule for discovery, hearing, and findings, leading to a Board decision in late October. Tr. 12,845-48. After the parties had had an opportunity to consider the tentative schedule, we called for their comments. Tr. 12,867. Most of the comments concerned whether confidential sources should be disclosed. Tr. 12,867-12,905. Apart from a passing reference by Palmetto in that context to a "very speedy truncated process" (Tr. 12,889), no specific objections were made by any party and no alternatives were proffered to the Board's schedule, which was followed. *See also* Tr. 14,369-70.

The hearing took place in Charlotte, N.C., on October 9-12, 1984. The Board heard (a) a fifteen-member panel of Applicant witnesses and three Applicant rebuttal witnesses, (b) a four-member panel of Staff

¹ Applicants' "Investigation of Issues Raised by the NRC Staff in Inspection Reports 50-413/84-31 and 50-414/84-17," dated August 3, 1984 (App. Ex. 116), and the Staff's Inspection Report Nos. 50-413/84-88, 50-414/84-39, and an accompanying notice of violation dated August 31, 1984 (Staff Ex. 33).

witnesses, and (c) one expert and six employee (present and former) witnesses called by Palmetto Alliance. In order to provide maximum opportunities for questioning, all four hearing days ran into the evening hours, producing a transcript equivalent to about six hearing days.² The bulk of the time was allocated to Palmetto Alliance for cross-examination of the Applicant and Staff panels and for eliciting direct testimony from the employee witnesses. The Board believes that Palmetto had a fair opportunity to "make its case" on the foreman override concerns. At the conclusion of the hearing, the parties stipulated to a date for filing proposed findings.³ Findings of the Applicants, Staff and Palmetto Alliance were subsequently received and considered.⁴

II. FOREMAN OVERRIDE – SCOPE OF THE CONCEPT AND ULTIMATE ISSUE PRESENTED

"Foreman override" was the term of art defining the parameters of the hearing. In our June 22 Decision, we had described foreman override situations as those in which "foremen would order welders to do work in a manner contrary to prescribed procedures or to the welder's ideas of correct welding." PID, 19 NRC at 1562. The scope of foreman override was argued by the parties at the beginning of the October 1984 hearing (Tr. 13,051-71), with Palmetto Alliance urging an expansive view. Tr. 13,066. In order to provide further guidance for the hearing, the Board stated that:

We don't put this out as a definitive resolution that is designed to answer all questions, because what is or is not foreman override is partly dependent on the facts and circumstances [of] different cases, and it is not something we can judge down to a very fine point in advance . . . [T]he foreman override that we are dealing with basically is situations where an employee is directed, either explicitly or implicitly, to violate established procedures. Now this directive to violate procedures doesn't have to be in so [many] words; [it] can be implicit But we want to emphasize.

² An average 9-to-5 hearing day usually generates a transcript of about 250 pages. The foreman override hearing generated a transcript of 1483 pages.

³ At the close of the hearing, the Applicants announced a slip in their criticality schedule from October 17 to November 8, 1984. Proposed findings and an anticipated Board decision date were then set with reference to that date. Tr. 14,369-82. By letter dated November 1, 1984, the Applicants reported certain unanticipated problems in Unit 1 and slipped their criticality schedule further, to early December 1984. With the benefit of hindsight, the foreman override hearing could have been held somewhat later than it was. Licensing Boards must, of course, set hearing schedules on the basis of presently available information.

⁴ Carolina Environmental Study Group (CESG) is listed as co-author of Palmetto's findings. However, CESG was not a co-sponsor of Contention 6 (of which foreman override is a part) and its participation in the foreman override hearing was intermittent. We treat Palmetto as the lead intervenor party in this decision.

on the other hand, that the mere fact that a foreman might have applied pressure for production and the employee then decides to bend to that pressure, and one way to bend to it is to violate procedures, that is not what we consider foreman override.

Now, that isn't to say that there wouldn't be situations that are outside our definition that reflect undesirable work practices. We are here to hold a hearing on a rather narrow concept

Tr. 13,159-60.

In addition to this guidance, we took the position — to which we had adhered throughout our consideration of Contention 6 (e.g., PID, 19 NRC at 1548) — that we would not consider alleged instances of foreman override involving work on nonsafety systems. Tr. 13,070, 14,081. Such allegations — for example, involving work in the turbine or administration buildings, or on the grounds — are remote, if not irrelevant, to nuclear safety issues. See *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-788, 20 NRC 1102, 1142 (1984).

Apart from these scope considerations, the focus of the hearing was affected by the ultimate factual issue — whether foreman override had been sufficiently widespread at Catawba that it represented a significant breakdown in the quality assurance system, such that we could not make the requisite safety findings. See *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343, 346 (1983). Thus, a few instances of foreman override, or possibly even numerous isolated instances, would be expected at any nuclear construction site over time, but would not necessarily indicate a serious breakdown in quality assurance.⁵

III. STAFF AND APPLICANT INVESTIGATIONS OF FOREMAN OVERRIDE

A. NRC Investigations

The Staff has described its investigation of foreman override in its Proposed Finding (PF) 10, as follows:

As documented in the record of the Fall/Winter 1983 hearings, Region II conducted 25 interviews based on the Nunn⁶ allegations and these interviews pointed to Welder B's foreman. See Staff Ex. 27; Tr. 13,911, Blake. Between early January and

⁵ Similarly, proof indicating multiple instances for foreman override by a single foreman (such as the proof about Foreman Arlon Moore in this case) would not indicate a widespread breakdown in QA and, indeed, could quickly become cumulative in a hearing.

⁶ As noted above at p. 1485, Howard S. Nunn, a former Duke welder, had raised the foreman override issue in the first instance.

the beginning of March 1984, Region II interviewed a total of 53 people, 41 individuals whose interview summaries were provided to Palmetto Alliance on discovery, pursuant to protective order, and an additional 12 individuals, four being confidential sources, who provided information which tended to corroborate the original allegations of Welder B. See P.A. Ex. 146, Tr. 13,911, 13,88J, Blake, Uryc; Tr. 13,786, Uryc. These last interviews were summarized in a special inspection report (Staff Ex. 31), and served as the basis for the March 13, 1984 meeting between Duke management and Region II officials and the initiation of the Duke inquiry. *Id.* Based on the twelve interviews, summarized in the special inspection report, Region II found evidence of problems involving: (1) violation of interpass temperatures, (2) removal of arc strikes without paperwork, (3) welding bead sequence [subsequently determined to be within procedure], (4) posting of "look outs" for inspectors while welding procedures were violated, (5) perception of foreman pressure for quantity, and (6) welding without proper documentation. Staff Ex. 31, at 2. The NRC's investigation did not turn up any evidence of such problems other than on Arlon Moore's second shift welding crew. *Id.* at 3-4; Tr. 13,181, Dick. However, Applicants were advised to begin an immediate review of the issues to independently determine what problems were raised, to investigate the possibility that the activities reported extended beyond the particular second shift welding crew, and to identify the corrective actions required for adequate resolution. Staff Ex. 31, at 2.⁷ Thus, before the Duke inquiry had begun, the Region II investigation had gathered evidence from 78 interviews, and found evidence of foreman override in only one crew.

Palmetto gives scant attention to the Staff investigation in their proposed findings although it asks why the information discovered was not found earlier in routine inspections (Tr. 14,392-93). The Staff attributed this to the fact that its inspections are conducted on a sampling basis. (Blake, Tr. 13,772). The Board also views the fact that these incidents were not found in sampling inspections as one indication of the low frequency of occurrence, as discussed later in this decision. We reject as unwarranted Palmetto's suggestion (Tr. 14,434), that Mr. Nunn's efforts to point the way to further evidence of foreman override have been rebuffed by the Staff.⁸

⁷ "The Board notes that the Staff's interviews with Individual B, Individual B-1, Individual B-2, and Individual B-3, contain allegations concerning actions by the second shift foreman, Mr. Moore, which could not be directly explored through cross-examination, inasmuch as their identities were not revealed by the Staff to the other parties. See Tr. 13,014-15. While the interview summaries in the Staff report (Staff Ex. 31) contain allegations of specific incidents in which Mr. Moore is said to have pressured welders on his crew to violate interpass temperatures (B, B-1, B-2), weld without possession of proper paperwork (B-1 [this incident was caught at the time for a missed hold point and written up as an NCI], B-2), and remove arc strikes without paperwork (B-2), it may be noted that similar incidents were explored on the hearing record, and the Board considers these matters to have received adequate consideration."

⁸ See *In Camera* Witness Statement (Bruno Uryc) dated October 11, 1984, taken in accordance with the Commission's "Statement of Policy, Investigations, Inspections, and Adjudicatory Proceedings," dated Sept. 7, 1984, at 6.

B. Duke Investigations

As requested by the NRC Staff, Applicants began their own investigation of foreman override, which was monitored by the NRC Staff. App. Ex. 113, at 7; Dick, Tr. 13,178. R.L. Dick, Vice President, Construction, was made responsible for investigating production/quality concerns. Mr. Hollins, who was not stationed at Catawba, was designated by Mr. Dick to manage the investigation. A separate board independent of the Construction Department was established by Mr. Owen, Executive Vice President of the Company, to review adequacy of findings and corrective action.

The investigation was to include the following:

- Interviews with craft and management personnel to corroborate and develop information received from the NRC relative to production/quality concerns.
- On a sampling basis, interviews of selected craft personnel to determine if production/quality concerns are broader than a specific crew/craft.
- An evaluation of findings and determination of corrective action programs that address any technical and/or personnel issues, including programs designed to promote open communications on quality concerns.

The investigative methodology and results are set forth in App. Ex. 116.

Duke personnel interviewed 217 people, some several times. These included:

- a. 65 of the 110 welders who had worked for a foreman mentioned frequently in allegations, Arlon Moore.
- b. 69 randomly selected other welders from a population of about 400.*
- c. 48 powerhouse mechanics from about 800.*
- d. 6 steelworkers from about 135.*
- e. 8 electricians from about 300.*

In addition, thirteen line foremen, two general foremen, four QC inspectors and two others who were thought to have relevant information were interviewed. (Hollins, prepared testimony, App. Ex. 115, at 2-3.) The interviews were structured in that guides and essential questions were supplied to the interviewers. (Dick, prepared testimony, App. Ex. 113, Attach. C, at 3.)

*These populations were workers employed at the time that foreman override incidents had allegedly occurred and assigned to work in critical areas.

Palmetto attacked the Duke methodology through the testimony of Raymond Michalowski, Ph.D., a Professor of Sociology at the University of North Carolina-Charlotte. (Direct testimony, ff. Tr. 13,927.) Dr. Michalowski's prepared two-page testimony summary (P.A. Ex. 147) was expanded at length in direct examination. (Tr. 13,927-57.) His testimony is fairly summarized by the Staff PFFs 13 and 14, as follows: Dr. Michalowski asserted that

the questions the study set out to answer were not clearly stated, the behaviors associated with foreman override were not initially specified (for example, the perception of pressure, or actual pressure), no criteria were specified in advance for judging significance (e.g., what would be considered "pervasive"), and the sampling was not done to assure appropriate representativeness of the total population being studied. *Id.* at 13,936-43. He viewed the study's reliability suspect due to the vagueness in the questions asked, the dependency of one question's answer on previous questions, the use of subjective terminology, and the use of Duke interviewers when seeking "high-risk" information (i.e., evidence of wrong-doing from one's employee.) *Id.* at 13,945-51.

While he initially was of the opinion that the study should not be relied on for any purpose, *id.* at 13,957, he narrowed his criticisms considerably on cross-examination, principally to the inappropriateness of making inferences about foreman override outside the welding craft. *Id.* at 13,976. First, he conceded the study may have been valid insofar as it undertook to find the extent of perception of violations. *Id.* at 13,965-67. He also granted that an investigative technique is a valid approach for finding actual violators. *Id.* at 13,969. He also agreed that if the study were attempting to generalize about the pressure an entire population is experiencing, and the sample was exclusively of sub-populations subject to high pressure, the evidence would likely overstate the incidence of high pressure being experienced by the entire population. *Id.* at 13,973. Similarly, if increased violations were associated with high pressure, generalizations about the population would tend to overstate the number of violations. *Id.* at 13,974.

In rebuttal, the Applicants presented the testimony of John E. Hunter, Ph.D., Professor of Psychology and Mathematics, Michigan State University (App. Ex. 120, Direct testimony, ff. Tr. 14,278). The Staff has fairly summarized Dr. Hunter's testimony in Staff PFF 15 as follows:

Dr. John E. Hunter . . . disagreed with Dr. Michalowski's principal conclusion that the data did not justify drawing plant-wide conclusions. By taking the number of instances of foreman override as 10, and comparing that to the estimated number of transactions in which foreman override could occur, Dr. Hunter concluded that it was possible to validly conclude foreman override was a rare event. Tr. 14,342-47, Hunter. He said this would be true even if the sample were limited to the 33 non-welding craftsmen sampled by Duke. *Id.* at 14,347. He also noted that pooling the non-random and random samples as Duke did would be conservative, that is, it would tend to result in overstating the expected occurrences of foreman override. *id.* at 14,356-57, since the frequency of foreman override in the non-random sample would have been greater. App. Ex. 120, at 8. He also concluded that the questions

Duke asked elicited the observations needed to determine whether foreman override allegations were stated. Tr. 14,311-12. Hunter, the questions were appropriately phrased so as to provide the desired information, *id.* at 14,327-32, App. Ex. 120, at 3-4, the relative power-differential between the interviewers and the craftsmen, and the eliciting of "high-risk" information, did not affect the reliability of the information received, *id.*, and that the data generated provided adequate justification for the generalization made — i.e., that foreman override is a rare event *Id.* at 14,339-42.

The Board finds that the "investigative" approach taken by Duke was not only appropriate, but necessary. We concur with Staff's PFF 17, in that Duke was obligated to pursue each lead. Thus, this was not a pure research project and the resulting sample of interviews would tend to be biased, but in a conservative direction. That is, the bias, if any, would be more likely to reveal a greater number of violations than would a pure random sample. As a cautionary measure, it was also incumbent on Duke to do some sampling of workers in other critical safety-related areas.

Paimetto was also critical of the size of the sample. Tr. 14,419-22. Dr. Hunter conceded that this criticism was partially valid (Tr. 14,356). Sample size goes to the degree of confidence one might have in the result, but does not necessarily negate the results. In this case a larger sample size would have been desirable, but considering all of the circumstances and Dr. Hunter's testimony, the Board finds the sample acceptable.

These academic criticisms of the Duke sample might have been more telling if a rigorous scientific study, with calculated standard error deviations and levels of confidence, had been necessary for Duke's purpose. But such a discriminating tool was not required. Unlike, for example, a finely tuned survey designed to determine divisions of public opinion within, say, a percentage point of accuracy, Duke was conducting a relatively gross analysis. To put it another way, if one is looking for the footprints of foreman override in a nuclear plant work force, one does not need a magnifying glass, only an open eye.

The Board's inspection of the interviewing guides and review of the testimony also lead us to conclude that Duke's methodology would tend to produce valid information. The Board is mindful of Dr. Michalowski's concern that fear of retaliation had the potential for blocking free expression by employee interviewees. In this regard, the Board noted the extreme anxiety and nervousness of the witness identified as Individual

31.⁹ I.C. Tr. 2099. However, workers' anxieties seemed to us to flow more from concerns about their immediate supervisors or fellow workers than the Duke management people (see, e.g., Affidavit 8, App. Ex. 118). For example, several witnesses had no objection to testifying in public session, so long as the television cameras did not photograph their faces. E.g., Tr. 14,070, 14,095. While the mores of the workers caused them to be reluctant to volunteer information, they responded candidly when asked direct questions, as was done in the Duke investigation (for example, see Carpenter, Tr. 14,233 and Individual 196, I.C. Tr. 2018, 2084 and 2086).

In sum, the Board's evaluation of the methodology of the Duke investigation considered the testimony and cross-examination of the Duke panel, the expert witnesses, the testimony of workers called by Intervenor, the reports, affidavits and exhibits. We also considered the independent investigation of the Staff and the consistency between Duke and Staff results, as well as the monitoring of the Duke investigation by the Staff (Uryc and Blake, Tr. 13,848, 13,865, 13,883). From all of this we find that the Duke investigative methodology was valid and an appropriate base for making generalizations and conclusions.

Palmetto also criticized Duke's investigation for incompleteness. We essentially agree with the Applicants on these points. The Board (with one wording change) adopts Applicants' Proposed Findings at "C," pp. 11 and 12, which read:

Intervenors alleged that the affidavits do not reflect all the matters raised during the interviews (see, e.g., Tr. 13,145). This allegation was not substantiated by the testimony. Of the five Catawba employees called by Intervenor, four stated that the affidavits fully reflected their concerns (Tr. 14,142-43, McCall; Tr. 14,188-89, Braswell; Tr. 14,222-24, Carpenter; I.C. Tr. 2068-69, Ind. 196). Individual 31 did have two concerns which were not reflected on either of his affidavits, but this was only because he forgot to mention them in that he was a nervous individual and his mind would go blank at times (I.C. Tr. 2103, 2105, 2118-19, 2130-31, Ind. 31). He stated he was not intimidated by the interviewer, Mr. Bolin (*id.*). His claim that the interviewer told him "I don't want to hear about harassment" (I.C. Tr. 2105, Ind. 31) was denied; the interviewer testified that the affidavits of Individual 31 contained all the statements he made (Tr. 14,273-76, Bolin). This Board, having observed the demeanor of these witnesses appearing before it, credits Mr. Bolin's testimony. In any event, Individual 31 said he did not have anything to say about harass-

⁹ On October 2, 1984, the Board issued a Revised Protective Order to protect the names, addresses and telephone numbers of current and former Duke employees provided to Intervenor by either Applicants or the NRC in connection with the foreman override concerns. As a result, references herein to individuals whose identity is subject to nondisclosure under the protective order are made by reference to a number code supplied by Applicants. The Board determined that disclosure of NRC confidential sources, even under a protective order, was not required in order to probe the issues adequately. Tr. 13,014-15.

ment (I.C. Tr. 2105, Ind. 31), and he had never seen anything involving a foreman that he thought would adversely affect the safe operation of the plant (I.C. Tr. 2135-36, Ind. 31).

The Board concludes that these affidavits, which were relied upon by Applicants during their investigation, [adequately] reflect the concerns that the employees raised during their interviews. This conclusion is particularly reasonable in light of the fact that the employees themselves read and signed these affidavits and presumably would note inaccuracies (see App. Ex. 118).

In a similar vein, Palmetto criticized the Applicants for selective omissions. In that regard, the Board concludes in and adopts Staff's PFF 20:

Palmetto also attempted to show that the (Duke) report itself was incomplete, by toning down negative implications or leaving out significant details, particularly concerning the field testing of critical welds from Arlon Moore's crew (e.g., Tr. 13,436, 13,439-40, 13,510, 13,512, 13,514, 13,516, Guild), and concerning Duke's taking personnel action against a dozen supervisory personnel, Tr. 13,376, Guild, rather than the five individuals noted in the August 3, 1984 report. We agree that all the details of Duke's investigation are not contained in its report, which was intended to serve as a summary of a much larger amount of material. See P.A. Ex. 146 (9/4/84 Memo to File, B. Uryc, J. Blake). However, that is one of the principal reasons the Board ordered further discovery and hearings — to probe the bases for the Applicants' findings. We are satisfied that through this process the significant details, including those concerning weld testing and personnel actions, were not only made available to Palmetto, but the subject of extensive cross-examination.¹⁰ In the Board's view, the full scope of information uncovered and persons responsible, was available and the subject of the hearings.¹¹

IV. EMPLOYEE AFFIDAVITS AND WITNESS TESTIMONY

Affidavits from over 200 employees obtained as part of the Duke investigation were placed in the record as App. Ex. 118. The Board also heard testimony from six present and former employees called by Palmetto. The Board adopts much of the Staff's Proposed Findings as an accurate reflection of the substance of this testimony, as indicated in the following discussion.

¹⁰ The proposed employee action plan, which summarized proposed actions to be taken against about a dozen individuals, was fully probed. See P.A. Ex. 154; Tr. 13,372, *et seq.*; see also P.A. Exs. 152, 153, 155 (documenting certain personnel actions taken). Moreover, since the criteria for taking personnel action was "inappropriate supervisory action" (Tr. 13,220-21, Dick), and not foreman override, the disparity in reporting asserted by Palmetto is of little significance.

¹¹ However, as explained in Section V B, below, we find that Applicants could have been more forthright in presenting the results of the field testing of welds.

A. Instances of Foreman Override

The Applicants conducted followup interviews and technical reviews, as appropriate, of allegations contained in the affidavits. Based on that analysis, they concede ten specific instances of foreman override based on first-hand employee knowledge. (Hollins, Tr. 13,256 and 13,259; see also App. Ex. 116, at 14.) The Staff's Proposed Finding 21 identifies thirteen specific instances which appear to meet the definition of foreman override. The instances and foremen involved are:

- four interpass temperature violations (Arlon Moore, three; John Gladden, one).
- four attempts to mislead inspectors (Haltermann, Barker, Gladden, Chrisley).
- one lookout for QC inspector (Moore).
- three directions to work without process control paperwork (E. Cobb).
- one direction to work on a nonconformed item (B. Cobb).

B. Violations of Interpass Temperature

Allegations that the required interpass temperature limit of 350°F for welding on stainless steel (NRC Regulatory Guide 1.44; Duke Nuclear Guide 1.31, ¶ 4) was frequently exceeded was the most serious issue raised and received more attention than other issues at the hearing. The Staff's interviews with Welder B (Staff Ex. 31) and the followup investigations (Staff Ex. 33, at 2 and App. Ex. 116, at I-6; see also Llewellyn, Tr. 13,457-58) led Staff to conclude that "at least one welder violated interpass temperature on safety-related systems as a result of (production) pressure from [Foreman] Arlon Moore" (Staff PFF 23, at 12-13).

Individual 196 described in affidavits (App. Ex. 118) and testimony three incidents where he believed interpass temperature might have been violated. In one case, a welder had said he was welding too hot because "Arlon said I need to get them done tonight." (I.C. Tr. 2022, App. Ex. 118, Affidavit 196.) On another occasion, Arlon Moore replaced Individual 196 and another welder with two other welders in order to finish work by the end of the shift. Individual 196 believed that "for them to finish those welds so quickly, they had to work outside of procedure." I.C. Tr. 2074-76; App. Ex. 118, Affidavit 196. In a third incident, Individual 196 was concerned that W.M. Carpenter, a former Duke welder, had done work too quickly. I.C. Tr. 2034-35, 2073; App. Ex. 118, Affidavit 196. However, Individual 196 did not have personal knowledge whether procedures had been violated (I.C. Tr. 2034), and Carpenter subsequently testified that he had done the job rapidly by an

assembly-line approach that did not require excessive temperature (Tr. 14,213-14). Mr. Carpenter did relate another incident where foreman Moore had told him to make another pass when he could not "lay his hand on it" (Tr. 14,015).

Welder B informed NRC Inspector Uryc about 12 to 24 welds in the Unit 1 pipe chase that were overheated by Individual 70 and involved Foreman Arlon Moore. Another incident, involving John Gladden, was raised by Individuals 106 and 33. App. Ex. 116, Appendix A, at I-2, and App. Ex. 118. The Board concurs in the Staff's PFFs 23-26, which provide more technical details on this subject. We agree that these instances of interpass temperature violations are isolated, involving only two foremen who have since been removed from supervisory responsibilities.

C. Misleading Inspector/Defeating Inspection Process

The Board adopts Staff's PFFs 29-30, which describe an event involving C.W. Braswell, as follows:

As noted in the initial tally of allegations of foreman override found in Applicants' report, these were four alleged incidents in which a foreman gave a direction to a craftsman which served to mislead the inspector involved, or to defeat the proper functioning of the QA/QC system for maintaining quality construction. Each involved a different craft foreman. Two were the subject of cross examination.

C.W. Braswell, a powerhouse mechanic, related that a QC inspector had come to him asking him to identify some redheads (expansion bolts) which had been installed in the number one reactor loop a year before with a torque wrench which was the subject of a deficiency report (R-2A) for being out of calibration. App. Ex. 118 (Braswell); Tr. 14,175-77, Braswell. Braswell couldn't remember the exact location, but was able to point out the "loop" involved and the inspector was able to check the redheads on it. Tr. 14176, Braswell. Mr. Braswell said his foreman, Ed Halterman, told him just to point out some redheads; but he could not remember if he was told this before or after the loop was checked, and did not know whether Mr. Halterman was serious or kidding. *Id.*

Assuming that this event actually occurred, evidence of foreman direction to violate procedures is not clear. The QA program was not actually defeated. Under all the circumstances, we believe this is a trivial matter.

The Board adopts Staff's PFF 32, describing an event involving Individual 31, as follows:

Individual 31 related an incident in the Unit 1 pipe chase in which he had repaired the same weld four or five times because the radiograph kept showing a rejectable condition. The last time it came back, Individual 31 discovered that the x-ray department had been sending the wrong weld package. However, instead of telling Individual 31 to inform the Authorized Nuclear Inspector (ANI) that there had been a

mix-up, his foreman, H. Barker, told him to tell the ANI that he had found the defect and get the hold point signed off. Rather than do this, Individual 31 told the ANI of the mix-up, and both welds were red-tagged. App. Ex. 118, Ind. 31; I.C. Tr. 2107-10, Ind. 31. According to Individual 31, Mr. Barker had wanted to get the matter of the mix-up resolved without causing the radiographers involved any trouble (they both received disciplinary "A" violations as a result of this incident). I.C. Tr. 2110-13, Ind. 31.

This is an isolated incident in the record and represents no pattern of activity or general inclination to deviate from procedures.

Two other incidents involving Mr. Barker were related by Individual 31. We consider neither to involve foreman override. (See Staff's footnote 13 to PFF 33 for more detail.) One incident involved an order to remove a red tag after receipt of resolution papers, which is permitted. The other concerned a weld Barker approved that had looked acceptable to No. 131, but not to another welder. The weld had "shot" acceptably.

There were two other incidents described in affidavits (App. Ex. 118), but not subjected to cross-examination, which warrant discussion. Staff's PFFs 34 and 35 describe an incident found in the affidavits of two welders, Individuals 72 and 177, which involved

foreman Johnny Chrisley telling the two welders that one of them had done the welds (fastening angle iron clips to ceiling rails in the control room) and someone had to stencil them so they could be signed off. One (Individual 72) said he didn't do them and refused. The other (Individual 177) said he stenciled 35-40 welds which he had not done, but that those he didn't feel comfortable about, he rewelded or repaired. He said he did it (stenciling) because the foreman told him to. App. Ex. 116, App. A, Sec. VI; App. Ex. 118, Inds. 72, 177.

Applicants concede that, if true, this action violated a Duke, but not a code, procedural requirement. App. Ex. 116, App. A, Sec. VI. This is within our definition of foreman override. In addition, this incident was not detected by the QA program. However, as noted by Applicants, all appropriate inspections were made, all were acceptable, and all Duke welders are qualified to perform the welds in question. *Id.* The principal rationale for stenciling welds, as we recall from our earlier deliberations in the Fall of 1983, is to assure that if bad welds are made, the welder involved can be traced. If bad welds could not be traced to the appropriate welder, it would be difficult to either remove or retrain the problem welder

We also adopt Staff's PFF 36 concerning the affidavit of Individual 94,

in which he discovered that a hold point had been missed, which he verified with a QC inspector. However, his foreman, John Gladden, told him to get another inspector, and that the other inspector might miss the problem and sign off the weld. Individual 84 informed the first inspector, who apparently alerted the second inspector, who told Mr. Gladden he would not sign off the work. Individual 94 considered this direction to violate a procedure. App. Ex. 118, Ind. 94.

A deliberate effort by a foreman to deceive or withhold information from an inspector by his own action or through orders or other guidance to subordinates is a serious matter. If it is not a clear violation of present procedures, it should be treated as such. If a widespread practice, such a proclivity could, if not detected, impair the functioning of the QA program. In this case, however, the record reflects only these isolated incidents, not representative of a pattern of improper actions. In and of themselves, these incidents were of no safety consequence.

D. Direction to Work Without Process Control

The Board adopts Staff's PFFs 39-42 on this subject.

Applicants' August 3, 1984 report notes five incidents in which craftsmen (Individuals 77, 94, 46, 95 and 88) stated they were directed to work on hangers or to fit up pipe without having the necessary paperwork (process control) in their possession. App. Ex. 116, Appendix A, Sec. III. According to the report, four of the five involved one powerhouse mechanic foreman, Ed Cobb, and the other, John Gladden. None of these incidents was the subject of cross-examination, but are discussed in the related affidavits. See App. Ex. 118. Further, Individual 196 testified he was told by Individual 109 that Arlon Moore told Individual 109 to start welding without process control. The affidavit of Individual 88 (mentioned in Applicants' report) also related an incident in which a welding foreman, Dave Williams, instructed a welder to make a tack weld without paperwork. Individual 88 said that, of his own accord, he watched to see that no one was coming. App. Ex. 118, Ind. 88. Finally, Individual 88 mentioned an incident in which he and Individual 77 had been working on a hanger but Individual 77 left with the paperwork, and in his absence two other powerhouse mechanics finished the work. *Id.* As noted by Applicants, in the incidents involving Individuals 46 and 95, the paperwork was nearby, App. Ex. 116, 118 (affidavits), and this appeared to be the case in one of the incidents recounted by Individual 88. Individual 94 related that he refused to follow Mr. Gladden's instruction. *Id.* Individual 77 said, with respect to his own concern, that he talked Mr. Cobb into waiting for the paperwork.

Applicants acknowledge that craftsmen were required by quality assurance procedures to have possession of the process control information while performing work, so that it is available for reference as necessary. App. Ex. 116, Appendix A, at III-2. Thus, direction to work without such paperwork is improper, and appears to constitute foreman override. Second, there is no evidence that these incidents were detected by the QC inspectors, although some craftsmen simply refused to go along with the violation. Third, there does appear to be a limited pattern here, which involves one particular powerhouse mechanic foreman, Ed Cobb. Although three other foremen are mentioned, the incidents appear isolated. The evidence suggests that Mr. Cobb had a practice of keeping the work going, even if paperwork was not with the craftsman, as required. Although both Arlon Moore and John Gladden were the subject of other foreman override incidents, the two incidents related do not demonstrate a proclivity to direct work without process control. The name of Mr. Williams, also mentioned here, does not appear again, to the Board's knowledge.

If craftsmen were regularly forced to work without being allowed to refer to the appropriate controlling procedures, the opportunity for workmanship error could reasonably be said to increase, and part of the quality assurance program would not be working. Nevertheless, if errors were to occur, defective work would be subject to inspection, as noted by Applicants. App. Ex. 116, Appendix A, Sec. III. We are not, however, prepared to say that the evidence shows that work without process control was pervasive, based on these few incidents involving mainly just one foreman. Moreover, we are also mindful of our earlier findings that, in general, Applicants' system of process control in the welding area worked rather well.

The Board therefore finds that although one foreman appears to have had a proclivity to direct that work continue in technical violation of procedures, this practice was not, in fact, widespread, and, because of the inspection process, is unlikely to have led to the quality assurance program failing to detect faulty work. These incidents do not demonstrate a significant breakdown of the QA program.

E. Cold Springing

The Board adopts Staff's PFFs 47-52:

Although Applicants included "cold springing" in Appendix B of their report, indicating their view that foreman override was not present, Palmetto Alliance nevertheless attempted to show that foreman override occurred in this activity. Tr. 14,095, *et seq.* (See also P.A. PFF Tr. 14,413-17.) Cold springing, which involves the use of come-alongs and chain falls to force-fit mismatched pipe ends so they can be welded, Tr. 13,567-68, Mills, was a subject considered and resolved in the initial PID.

James Boyd McCall, a powerhouse mechanic, alleged that he, a welder, and several inspectors had allowed the force fitting of a pipe using one come-along and three chain falls without first using a dynamometer to determine the force needed and without proper documentation, as required by CP-483. Tr. 14,101, McCall; Tr. 13,561, 13,564, 13,579-80, Mills. The welding foreman, Jim Johnson, was told the pipe could not be hand-fit, but told them to go ahead and pull it over. Mr. McCall contacted Ronald Kirkland, a QC inspector, who went to his supervisor, Bill Deaton, returned, and told them to proceed to make the fit. Tr. 14,103-06, McCall.

The crew members, foreman and QC inspector in this case all believed the cold springing was acceptable, under QA Procedure M-4. Tr. 14,110, McCall; App. Ex. 116, Attach. B, at III-1. However, NCI 18304 was originated on April 5, 1984, to document the cold spring, *id.*, and it was determined that the force used violated CP-483. Tr. 13,574-75, Mills. It appears that the foreman and QC inspector had mistakenly relied on QAP M-4, which states that jacks, jigs and other fixtures can be used to align a fit, but had not considered CP-483, which specifically addresses cold springing. Tr. 14,099-100, 14,110, 14,114, 14,135, McCall; Tr. 13,574-75, 13,580-81, Mills.

Mr. McCall also related an incident which occurred soon after, involving use of a porta-power hydraulic jack, but no foreman was involved, and, in any event, it was observed by a QC inspector and non-conformed. Tr. 14,116-20, McCall.

While two other cold-springing incidents were mentioned in affidavits, none of these involved intervention of a foreman. Tr. 13,561, 13,568-69, Mills; App. Ex. 118, Inds. 127, 163, 198, 168. See also Tr. 13,570-74, Hollins, Llewellyn.

None of the above incidents involve a direction by a supervisor to violate a procedure and thus do not state a case of foreman override. While in the first case, the QA process did not identify the violation, it appears from the second incident shortly thereafter, that a similar violation was indeed caught. In addition, design engineering determined the cold spring to be insignificant from a safety perspective. Tr. 13,581-83, Mills. From one isolated case, we cannot draw any inference that a significant breakdown of the QA program occurred.

F. Removal of Arc Strikes Without Process Control

Applicants define arc strike as:

Basically a welder's mistake. The electrode is inadvertently brought in contact with material to be welded. The welder immediately pulls the electrode away from the material. The material has been quickly heated and cooled with small discontinuity created on the material.

(App. Ex. 113, Attach. C, at 6.)

Witness McCall testified that arc strikes outside the weld zone usually occurred when a welder was dragging his rig from place to place and the tungsten electrode accidentally hit up against a pipe. (Tr. 14,126-28.)

The principal concerns associated with arc strikes are that (1) the possibility that a crack in the pipe will result, (2) grinding of a deep strike will substantially reduce the thickness of the pipe, and (3) undesirable material will be left on piping or valves. (Tr. 13,595.) For example, Staff witness Czajkowski noted a crack associated with an arc strike on one of the test socket weld specimens sent to BNL for examination. (P.A. PFF Tr. 14,410; Staff Ex. 34, at 5.) In response to questions from the Board, witness Van Malssen testified that, with the possible exception of fatigue in piping materials "we would leave arc strikes if they didn't violate the wall thickness of the material." (Tr. 13,652.)

Superficial arc strikes in the weld zone that are removed with a few strokes of a file do not violate Duke's process control procedures and do not require additional process control paperwork. (App. Ex. 116, Attach. B, at I-3.) Removal of deeper arc strikes or arc strikes outside the weld zone requires proper authorization and documentation on a M-4 Form and QC inspection. (Tr. 13,596.) QC inspectors are responsible for noting any questionable areas on a weld, including arc strikes, during the final system inspection. (App. Ex. 116, Attach. B, at I-5.) The M-4 procedure includes walkdown inspections of the piping system with the objective of finding any construction damage, including arc strikes. (Tr. 14,144.)

This Board adopts portions of Staff's PFFs 53-56:

Although the allegation that welders were improperly instructed to remove arc strikes from valves and piping without paperwork was raised by the April 1984 NRC inspection report, Applicants treated the matter in Appendix B of their report, based on their finding that there was no foreman override. See App. Ex. 116, Appendix B, Sec. I. . . .

While about a dozen individuals [expressed concerns about arc strike removal], see Tr. 13,591, Llewellyn, only one [incident] appeared to be a violation which had not been caught. In that case, Individual 109 stated that his foreman, Arlon Moore, had filed off several minor arc strikes on a valve under the 1-A steam generator and instructed him to do the same. App. Ex. 118, Ind. 109. In a followup interview, he said he was unsure of the location of the arc strikes. App. Ex. 116, Appendix B, at I-2. Another welder, Individual 196, corroborated this account, but had no direct knowledge if there were any file marks or where they came from, although he had seen what appeared to be file marks on the body of the valve. I.C. Tr. 2038-40, 2060. Applicants conducted a further analysis in order to determine whether improper filing had been done on other valves welded by members of Individual 109's crew and to confirm the location of the valve he identified. Applicants confirmed the location of the valve with Individual 109 and their examination of 19 other accessible valves performed by this crew revealed that any filing or grinding marks outside the weld zones on these valves were performed by the manufacturer. Tr. 13,597-98, Kruse; see also App. Ex. 116, Attach. B, at I-2. Individual 196 also testified he was satisfied that the marks on the valve, raised in his and Individual 109's concern, occurred at the manufacturer. I.C. Tr. 2061. According to the evidence above, the foreman's decision to remove minor arc strikes was technically correct, since he is responsible for any arc strikes on components welded by his crew.

Additional concerns raised included: the removal of superficial arc strikes in the weld zone, which is not a procedure violation since no process control is required; the removal of deeper arc strikes or those outside of the weld zone without proper process control, which was detected by QA; or general allegations of arc strike removal in the past about which no specific information was available. App. Ex. 116, Attach. B, at I-3 to I-4; see also App. Ex. 118, Inds. 5, 37, 102, 131, 168, 176, 186, 191, 194, and 208.

The Board notes only one case where arc strikes were removed at the direction of the foreman. This was not a violation since the arc strike was in the weld area. The other allegations were not confirmed.

G. Scope of Foreman Override Concerns

Palmetto reviewed the employees' affidavits and summarized the results in three tables (Tr. 14,477-30). Table 1 is a basic table that lists worker affidavit number, nature of incident reported, craft, whether a direct witness, and supervisor involved. The other two tables are summaries of different information from Table 1. According to Palmetto,

Table 3 shows that "the scope of supervisors implicated in override concerns is well beyond Arlon Moore and his crew" (Tr. 14,429). — that twenty-three supervisors are implicated in foreman override, compared to the five supervisors implicated by the Applicants. Tr. 14,428-29.¹²

The Board believes that our detailed scrutiny of particular foremen and incidents (at pp. 1495-1501 of this opinion) is a sounder basis for assessing the extent of foreman override than the corresponding parts of Palmetto's tables. Therefore, in order to assess the incremental significance of the tables, the Board disregarded all incidents in Table 1 which involved one of the foremen (supervisors) already discussed in this opinion. We then reviewed each of the remaining affidavits in Table 1. In our view, none of the remaining affidavits describes events clearly involving foreman override, although five describe debatable situations.¹³ Of these debatable situations, in one (No. 36) an employee was not required to do improper work, another was based on second-hand information (No. 66), and in the remaining three (Nos. 20, 163 and 182), insufficient information was provided.

Based on our analysis of Palmetto's Tables 1, 2, and 3, we must reject the argument that foreman override at Catawba has been any more widespread than is reflected in the specific incidents discussed in this opinion. We agree with the Staff that those incidents reflect involvement by only eight foremen (among hundreds at the site), and that five of the eight were involved in a single incident, with no indication of patterns of improper conduct. Furthermore, the incidents of foreman override involved principally one foreman, Arlon Moore, while Moore was working for a particular General Foreman, Billy Smith. Both Moore and Smith have been relieved of their supervisory responsibilities. Even so, it was appropriate for Staff to issue the notice of violation because even one instance of foreman override could be a serious matter.

V. SAFETY SIGNIFICANCE OF FOREMAN OVERRIDE

A. Introduction

The allegations of foreman override referred to ten different kinds of construction procedures. Serious violations of such procedures could

¹² Palmetto erroneously states that Duke found six supervisors involved in foreman override. Tr. 14,428. The Staff implicated eight different supervisors, but five of the eight were associated with only one incident. See Staff PFF 21.

¹³ The Board's reasons for rejecting the remainder included: nonsafety related work (e.g., 91, 118, 110, 168), no allegation of foreman override (e.g., 62), no specific incident cited (e.g., 28) person named not a foreman (e.g., 70, 180), bad decision but procedure followed (e.g., 228, 127, 131, 120), no instruction to violate procedures and none violated (e.g., 114).

result in substandard work. The procedure that received most attention at the hearing and that was most clearly associated with foreman override was the interpass temperature requirement for welding. We discuss the significance of exceeding prescribed interpass temperatures here.

We have examined the circumstances associated with the other nine construction procedures cited in the record and conclude that although a construction or quality assurance procedure violation was evident in several cases, either those cases were nonsafety-related or the safety implications were trivial.

B. Interpass Temperature

In order to prevent the base metal of welds from becoming too hot, procedures specify that welds should cool to at least 350°F between welding passes.¹⁴ Overheating of stainless steel could sensitize it, causing susceptibility to intergranular stress corrosion cracking (IGSCC). (Staff Ex. 34, at 1.) Witness Kruse pointed out that excessive heating of stainless steel can also result in undesirable constriction on the inside of socket welds after the weld has cooled and shrunk, or hot cracking of the weld metal because of the absence of ferrite control (Tr. 13,540).

In view of the many allegations of interpass temperature violations by Welder B and others, Duke undertook a combination of laboratory and field tests to investigate their significance. Duke thought that some of the welds in question might have cooled to 350°F or below, even if the welder thought otherwise. Therefore, one set of tests was made to determine how long it took 2-inch socket welds and 6-inch pipe to cool to 350°F. (App. Ex. 116, at I-3.) From these tests Applicants concluded that several of the interpass temperature violations perceived by the welders had not actually occurred. (App. Ex. 116, at I-4.)

Applicants also tried to identify specific welds in which an interpass temperature of 350°F had been exceeded by use of an etching technique that evaluates chrome carbide precipitation. This involved adapting ASTM A-262 Practice A to field use. (Tr. 13,634; App. Proposed Deci-

¹⁴ None of the technical witnesses could cite a scientific authority for the 350°F "standard." However, it appears to be a tradition in the industry (Tr. 13,538-42; 13,870-72). Staff witness Czajkowski testified that, for the type of welding involved here, interpass temperature is a nonessential variable according to the ASME Boiler and Pressure Vessel Code, § 9. If the interpass temperature were raised, it would not manifestly affect the mechanical properties of the weld. However, "you would have to worry about the stress corrosion cracking aspect . . ." (Tr. 13,871). Applicants point out that there is no ASME or AWS Code requirement regarding interpass temperature for stainless steel and, consequently, "allegations regarding exceeding maximum interpass temperatures do not in themselves represent violations of any Code requirements. However, Duke has committed to comply with NUREG-1.44 which recommends a maximum interpass temperature of 350°F for stainless steel welding." (App. Ex. 116, at I-5.)

sion at 16; Staff PFF 23.) Starting with a population of about 2000 safety-related welds on 2-inch and smaller pipe made by foreman Arlon Moore's crew (Tr. 13,451), design engineering identified 361 which they considered "critical." Because of time constraints, twenty-three of the "critical" welds were randomly selected for testing with Practice A (Tr. 13,452). The Staff's consultant, Mr. Czajkowski, recommended that some of Welder B's welds (where the interpass temperature apparently had been exceeded) also be tested with Practice A (Tr. 13,457) and some welds made by the person Duke believed to be Welder B were added to the sample. (Tr. 13,458.) A total of twenty-five sample welds was tested. (Tr. 13,466.)

In order to determine whether Practice A could distinguish between welds made with the prescribed interpass temperature of 350°F and welds made without allowing cooling between passes, Duke made sample welds under both conditions. Brookhaven National Laboratory (BNL) tested pieces of eight weld samples under Practice A and concluded that none of them was rejectable. "Even the specimens with no heat input control would be considered acceptable," BNL said. A second BNL conclusion was that, "practice A is a viable method of field metallography for determination of sensitization of stainless steels" (Staff Ex. 34, at 5.) This Board's interpretation of these BNL conclusions is that Practice A did not distinguish welds that had experienced high interpass temperatures because they did not become sensitized.

Applicants completed the field testing of welds made by Foreman Moore's crew and found at least three with microstructures which would not be acceptable under Practice A. (P.A. Ex. 161, at 3.) One of the welds that did not pass the Practice A test had been made by an individual believed to be Welder B. (Tr. 13,462; P.A. PFF Tr. 14,399.) Seeking an explanation for these unacceptable microstructures, Applicants welded four test sockets using pipe with the appropriate heat number and four different interpass temperatures: room temperature (72°F), 250°F, 350°F and uncooled (over 700°F). (Tr. 13,502-03.) When tested under Practice A, only the specimen with the 72°F interpass temperature exhibited acceptable microstructure. Even the weld made with an interpass temperature of 250°F (well below the procedural requirement) had unacceptable microstructure. (Tr. 13,503.)

Once again, Practice A was shown to be of little or no use in distinguishing between welds made within and in excess of the prescribed 350°F interpass temperature. In contrast to the Brookhaven results, however, the possibility of sensitization to IGSCC at temperatures at least as low as 250°F was indicated. In view of the disparate results produced by the BNL and Duke laboratory tests and the small number of

test specimens involved in each case, this Board is not convinced that the results of these tests are dispositive of this matter. Further testing aimed at determining the validity of the 350°F interpass requirement would be desirable.

Applicants' principal description of the interpass temperature tests is at page I-6 of App. Ex. 116. Applicants do not distinguish between the early tests, participated in by BNL, and the ones that followed discovery that some welds in the field did not pass Practice A. Applicants' main point is that interpass temperature did not appear to influence the degree of sensitization. Intervenor view this portion of Applicants' report as an attempt to suppress the results of the field tests (P.A. PFF, Tr. 14,397, 14,401). We find some merit in Intervenor's position. Had the field testing with Practice A showed favorable microstructure in all cases, then safety concerns related to excessive interpass temperature would largely have faded away. When unfavorable microstructure was found in three out of twenty-five welds and also in test specimens made at interpass temperatures below 350°F, the potential for IGSCC could not be ruled out.

Intervenor attempted to show that the field testing of welds using Practice A was insufficient and that the extent of sensitization was more prevalent than reported by Applicants. (P.A. PFF, Tr. 14,399, Tr. 14,402.) We need not reach these questions inasmuch as Applicants ultimately do not rely on the field tests for their conclusion that IGSCC will not be a problem at Catawba (App. PFF at 17).

Both Applicants and Staff explain that three factors must be present in order for IGSCC to occur: sensitization of the metal, stress, and a sufficiently corrosive environment. (App. PFF at 17-18; Staff PFF at 16 n.11.) In view of the unfavorable microstructure found on some of the welds examined in the field and also on the laboratory test welds examined by Duke, Applicants do not rely on the absence of sensitization to assure that IGSCC will not occur. Moreover, the second element in IGSCC, stress, may also be present because Duke does not heat-treat welds to relieve stress (Staff Ex. 30, at 2). Therefore, Applicants rely principally on the absence of the third element — a corrosive environment — as assurance against IGSCC. (Tr. 13,607.)

Applicants' witness Ferdon testified that IGSCC has occurred only infrequently in PWRs. Furthermore, the instances where it has been reported have been associated with aggressive environments, e.g., significant concentrations of oxygen, chlorides or other corrosive materials (Tr. 13,608-14; Staff Ex. 30). See also App. Ex. 116 at I-7. Mr. Czajkowski, an expert witness for the Staff, supported Mr. Ferdon and testified that, "despite exceeding interpass temperature and sensitization of

welds, IGSCC is not expected to occur [in the primary loop at] Catawba and those welds would nevertheless be safe in service." (Staff PFF at 16 n.11.)

The record on interpass temperature concerns reflects that:

- (a) Only two (Moore's and Gladden's), or at most a very few, welding crews were subjected to foreman override in respect to interpass temperature.
- (b) Only a few individuals on Moore's crew (where most of the specific complaints occurred) and only one on Gladden's crew were personally involved in failures to adhere to interpass temperature procedures.
- (c) Only on rare occasions over their employment history at Catawba did the involved welders violate interpass temperatures.
- (d) The safety-related welds identified with high interpass temperatures were associated with the primary coolant system that will handle only noncorrosive fluids. We found no pattern of foreman override which would expand the area of concern to systems with aggressive environments.
- (e) There is a favorable track record of PWR primary loops in respect to IGSCC.

Therefore this Board concludes that foreman override causing violations of interpass temperature requirements has not significantly affected the quality of construction of the Catawba plant.

VI. CONCLUSION

As reflected in the foregoing discussion, the Board generally agrees with the major thrust and conclusions of the Applicants' and Staff's proposed findings. Conversely, we largely disagree with Palmetto's proposed findings. The bases for our disagreements with Palmetto's principal points, although not always labeled as such, are set forth in this decision. We note here one final point of disagreement.

Palmetto alleges that "the true extent and seriousness of the foreman override practices [at Catawba] . . . remain yet unknown" because that practice is "cloaked in an atmosphere of threat and intimidation against those who might disclose its existence." Tr. 14,430. We are told that fear of reprisal has created a "chilling effect" on the expression of safety concerns (Tr. 14,391), and that the atmosphere at Catawba was "clearly repressive." Tr. 14,429. In the context evoked by these allegations, we are asked to recall selectively some of our findings on harassment allegations in the June 22 Decision. Tr. 14,432-33. Having failed to show a pattern of foreman override (or to cast substantial doubt on the Applicants' showing), Palmetto is falling back on the "climate of fear" thesis it advanced unsuccessfully earlier in this case. We reject that thesis once

more. We did consider the willingness of the foreman override witnesses to testify, particularly in light of the fact that they were being asked to criticize their supervisors. See p. 1493, above. Beyond that, however, broader claims of harassment and intimidation were resolved in the Applicants' favor last June, and are now pending on appeal. For the Appeal Board's information, we add only that we see no basis in the foreman override record for reopening those questions.

The Board summarizes its basic findings of fact and conclusions of law, as follows:

- The Applicants have met their burden of proof with respect to foreman override concerns at Catawba.
- Instances of foreman override at Catawba have been isolated; only one foreman has been involved in a pattern of foreman override; that foreman and his supervisor have been relieved of supervisory responsibilities.
- Instances of foreman override have not compromised plant safety.
- In view of the foregoing, the Applicants have demonstrated a reasonable assurance that foreman override (also referred to as Welder B and related concerns, as described in ¶¶ III.B.48-III.B.50 of our June 22, 1984 Decision) does not represent a significant breakdown in quality assurance at Catawba.

This Board's Partial Initial Decision of June 22, 1984 authorized issuance of operating licenses for Catawba Units 1 and 2, subject to (a) certain findings by the Director of Nuclear Reactor Regulation, (b) fulfillment of certain conditions imposed by this Board, and (c) resolution of certain emergency planning contentions favorably to the Applicants by a separate Board. The major conditions imposed by this Board (concerning foreman override and emergency diesel generators) have now been fulfilled or withdrawn, and the emergency planning contentions have been resolved favorably to the Applicants, subject to fulfillment of certain post-licensing conditions. As a practical matter therefore, this decision paves the way for issuance of full-power operating licenses for the Catawba Nuclear Station. Accordingly,

IT IS HEREBY ORDERED, pursuant to the Atomic Energy Act of 1954, as amended, and the Commission's rules, that the Director of Nuclear Reactor Regulation is authorized, upon making the findings on all applicable matters specified in 10 C.F.R. § 50.57(a) and upon satisfaction of the conditions in ¶ 1, 19 NRC at 1585 of our Partial Initial Decision of June 22, 1984, to issue to Applicants Duke Power Company, *et al.*, licenses to authorize full-power operation of Units 1 and 2 of the Catawba Nuclear Station.

Upon issuance of this decision, the jurisdiction of this Board will terminate.

THE ATOMIC SAFETY AND
LICENSING BOARD

Dr. Richard F. Foster
ADMINISTRATIVE JUDGE

Dr. Paul W. Purdom
ADMINISTRATIVE JUDGE

James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Helen F. Hoyt, Chairperson
Dr. Peter A. Morris
Dr. Oscar H. Paris

In the Matter of

Docket No. 50-344-OLA
(ASLBP No. 84-498-05-OLA)
(SFP Amendment)

PORTLAND GENERAL ELECTRIC
COMPANY, et al.
(Trojan Nuclear Plant)

November 28, 1984

In this Initial Decision the Licensing Board finds that the Licensee has adequately demonstrated that the expanded capacity of its spent fuel storage facility is designed to maintain discharges of radiation with specified limits and that such capacity is designed so that in case of accidents offsite radiation levels will not exceed 10 C.F.R. Part 100 guideline reference radiation dose values. The Board concludes that there is reasonable assurance that the Trojan Nuclear Plant can be operated without endangering the health and safety of the public under the expanded spent fuel pool capacity authorized by Amendment No. 88 to License No. NPF-1 issued by the NRC Office of Nuclear Reactor Regulation on June 8, 1984, affirms the issuance of the amendment, and additionally concluded that no modifications thereof or additional conditions are required.

INITIAL DECISION

I. INTRODUCTION

On August 1, 1983, Portland General Electric Company (PGE) filed an application for an amendment to License No. NPF-1 for the Trojan Nuclear Plant (Trojan or Plant), a Westinghouse pressurized water reactor, in order to expand the capacity of the plant spent fuel pool from the current 651 assemblies to 1408 assemblies.

On December 5, 1983, the Nuclear Regulatory Commission (NRC) published in the *Federal Register* a notice that it was considering issuing the requested amendment and a no significant hazards consideration determination, and it provided an opportunity for any person whose interest might be affected to request a hearing and to petition to intervene in the proceeding. 49 Fed. Reg. 54,550.

The State of Oregon (Oregon), by its Energy Siting Council and the Oregon Department of Energy jointly, filed a timely petition seeking a hearing and intervention under 10 C.F.R. § 2.714 and the opportunity to participate as a State agency under 10 C.F.R. § 2.715. The Coalition for Safe Power (CFSP) also filed a timely hearing request and intervention petition.

In the Memorandum and Order of February 13, 1984 (unpublished), the Board ruled that Oregon and CFSP had demonstrated standing to intervene in this proceeding and had thereby satisfied the requirements of 10 C.F.R. § 2.714(a)(2), and that Oregon also had standing to participate as an interested State agency.

In its Memorandum and Order of April 23, 1984 (unpublished), the Board accepted contentions advanced by each petitioner, admitted each as a party to the proceeding, admitted Oregon as a participant under 10 C.F.R. § 2.715(c) on all issues considered, and provided for further pleadings and a prehearing conference.

A June 12, 1984 prehearing conference was held to identify the litigable contentions and to establish an evidentiary hearing schedule. On the same date, CFSP filed a letter withdrawing as a party to the proceeding. This withdrawal request was granted in the Board's June 25, 1984 Memorandum and Order Following the Prehearing Conference (unpublished). Two Oregon contentions, as reformulated by the parties to reflect the Board's rulings at the prehearing conference, were admitted in the June 25 Order.

License Amendment No. 88 was issued by the NRC Office of Nuclear Reactor Regulation on June 8, 1984, as authorized by Commission regulation, upon its determination that the amendment involves a no signifi-

cant hazards consideration. Pursuant to this Board's June 25 Order, the evidentiary hearing in this proceeding was calendared to be held thereafter in order to decide the matters placed in controversy by the admitted Oregon contentions.

Evidentiary hearings were held on the Oregon contentions in Portland, Oregon, on October 10, 1984. Testimony was presented by witnesses for PGE and the Staff of the Nuclear Regulatory Commission (NRC Staff), and the two PGE exhibits listed in Appendix A to this Initial Decision were admitted into evidence by stipulation (Tr. 49). Oregon did not present a direct case, but cross-examined witnesses for PGE and the NRC Staff.

PGE filed "Portland General Electric Company Proposed Findings of Fact and Conclusions of Law in the Form of an Initial Decision" on October 10, 1984. In a letter to the Board dated November 6, 1984, Oregon indicated its acceptance, by reference, of the proposed findings filed by PGE. The NRC Staff, on November 13, 1984, filed "NRC Staff Proposed Findings of Fact and Conclusions of Law in the Form of an Initial Decision." Staff adopted the proposed findings filed by PGE, except for proposed changes or additions to several sections of PGE's proposed findings. By letter to the Board dated November 14, 1984, PGE indicated that it adopted Staff's modifications to the proposed findings. In view of the unanimity of all parties on the proposed findings as modified, and after reviewing the entire evidentiary record, the Board has found it unnecessary to perform an extensive rewrite of the findings. We have accepted the modified findings and made only such additional modifications as we deemed appropriate.

II. FINDINGS

A. Contention 1

1. *Matters in Controversy*

1-1. As admitted for litigation, Oregon Contention 1 states:

The licensee has not adequately demonstrated that the expanded capacity of the storage facility is designed to maintain discharges of radiation within the limits specified in the Nuclear Regulatory Commission license.

Bases:

- A. The full impact of failed fuel cladding is not addressed. The existing documentation does not address how much failed fuel cladding can be tolerated by the clean-up system and the impact of failed fuel upon discharges as a result of handling operations.

- B. The clean-up system may be used to process the existing radioactivity in the cask loading pit. If so, the impact on the clean-up system of additional radioactivity from the expanded capacity of the storage facility coupled with the existing radioactivity in the cask loading pit has not been addressed.

2. Summary

1-2. Oregon Contention 1 concerns specific aspects of the ability of the plant to maintain routine spent fuel pool radiological discharges within licensed limits as a result of the proposed capacity expansion. Oregon's concerns centered on the effect on the capacity of the spent fuel pool cleanup system of stored spent fuel with failed cladding (denominated Basis A) and of the processing of existing radioactivity in the cask loading pit (denominated Basis B).

1-3. The Board concludes that this contention has been fully addressed, and that, in response to the issues raised by Oregon, PGE has adequately demonstrated that the expanded capacity of the storage facility is designed to maintain discharges of radiation within the limits specified in the NRC license and the Commission's regulations. Specifically, with regard to Basis A of the contention, the uncontroverted evidence demonstrates that the Trojan spent fuel pool cleanup system has the ability to handle the contaminants produced by the present level of stored spent fuel assemblies, including ten with severe defects and some with "pin-hole" defects in their spent fuel rods. The system has been able to maintain acceptable activity levels even though the system was not operated on a full-time basis.

1-4. Separate analyses performed by PGE and NRC Staff bound the effects of the severely defected spent fuel on spent fuel pool water radioactivity levels, cleanup system capability, and effluent releases to the environment. These analyses demonstrate that the system is able to handle the amount of defected fuel expected over the operational life of the Plant, resulting in acceptable spent fuel pool water radioactivity levels and dose rates.

1-5. The evidence further demonstrates that it is unlikely that reracking operations will dislodge and then crush any loose fuel pellets from defected fuel in the spent fuel pool. Even if a pellet were crushed, the spent fuel pool water radioactivity levels would be comparable to previously measured levels, and radiation doses at the exclusion area boundary would be negligible.

1-6. With regard to Basis B of this contention, the cask loading pit is a small, concrete-walled, stainless-steel-lined pit immediately adjacent to and isolatable from the spent fuel pool. It contains varying levels of chemical and radiological contaminants from Plant modification work. A Plant procedure requires the use of an auxiliary cleanup system, in

series with the spent fuel pool cleanup system, to decontaminate the cask loading pit. The cleanup will be completed before the reracking begins or controls will be established to prevent the contaminants present in the cask loading pit from entering the spent fuel pool, and this pit cleanup will preclude any adverse impact on the ability of the spent fuel pool cleanup system to process spent fuel pool water.

3. General

1-7. PGE's direct case on Oregon Contention 1 consisted of the testimony of Thomas D. Walt (ff. Tr. 54), PGE Branch Manager of Radiological Safety, and portions of PGE Exhibit 2. The NRC Staff's direct case on Oregon Contention 1 consisted of the testimony of Bernard Turovlin (ff. Tr. 75), a chemical engineer in the Chemical Engineering Branch, NRC Division of Engineering.

1-8. Before discussing the specific concerns advanced in the bases for Oregon Contention 1, it is necessary to first place such concerns in the proper context by briefly describing the nature and operation of the plant cleanup systems as they relate to spent fuel pool water radioactivity levels and associated gaseous and liquid effluent releases.

1-9. The operating limits on the Trojan Plant radiological releases are contained in Appendix B of the operating license Technical Specifications. The design objective radioactive material release rates in the Trojan Technical Specifications are based on the following annual dose limits: 5 mrem to the total body or any organ of any individual in an unrestricted area, 10 mrad in air from gamma radiation at the exclusion area boundary, and 20 mrad in air from beta radiation at the exclusion area boundary. These values are consistent with the regulatory levels governing radiological releases to the public in 10 C.F.R. Parts 20 and 50. The Technical Specifications do not contain separate limits for radiological releases from the spent fuel pool. (Walt Testimony, ff. Tr. 54, at 3; Turovlin Testimony, ff. Tr. 75, at 2; Walt, Tr. 63.)

1-10. Spent fuel pool water chemistry and radioactivity levels are maintained by means of the Spent Fuel Pool Cooling and Demineralizer System (SFPCDS). The SFPCDS is a closed-loop system consisting of two subsystems: cooling and purification. The purification subsystem is also used for other purposes, such as to purify water in the refueling water storage tank, when not needed for spent fuel pool purification. (Walt Testimony, ff. Tr. 54, at 3-4; Turovlin Testimony, ff. Tr. 75, at 3; PGE Exhibit 2 at PGE-1037, § 3.2.1.)

1-11. The purification subsystem has the operational capacity to remove radioactivity and other contaminants from the spent fuel pool. It

is operated as needed to decontaminate the pool water to an acceptable level of clarity and purity. (Turovlin Testimony, ff. Tr. 75, at 3; Walt Testimony, ff. Tr. 54, at 4.)

1-12. Utilization of the purification subsystem during normal storage operations rests with the engineering judgment of the Plant radiation supervisor and the chemistry supervisor, with due regard to occupational exposure considerations. Radiation doses in the spent fuel pool area are not significant and the establishment of a spent fuel pool water radioactivity limit for activation of the cleanup system is not warranted. (Walt, Tr. 63-65.)

1-13. Radioactivity in the spent fuel pool water comes primarily from the introduction of reactor coolant water into the pool during refueling, the dislodged crud from the surface of the spent fuel assembly during handling of the assemblies and to a lesser degree from the leakage of fission products from within the fuel assembly. (Turovlin Testimony, ff. Tr. 75, at 2; PGE Exhibit 2 at PGE-1037, § 4.2.1.2.)

1-14. During normal storage periods, liquid radiological releases from the spent fuel pool are limited to normal leakage of spent fuel pool water from pumps, seals, valve packings, and other equipment in the SFPCDS. This liquid is directed to the liquid radwaste system for processing. It can be subsequently recycled for reuse or discharged to the Columbia River. (Walt Testimony, ff. Tr. 54, at 4, 11; PGE Exhibit 2 at PGE-1037, § 4.2.2.)

1-15. All liquid radiological releases to the Columbia River are monitored by a process and effluent radiation monitor (PERM-9). This monitor is set to alarm when the Technical Specification release rate is approached and again (high alarm) if the limit is exceeded. The liquid release is automatically terminated in the event of a high alarm. The valve in question is the discharge point from the liquid radwaste system to the river. (Walt Testimony, ff. Tr. 54, at 4-5.) The PERM-9 radiation monitor is located a sufficient distance upstream of this valve to allow the valve to close following an alarm prior to discharge of higher activity water to the environment. (Walt, Tr. 61, 70.)

1-16. During normal storage periods, the area above the spent fuel pool water surface is exhausted by the High Efficiency Particulate Air (HEPA)-filtered Fuel and Auxiliary Building Ventilation System (FABVS). Any gaseous radiological releases from the spent fuel pool are collected by this ventilation system for discharge to the environment. The FABVS is also monitored by a process and effluent radiation monitor (PERM-2). This monitor contains particulate, iodine, and noble gas channels which are set to alarm (alert alarm) if the Technical Specification instantaneous release rate is approached, and again (high alarm) if

the limit is exceeded. PERM-2 also contains sampling systems for determining iodine, particulate and tritium releases. (Walt Testimony, ff. Tr. 54, at 5.)

1-17. During fuel handling operations or while spent fuel racks are moved above the pool, the Spent Fuel Pool Ventilation System (SFPVS), which contains HEPA and charcoal filters, is used to exhaust the spent fuel pool area above the surface of the pool water. It exhausts into the FABVS. The SFPVS has its own noble gas process and effluent radiation monitor (PERM-3) which is set to alarm when Technical Specification noble gas release rate limits are approached or equaled. (*Id.* at 5-6; Walt, Tr. 57.)

1-18. If a PERM alarm occurs, Plant procedures require the operators to take action to verify the alarm, and to eliminate the cause of the release. (Walt Testimony, ff. Tr. 54, at 6; Walt, Tr. 56-57.) Spent fuel pool releases are not expected to be large enough to cause a PERM alarm, except in the unlikely event of a fuel handling accident. (Walt Testimony, ff. Tr. 54, at 6.)

1-19. In addition to the Plant cleanup systems, Plant procedures require sampling and monitoring of Plant effluent releases to ensure they do not exceed NRC limits. This allows the Plant to maintain an ongoing record of compliance with Technical Specification release limits and contributes to the ability to control future releases. (*Ibid.*)

4. Basis A: Effects of Defected Fuel

1-20. Oregon's first concern involves the impact of stored spent fuel with failed cladding on the cleanup system and resultant discharges. In considering such concern, it must first be recognized that the proposed higher density spent fuel storage racks increase only the storage capacity of the spent fuel pool and not the frequency or amount of newly discharged fuel to be stored per fuel cycle. Since the major introduction of radioactivity into the pool occurs during refueling, the amount of fission products and activated corrosion product released into the pool during any year will be about the same regardless of the total number of assemblies stored in the pool or their period of storage. (Turovlin Testimony, ff. Tr. 75, at 3.)

1-21. A limited number of Trojan spent fuel assemblies have exhibited cladding defects. Ten fuel assemblies (fifty-five rods) have severely damaged fuel rod cladding, and about five rods contain "pin hole" cladding defects. The former were damaged while in the reactor by a phenomenon called baffle jetting during the 1978-80 and 1981-82 cycles. The damage included ruptured cladding, broken rods, and missing fuel

pellets. The reactor internals were modified during the 1984 refueling outage to prevent future damage. (Walt Testimony, ff. Tr. 54, at 7; Turovlin Testimony, ff. Tr. 75, at 5-6; PGE Exhibit 2 at PGE-1037, § 4.2.1.2.)

1-22. Steps have been taken to correct the baffle jetting problem and no additional assemblies containing severe clad damage due to baffle jetting are expected to be stored in the pool beyond the ten assemblies now present in the pool. Additional fuel assemblies containing common "pin hole" defects may be stored in the pool in the future. (Walt Testimony, ff. Tr. 54, at 7-8; Turovlin Testimony, ff. Tr. 75, at 6.)

1-23. The Trojan cleanup system has demonstrated its ability to handle the contaminants produced by the present inventory of stored assemblies, including those with defected fuel rods. The system has been able to maintain acceptable radioactivity levels even though the system was not operated on a full-time basis. (Turovlin Testimony, ff. Tr. 75, at 4; Walt Testimony, ff. Tr. 54, at 9.)

1-24. Expansion of the storage capacity has the potential for a slight increase in fission products released into the spent fuel pool from clad defects and loose pellets, if any. This could increase the amount of radioactivity accumulated in the purification subsystem filters and resins and necessitate their change on a more frequent basis. (Turovlin Testimony, ff. Tr. 75, at 5; Walt Testimony, ff. Tr. 54, at 8, 10.)

1-25. PGE has performed an analysis of spent fuel pool water fission product radioactivity, including the effects of the defected fuel (both severe and "pin hole"). The analysis conservatively bounded both the amount of defected fuel expected in the spent fuel pool through the year 2003 (the year the pool is assumed to be full), and the fission product release rate from the defected fuel to the spent fuel pool water. (Walt Testimony, ff. Tr. 54, at 8; Walt, Tr. 58-59; PGE Exhibit 2 at PGE-1037, § 4.2.1.2.)

1-26. PGE concluded that the spent fuel pool purification system is capable of handling greater-than-expected levels of defected fuel without causing unacceptably high dose rates above and around the pool. (Walt Testimony, ff. Tr. 54, at 9; PGE Exhibit 2 at PGE-1037, Table 4-11.)

1-27. The NRC Staff performed an analogous evaluation of the defected fuel impact on spent fuel pool cleanup capability and drew a conclusion similar to that of PGE. It testified that failed fuel assemblies stored over a long period have a very minor impact on the level of radioactivity in the spent fuel pool and have no safety significance. Cleanup system resin changes might occur at shorter intervals than presently. (Turovlin Testimony, ff. Tr. 75, at 6-7.)

1-28. Krypton-85 is the only significant gaseous radiological release potentially affected by stored defected fuel. PGE performed a bounding analysis of the effect of defected fuel on such releases. The total calculated maximum yearly Krypton-85 release corresponded to an annual beta air dose (0.18 mrad/year) at the exclusion area boundary which is substantially less than the Technical Specification limit (20 mrad/year). Krypton-85 releases from the Fuel and Auxiliary Building, which houses the spent fuel pool, have actually proven too small to measure, even during years when severely damaged fuel assemblies were initially placed in the pool. (Walt Testimony, ff. Tr. 54, at 10; PGE Exhibit 2 at PGE-1037, § 4.2.2.)

1-29. The damaged fuel cladding has no significant effect on liquid radiological releases from the spent fuel pool, which are confined to normal leakage from SFPCDS components into the liquid radwaste system. This leakage is a small fraction of the normal processing rate of the liquid radwaste system. (Walt Testimony, ff. Tr. 54, at 11.)

1-30. In light of the foregoing, the Board finds that the spent fuel pool cleanup system is able to handle the amount of defected fuel expected over the operational life of the Plant, resulting in acceptable spent fuel pool water radioactivity levels and dose rates.

1-31. To the extent that Oregon expressed concern that fuel pellets may be dislodged from the severely damaged fuel during the additional handling required for reracking (State of Oregon's Response to Objections and Arguments Advanced by Licensee and NRC Staff (May 25, 1984), at 5), such a possibility was shown to be unlikely. The maximum number of movements expected to be required for an individual assembly during the reracking is two. Most assemblies will be moved only once. Such movements will not involve any tilting of the assemblies or any sudden motion or impact that could dislodge fuel pellets. (Walt Testimony, ff. Tr. 54, at 11-12.) Any loose pellets are likely to have been dislodged during the initial refueling activities in which these assemblies were removed from the reactor, upended twice, transported through the fuel transfer tube, and inspected before placement in the spent fuel pool. (*Id.* at 12.) No loose pellets have ever been found in the spent fuel pool. (Walt, Tr. 60, 66.)

1-32. Even if pellets were dislodged during fuel movement, they would fall either on the pool floor, if the existing racks have been removed, on the existing racks or on the new racks. (Walt Testimony, ff. Tr. 54, at 12.) Any pellets that are found on the pool floor by visual or radiation surveys during the reracking will be removed prior to placement of the new racks in the pool. (*Ibid.*; Turovlin Testimony, ff. Tr. 75, at 7.) These surveys entail both remote and diver radiation monitor-

ing and are performed with appropriate precautions, including those necessary to protect the divers conducting such activity. (Walt, Tr. 59-60, 67-68.)

1-33. Any pellets which might fall, or might have fallen, on an existing rack during fuel movement will be intentionally dislodged when the racks are removed from the pool and will then be removed from the pool floor. (Walt Testimony, ff. Tr. 54, at 12.)

1-34. Any pellet which might fall over a new rack is unlikely to fall in such a way that the subsequent placement of assemblies in the rack would crush the pellet. In order for this to happen, the pellet would have to fall down a storage cell and land on the base plate precisely where one of the feet of the bottom nozzle of a subsequently inserted fuel assembly would sit. (*Id.* at 13.)

1-35. Even if a pellet were crushed despite the foregoing precautions, it is likely that the fragments would fall through the cooling flow orifice onto the pool floor and remain there. (*Ibid.*)

1-36. PGE testified that the radiological consequences of the crushing of a pellet are not significant. Conservatively assuming that all of the cesium in the pellet was released, the spent fuel pool cesium concentrations would be comparable to previously measured values in the pool and, within 1 week, would be reduced to approximately normal pool concentrations by the cleanup system. (*Ibid.*) The NRC Staff agreed with the conclusions of PGE's analysis. (Turovlin Testimony, ff. Tr. 75, at 8.)

1-37. Assuming that all of the Kr-85 in one fuel pellet were released to the environment when the pellet is crushed, the beta air dose at the exclusion area boundary would be only about 4×10^{-8} mrad, a very small fraction of the annual Technical Specification design objective of 20 mrad. (Walt Testimony, ff. Tr. 54, at 14.)

1-38. Should pellet fragments become entrained in the water and leak from SFPCDS components, which is unlikely, they will be processed through the liquid radwaste system where they will be removed by the filters and demineralizer. (*Ibid.*)

1-39. In light of the foregoing, the Board finds that it is highly unlikely that reracking operations will dislodge and then crush any loose pellets from defected fuel in the spent fuel pool. Even if a pellet were crushed, the spent fuel pool water radioactivity levels would be comparable to previously measured levels and radiation doses at the exclusion area boundary would be negligible.

1-40. We also find that the Trojan liquid radwaste system is able to handle normal leakage from the SFPCDS. These systems, along with the Plant radioactivity effluent monitoring system and monitoring and sampling procedures, will ensure that releases from the spent fuel pool

during normal operation will not cause Plant releases to exceed the limits specified in the Trojan operating license.

5. Basis B: Cleanup of Cask Loading Pit

1-41. Oregon next expressed concern regarding the impact of processing existing radioactivity in the cask loading pit on the spent fuel pool cleanup system. The cask loading pit is a small, concrete-walled pit, lined with stainless steel, and located immediately adjacent to the spent fuel pool. The pit is connected to the pool, but may be sealed off from it by a leak-tight steel door. (Walt Testimony, ff. Tr. 54, at 15; Turovlin Testimony, ff. Tr. 75, at 8; PGE Exhibit 2 at PGE-1037, § 3.2.1.)

1-42. The cask loading pit was originally designed to serve as a location to place a spent fuel transportation cask while loading the cask with spent fuel. Currently the pit is being used as a temporary storage location for machining effluents resulting from Plant modification work conducted during the 1984 refueling. (Walt Testimony, ff. Tr. 54, at 16; Turovlin Testimony, ff. Tr. 75, at 8.)

1-43. A Plant procedure requires that the existing contaminants be removed from the cask loading pit using a temporary cleanup system. The system consists of a pump and a demineralizer. The discharge from the temporary demineralizer is routed to the spent fuel pool purification subsystem, which acts as a polisher, and then back to the cask loading pit through temporary connections. This temporary cleanup system will be used to recycle the cask loading pit water until sufficient decontamination has been achieved. The cask loading pit door will not be opened until the purification process is complete. (Walt Testimony, ff. Tr. 54, at 17, 19; Turovlin Testimony, ff. Tr. 75, at 9.)

1-44. During the cask loading pit cleanup, the spent fuel pool purification subsystem will be isolated from the spent fuel pool. (Walt Testimony, ff. Tr. 54, at 17.) The temporary isolation of the spent fuel pool cleanup system will not affect the ability of the Plant to maintain radiation discharges within the limits specified by the NRC. The cleanup system was designed to process water other than spent fuel pool water. Isolation of the cleanup system from the spent fuel pool is a normal operation and has been done previously during the interval between refuelings. (Turovlin Testimony, ff. Tr. 75, at 9; Walt Testimony, ff. Tr. 54, at 17.)

1-45. PGE testified that, if the cleanup is not completed prior to the reracking for some unforeseen reason, several controls will be established to prevent cask loading pit contaminants from entering the spent fuel pool and to prevent any adverse impact on the ability of the spent

fuel pool cleanup system to process spent fuel pool water. These include separate administrative controls to prevent the door which separates the cask loading pit and the spent fuel pool from opening and to prevent simultaneous lineup of the spent fuel pool purification system to the cask loading pit and the spent fuel pool. The water level in the cask loading pit will additionally be maintained sufficiently below that of the spent fuel pool to prevent leakage of contaminants from the former to the spent fuel pool. (Walt Testimony, ff. Tr. 54, at 18.) The Staff agreed that these controls are adequate to prevent cask loading pit contaminants from entering the spent fuel pool. (Turovlin, Tr. 79-80.)

1-46. In light of the foregoing, the Board finds that the cleanup of the cask loading pit will not adversely affect the ability of the spent fuel pool purification system to process radioactivity in the spent fuel pool under the expanded capacity conditions.

B. Contention 2

1. Matters in Controversy

2-1. As admitted for litigation, Oregon Contention 2 states:

The licensee has not adequately demonstrated that the expanded capacity of the storage facility is designed such that in case of accidents offsite radiation levels will not exceed 10 C.F.R. Part 100 radiation dose values.

Issues:

- A. The impact of an accident involving the drop of a fuel assembly containing dummy stainless steel fuel rods during the reracking has not been addressed.
- B. The conclusion that the free-standing racks will not contact each other or the walls during seismic events is based on theoretical analysis with large uncertainties. Therefore, the effect on fuel assemblies in the event of rack contact should also be analyzed.

2. Summary

2-2. Oregon Contention 2 concerns the ability to maintain accidental spent fuel pool radiological releases within regulatory levels following the proposed capacity expansion. The Oregon concern centered around two particular issues: the impact of the postulated drop of a spent fuel assembly containing dummy stainless steel fuel rods during reracking (denominated Basis A) and the validity of PGE's license amendment application analysis that the spent fuel racks will not contact each other or the spent fuel pool walls during a seismic event (denominated Basis B).

2-3. The Board concludes that this contention has been fully addressed, and that, in response to the issues raised by Oregon, PGE has adequately demonstrated that the expanded capacity of the storage facility is designed such that in case of accidents, offsite radiation levels will not exceed 10 C.F.R. Part 100 guideline reference radiation dose values.¹ Specifically, with regard to Basis A of the contention, the uncontroverted evidence demonstrates that the probability of dropping a fuel assembly containing stainless steel rods on another fuel assembly in the spent fuel racks is very low. Even if such an accident were to result in the breaking of all the rods in both affected assemblies, the radiological releases and resultant doses at the exclusion area boundary would not exceed those of the design basis fuel handling accident nor the guideline reference dose levels in 10 C.F.R. Part 100.

2-4. With regard to Basis B of the contention, the uncontroverted evidence demonstrates that the Trojan spent fuel racks will not impact each other or the spent fuel walls when subjected to an operating basis earthquake (OBE) or a safe shutdown earthquake (SSE). Even under assumed hypothetical contact between spent fuel racks or between the racks and the spent fuel pool wall, conservative analyses performed by PGE demonstrate that such impacts would not cause unacceptable consequences to the spent fuel pool, spent fuel racks, or spent fuel assemblies.

2-5. PGE's direct case on Oregon Contention 2 consisted of the testimony of Thomas D. Walt on Basis A (ff. Tr. 93) and a panel consisting of Jagdish H. Shah, Theodore E. Bushnell, and William J. Bryan on Basis B (Shah Panel) (ff. Tr. 111), and portions of PGE Exhibits 1 and 2. Mr. Shah is the Structural Design and Engineering Manager with Nuclear Energy Services (NES), the Trojan spent fuel rack supplier. Mr. Bushnell is the Civil Engineering Branch Manager of the PGE Nuclear Projects Engineering Department. Mr. Bryan is the Manager of Advanced Mechanical Development in the Westinghouse Electric Corporation (Westinghouse) Nuclear Fuel Division. The NRC Staff testimony on Oregon Contention 2 consisted of the testimony of Millard L. Wohl on Basis A (ff. Tr. 98) and Owen O. Rothberg on Basis B (ff. Tr. 130). Mr. Wohl is a nuclear engineer in the Accident Evaluation Branch of the NRC Office of Nuclear Reactor Regulation. Mr. Rothberg is an engineer

¹ Part 100, § 100.11(a)(1), n.2 of 10 C.F.R. The Board notes that Part 100, Reactor Site Criteria, applies to the evaluation of the suitability of proposed sites for stationary power and testing reactors subject to 10 C.F.R. Part 50 Domestic Licensing of Production and Utilization Facilities. It has become Staff practice, however, to apply Part 100 guidelines also to reactor license amendment proceedings. (Wohl, Tr. 102.)

in the Division of Engineering in the NRC Office of Nuclear Reactor Regulation.

3. Basis A: Fuel Assembly Drop

2-6. Oregon expressed concern over the possibility and consequences of the drop of a spent fuel assembly containing stainless steel rods during reracking. As a result of fuel cladding failures observed during the 1978-80 Plant operating cycle, two new fuel assemblies were modified for use in subsequent cycles such that three fuel rods in each assembly were replaced with stainless steel rods to protect them from vibrations induced by core baffle jetting. These two assemblies were discharged following the 1983 cycle, are currently in the spent fuel pool, and will remain there during the reracking. (Walt Testimony, ff. Tr. 93, at 2-3; Wohl Testimony, ff. Tr. 98, at 2.)

2-7. A fuel assembly containing stainless steel rods is not likely to be dropped on a stored fuel assembly during reracking and puncture it. This would require the coincidence of several improbable events. To begin with, the probability of dropping any spent fuel assembly during handling operations is very low. PGE fuel handling procedures contain administrative controls to avoid the drop of an assembly and the spent fuel pool manipulator crane and fuel handling tools are also designed to prevent this from happening. No assemblies have been dropped during the five refuelings and associated fuel movements at Trojan. This entailed over 1900 assembly movements. The probability of dropping an assembly containing stainless steel rods is even lower. There are only two such assemblies, out of the current 300, in the spent fuel pool. Most assemblies will only be moved once, with some moved twice, during the rack replacement. Lastly, the probability that a dropped assembly would strike another assembly is similarly low. (Walt Testimony, ff. Tr. 93, at 3-4; Wohl, Tr. 100.)

2-8. Despite the foregoing, both PGE and the Staff analyzed the hypothetical radiological consequences which could result from a postulated drop of a fuel assembly during reracking. As noted in the following findings, both analyses demonstrated that the resultant doses from such an accident would not exceed that of the design basis fuel handling accident or the guideline reference dose levels of 10 C.F.R. Part 100.

2-9. The Trojan Technical Specifications prohibit the reracking operation from beginning prior to 60 days following removal of the fuel from the reactor. This restriction was established to reduce the spent fuel assembly "gap" radionuclide inventory available for potential

release in the event of a fuel handling accident. (Wohl Testimony, ff. Tr. 98, at 3-4.) The fuel rod "gap" consists of the space between the fuel pellets and the fuel rod cladding and the plenum space at the top of the fuel assembly. The Technical Specifications also prohibit fuel from being removed from the reactor less than 100 hours following reactor shutdown. Therefore, both the PGE- and Staff-postulated accidents assumed a decay period of at least 64 days for the damaged dropped assembly. (Walt Testimony, ff. Tr. 93, at 4-5; Wohl Testimony, ff. Tr. 98, at 2-3.)

2-10. The accident scenario postulated by the Staff was the drop of one fuel assembly during handling onto a fully loaded section of racks and the release of the gap activity of all 264 rods in the fuel assembly. The presence of the three dummy unfueled rods in the dropped assembly was conservatively ignored. The Staff assumed that all of the iodine and noble gas inventory in the fuel rod "gap" of the one assembly is released. This latter assumption is conservative because a portion of the "gap" iodine will actually plate out on the inner surface of the cladding and will not, therefore, be released. (Wohl Testimony, ff. Tr. 98, at 2-3; Wohl, Tr. 100.)

2-11. The potential radiological consequences at the exclusion area boundary for the NRC Staff-postulated accident were estimated to be 0.16 rem to the thyroid and less than 0.1 rem to the whole body. The resultant doses would be twice these levels if it were assumed that all of the gap activity in both the dropped and stored assemblies was released. In either case, these doses are a very small fraction of the 10 C.F.R. Part 100 guideline values (25 rem to the whole body; 300 rem to the thyroid) and less than the doses resulting from the Trojan design basis fuel handling accident. (Wohl Testimony, ff. Tr. 98, at 4-5; Wohl, Tr. 99-101.)

2-12. The design basis fuel handling accident is a nonmechanistic rupture of the cladding of all fuel rods of one freshly discharged assembly which has decayed 100 hours. (Wohl Testimony, ff. Tr. 98, at 5; Walt Testimony, ff. Tr. 93, at 4; PGE Exhibit 1.)

2-13. PGE assumed that all of the rods would be broken in both the dropped assembly and the stored assembly which is assumed to be struck. The calculated doses at the exclusion area boundary were 0.002 rem to the whole body, 0.15 rem to the skin and 0.22 rem to the thyroid. These doses, like those postulated by the Staff, are considerably less than the doses calculated to result from the design basis fuel handling accident and are a small fraction of the guideline reference levels specified in 10 C.F.R. Part 100. (Walt Testimony, ff. Tr. 93, at 4-7.)

2-14. From a general standpoint, the additional storage capacity expansion does not significantly increase the total gap activity available for

credible accidental release. Krypton-85 is the only radionuclide in the spent fuel rod gap increased as a result of the storage capacity expansion, but it does not contribute significantly to offsite doses. Since the activities of all other noble gas and iodine isotopes in the spent fuel pool are not increased significantly, the total increase in fuel rod gap radioactivity corresponding to the increase in capacity from 651 assemblies to 1408 assemblies is only about 1.4% under uniform assumptions about the quantity and decay period of fuel discharged to the pool at a given time. (*Id.* at 6-8; Walt, Tr. 94-95.)

2-15. The Board finds that the potential offsite radiological consequences of a fuel handling accident involving an assembly containing dummy stainless steel fuel rods are a very small portion of the guideline reference dose levels of 10 C.F.R. Part 100 and thus do not represent a compromise to the public health and safety.

4. Basis B: Movement of Racks During Seismic Events

2-16. Oregon next expressed concern over the validity of PGE's license amendment application analysis that the spent fuel racks will not contact each other or the spent fuel walls during a seismic event.

2-17. A nonlinear time-history method dynamic analysis was performed by NES on behalf of PGE to ascertain the responses of the spent fuel racks under either an operating basis earthquake (OBE) or safe shutdown earthquake (SSE). This methodology follows a step-by-step integration technique. The dynamic parameters of the structure in question are determined at the beginning and at the end of each time-step; the response of the structure for each time-step is computed. For a given base motion, the analysis gives a realistic prediction of the response of the entire structure. This method has been utilized extensively in many industries. The NRC Standard Review Plan (SRP) (§ 3.8.4.) provides that this is an acceptable method for prediction of sliding and tilting of free-standing spent fuel racks. (Shah Panel Testimony, ff. Tr. 111, at 4-5; Rothberg Testimony, ff. Tr. 130, at 3-4.)

2-18. In response to Oregon's concern, PGE and the NRC Staff testified that the nonlinear time-history dynamic analysis does not have large uncertainties attached to it. It is the most rigorous, feasible and widely used method of performing dynamic analysis of structures such as free-standing spent fuel racks. The large number of time-steps and the conservative assumptions employed in the analysis done on behalf of PGE minimizes uncertainties and produces conservative results. For example, it was assumed that two racks approach each other such that they attain the maximum deflections (sliding, tilting, rotation, flexure)

simultaneously. (Shah Panel Testimony, ff. Tr. 111, at 6-7; Rothberg Testimony, ff. Tr. 130, at 4-6.)

2-19. The maximum sliding that the racks will experience was calculated using a very low coefficient of friction between the racks and the floor. Maximum rack tilting was also estimated by assuming a conservatively high coefficient of friction. Both the lowest and highest coefficients of friction were assumed to occur simultaneously despite this physical impossibility. All fuel assemblies within a spent fuel rack cell, regardless of their positioning within the cell, were assumed to impact the cell wall in which they are located in the same direction at the same time. Various loading cases, involving racks with partial and full inventories, were analyzed. The maximum sliding occurs for the fully loaded rack. Nonetheless, these two motions were both assumed to be applicable and were combined to obtain conservative analytical results. It is obviously not possible for a rack to be both partially and fully loaded at the same time. (Shah Panel Testimony, ff. Tr. 111, at 6; Rothberg Testimony, ff. Tr. 130, at 3-5; Shah, Tr. 117-19.) No credit was taken for additional damping that technical research shows exists for structures stored under water, as such additional damping is difficult to quantify and not provided for in Regulatory Guides. (Shah, Tr. 118-19.)

2-20. Although the use of computer codes to design the rack is a potential source of nonconservatism, the accuracy of the codes was verified in accordance with SRP (§ 3.8.1) criteria, and the codes are based on sound engineering principles and practices. Therefore, they are not regarded as a source of unconservative results that would compromise design. (Rothberg Testimony, ff. Tr. 130, at 5-6; PGE Exhibit 2, November 23, 1983 Letter from Broehl, PGE, to Miller, NRC.)

2-21. In light of the foregoing, the Board finds that the nonlinear dynamic analysis employed to determine the responses of the Trojan spent fuel racks under seismic conditions is a valid means for making such a determination and does not have large uncertainties attached to it.

2-22. The minimum design clearance between adjacent spent fuel racks is 2½ inches at the top and 2 inches at the bottom. The minimum design clearance between a spent fuel rack and the spent fuel pool wall is 1¼ inches at the top and 1½ inches at the base. (Rothberg Testimony, ff. Tr. 130, at 4; Shah Panel Testimony, ff. Tr. 111, at 7.)

2-23. The results of the Trojan nonlinear dynamic analysis demonstrated that, under the motion of the OBE or SSE, adequate clearances exist to preclude impacts between any two racks or between any rack and a spent fuel pool wall. During the SSE event (which governs in this instance), the maximum sliding and deflection was determined to be 0.76 inch at the top of the rack and 0.73 inch at the rack base plate. It

was conservatively assumed that adjacent racks were displaced toward each other by these amounts. A 0.98-inch minimum additional clearance at the top of the racks and 0.53 inch at the base plates was maintained in the design clearance. A minimum additional clearance of 0.99 inch between a rack and spent fuel pool wall at the top and 0.77-inch clearance at the base plate was established. (Shah Panel Testimony, ff. Tr. 111, at 8-9.)

2-24. As the Staff testified, the design clearance exceeds the maximum rack deflections under seismic conditions by a factor of 1.65 at the top of the racks and 1.37 at their bottom. Both safety margins are acceptably conservative. (Rothberg, Tr. 131-33, 137.)

2-25. In light of the above analysis and evaluation, PGE and the Staff concluded that neither rack-to-rack nor rack-to-wall contact will occur during an SSE. (Shah Panel Testimony, ff. Tr. 111, at 8-9; Rothberg Testimony, ff. Tr. 130, at 6; Bushnell, Tr. 116; Rothberg, Tr. 133-34; PGE Exhibit 2 at PGE-1037, § 3.3.3.) The Board agrees.

2-26. PGE, nonetheless, agreed to adopt a procedure to determine whether permanent rack movement has occurred following an OBE and to take any necessary remedial action. (Bushnell, Tr. 121-22.)

2-27. Despite analysis that demonstrated that the racks would not impact each other or the spent fuel pool wall during an SSE, PGE utilized simplified bounding case models to analyze the probable results should the racks hypothetically contact each other or the spent fuel pool wall in such an event. (Shah Panel Testimony, ff. Tr. 111, at 10; Bushnell, Tr. 116-17.) This would also envelope the Oregon concern about the impact potentially occasioned by the occurrence of multiple smaller post-SSE earthquakes. (Bushnell, Tr. 119-21.)

2-28. Under these models, a typical fuel rack was first considered to be supported on rack support pad frictionless sliding elements which essentially can be pictured as rollers. It was then hypothesized that the spent fuel pool structure was instantaneously put in motion with respect to the rack at a velocity equal to the peak horizontal SSE ground velocity. Rack relative movement was considered to continue until impact occurs with the spent fuel pool wall. (Shah Panel Testimony, ff. Tr. 111, at 9; Bushnell, Tr. 120-21.) These assumptions are extremely conservative. (Rothberg, Tr. 133.)

2-29. PGE considered the following energy absorption mechanisms: (1) deformation of the spent fuel pool liner plate, (2) penetration of the spent fuel pool wall concrete, and (3) deformation of the rack structure and possible effects on the spent fuel assemblies. (Shah Panel Testimony, ff. Tr. 111, at 10-11.) Using a number of conservatisms, the hypothetical impact effect on each of these energy absorption

mechanisms was analyzed utilizing an energy balance technique, where the impact energy is required to be balanced in the energy absorption mechanism. (*Id.* at 11-12.)

2-30. PGE measured the hypothetical rack impact against three basic acceptance criteria. The first criterion was preclusion of offsite radiation dose levels from exceeding the guideline reference dose levels specified in 10 C.F.R. Part 100. This criterion was converted to an acceptance limit of unacceptable damage to no more than all the fuel rods in one spent fuel assembly, the equivalent of the design basis fuel-handling accident. The second criterion was preclusion of permanent rack deformation to such a degree as to result in exceedance of the criticality constant (i.e., effective reactivity) $K_{\text{eff}} = 0.95$. The third criterion was preclusion of spent fuel pool wall cracking, coupled with spent fuel pool liner plate rupture, to such a degree as to cause loss of spent fuel pool water beyond makeup capability. (*Id.* at 13.)

2-31. The energy balance analysis demonstrated that each specified acceptance criterion was met and that no unacceptable damage to the spent fuel pool, spent fuel racks, or spent fuel assemblies would occur under the postulated impact conditions. (*Id.* at 14-18.)

2-32. PGE also calculated that the maximum deceleration of a spent fuel assembly upon impact of a rack with a spent fuel pool wall was approximately 6.5g.² Westinghouse then performed a separate evaluation of the effect of such impact on spent fuel assemblies, and concluded that structural integrity of the spent fuel assembly is maintained and fuel rods will not be damaged. Spent fuel assemblies can withstand an impact of 34g without localized fuel rod clad yielding and/or failure. No evidence of fuel rod damage was found in Westinghouse impact tests conducted on unirradiated prototype fuel assemblies to an impact load of approximately 20g. (*Id.* at 18-19.)

2-33. In light of the foregoing, the Board finds that neither rack-to-rack nor rack-to-wall contact will occur during an SSE, and that, even if hypothetical impacts of the spent fuel racks were to take place during a seismic event, no unacceptable damage would result to the spent fuel pool, spent fuel racks, or spent fuel assemblies.

III. CONCLUSIONS OF LAW

In reaching this decision, the Board has considered all the evidence submitted by the parties and the entire record of this proceeding. That

² One "g" is the acceleration of gravity.

record consists of the Commission's Notice of Hearing, the pleadings and testimony filed by the parties, the transcript of the hearing, and the exhibits received into evidence. All issues, arguments, or proposed findings presented by the parties, but not addressed in this decision, have been found to be without merit or unnecessary to this decision. Based upon the foregoing Findings which are supported by reliable, probative, and substantial evidence as required by the Administrative Procedure Act and the Commission's Rules of Practice, and upon consideration of the entire evidentiary record in this proceeding, the Board, with respect to the issues in controversy before us;

CONCLUDES that Portland General Electric Company has fully met its burden of proof on each of the contentions decided in this Initial Decision. In response to the issues raised by Oregon, PGE has adequately demonstrated that the expanded capacity of the storage facility is designed to maintain discharges of radiation within the limits specified in License No. NPF-1 and that such capacity is designed so that in case of accidents offsite radiation levels will not exceed 10 C.F.R. Part 100 guideline reference radiation dose values. As to these issues, there is reasonable assurance that the Trojan Nuclear Plant can be operated without endangering the health and safety of the public under the expanded spent fuel pool capacity authorized by Amendment No. 88 to License No. NPF-1 issued by the NRC Office of Nuclear Reactor Regulation on June 8, 1984. Accordingly, the Board affirms the issuance of said Amendment No. 88 and additionally concludes that no modifications thereof or additional conditions are required.

IV. ORDER

WHEREFORE, in accordance with the Atomic Energy Act of 1954, as amended, and the Rules of Practice of the Commission, and based on the foregoing findings of fact and conclusions of law, IT IS ORDERED THAT License Amendment No. 88 to License No. NPF-1 issued by the Office of Nuclear Reactor Regulation on June 8, 1984, authorizing an increase in the storage capacity of the Trojan spent fuel pool from 651 fuel assemblies to 1408 fuel assemblies shall remain in full force and effect without modification.

IT IS FURTHERED ORDERED, in accordance with 10 C.F.R. § 2.760, that this Initial Decision shall constitute the final decision of the Commission thirty (30) days from the date of issuance, unless an appeal is taken in accordance with 10 C.F.R. § 2.722 or the Commission directs otherwise. *See also* 10 C.F.R. §§ 2.785 and 2.786. Any party may

take an appeal from this Decision by filing a Notice of Appeal within ten (10) days after service of this Decision. A brief in support of such appeal shall be filed within thirty (30) days after the filing of the Notice of Appeal (forty (40) days in case of the Staff). Within thirty (30) days after the period has expired for the filing and service of the briefs of all appellants (forty (40) days in the case of the Staff), any other party may file a brief in support of, or in opposition to, the appeal of any other party. A responding party shall file a single responsive brief, regardless of the number of appellants' briefs filed.

THE ATOMIC SAFETY AND
LICENSING BOARD

Helen F. Hoyt, Chairperson
ADMINISTRATIVE JUDGE

Peter A. Morris
ADMINISTRATIVE JUDGE

Oscar H. Paris
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland,
this 28th day of November 1984.

APPENDIX A
LIST OF EXHIBITS

I. PGE

Exhibit No.	Description	Admitted
1	Updated Trojan Final Safety Analysis Report Section 15.7.5 (as amended by Amendment 2 — July 1984)	Tr. 49
2	A. Spent Fuel Storage Rack Replacement Report (PGE-1037): §§ 3.2.1, 3.3.3, 4.2.1.2, 4.2.2; Figures 1-1, 3-6, 3-13; Tables 3-3, 3-10, 4-4 to 4-9, 4-11. B. PGE Responses to NRC Questions: 1. Excerpts from Attachment 2 to Letter from D.J. Broehl (PGE) to J.R. Miller (NRC), dated November 23, 1983, Responses to NRC Requests 6, 7, 9, and 13. 2. Excerpt from Attachment 1 to letter from B.D. Withers (PGE) to J.R. Miller (NRC), dated December 30, 1983, Response to NRC Request 4.	Tr. 49

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Lawrence Brenner, Chairman
Dr. George A. Ferguson
Dr. Peter A. Morris

In the Matter of

Docket No. 50-322-OL

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

November 30, 1984

Of three issues remanded to it by the Appeal Board — (1) housekeeping; (2) environmental qualification of nonsafety-related electrical equipment; and (3) control systems interaction — the Licensing Board finds that numbers (1) and (2) are adequately resolved by affidavits from the NRC Staff. Although the Appeal Board had remanded Issue No. (3) while under a significant factual misimpression (that two studies had not been done while, in fact, they had), it apparently wished to afford Intervenors some recent opportunity to come forward with litigable issues pertaining to the two studies. Thus, the Licensing Board grants the Intervenors additional time to frame such issues, although they could fairly be charged with delay. However, based on a balancing of the equities, the possible pendency of such issues does not provide a basis to stay the issuance of a low power operating license.

RULES OF PRACTICE: STAY PENDING REMAND

The test for determining whether a stay of activities should be imposed pending disposition of a remand is less stringent for the proponent than is the test applicable for stay pending appeal. The test balances: (1) seriousness of the remanded issue; (2) traditional balancing of equities; and (3) any likely prejudice to further decisions that might be called for on the remand.

RULES OF PRACTICE: STAY PENDING REMAND

Where facts material to a remanded issue had changed significantly during the pendency of appeal, parties were under some obligation to take steps to protect their interests in the interim.

RULES OF PRACTICE: UNTIMELINESS

Where Intervenors had been in possession of documents setting forth the Applicant's and Staff's analyses for over a year, were on specific notice that the subject matter involved had been remanded to the Licensing Board for possible future adjudication for three weeks, were reminded five days prior to a scheduled conference of counsel that they would be expected to come to the conference prepared with specific substantive issues challenging the analyses, the Intervenors' failure to come so prepared cannot be viewed as reasonable.

TECHNICAL ISSUES DISCUSSED

Control systems interactions
Environmental qualification of nonsafety-related equipment.

MEMORANDUM AND ORDER RULING ON REMAND ISSUES BACKGROUND

On October 31, 1984, the Appeal Board issued its Decision (ALAB-788, 20 NRC 1102) on appeals from our Partial Initial Decision

(PID) of September 21, 1983, LBP-83-57, 18 NRC 445.¹ The Appeal Board decided essentially all issues on appeal in favor of the Applicant, Long Island Lighting Company (LILCO). However, it remanded three matters, which it characterized as "relatively minor" ones, for further consideration by this Board:

1. quality assurance implementation of "housekeeping" requirements;
2. identification of any nonsafety-related electrical equipment for which environmental qualification may be required by 10 C.F.R. § 50.49(b)(2);
3. safety of plant operation pending resolution of Unresolved Safety Issue (USI) A-47, known as "control systems interactions."

On the record during our November 2, 1984 hearing session (Tr. 25,682-84) and by unpublished written confirmatory order on November 5, we directed the parties to file reports addressing (1) the status of the three remanded issues, (2) any further procedural or substantive actions required of the Board or the parties, and (3) the effect of the three issues on the issuance of a low power license. We received those reports from LILCO, from Intervenor Suffolk County, and from the NRC Staff, on November 14.

The following day, at our November 15 hearing session, we informed Suffolk County that we were dissatisfied with its written report. Particularly with respect to USI A-47, we noted that the County's report was "unacceptably general" in view of the fact that LILCO had completed the two USI A-47 studies (discussed *infra*) that were required of it, and the Staff had completed its review of those studies and had reported its results to all parties in a supplement to the Shoreham Safety Evaluation Report (SER), issued over a year ago, by early October 1983. The County's Report merely recited that it was awaiting the receipt of materials to be filed with this Board by the Staff (presumably the Staff's two affidavits addressing USI A-47 which merely reiterated and referenced the September 1983 SER supplement), and described the commitments of the County's consultants, Messrs. Minor, Bridenbaugh and Hubbard, who would have to complete their analyses of the information on this issue prior to the County taking a substantive position.² We noted that we were raising the issue so that Suffolk County's counsel could consider

¹ In that PID we had found in favor of the Applicant on virtually all of the issues before us for decision, and we found that the pendency of the issues not decided in LILCO's favor would not prevent the issuance of a low power license (up to 5% of rated power) if and when problems regarding onsite emergency power sources were resolved.

² Suffolk County's Report at 2-3.

it prior to the conference of parties scheduled for November 20; and that while we might be willing to consider litigation on the merits of any specific issues under USI A-47 which may be set forth subsequent to a conference of parties, we were unlikely to stay issuance of a low power license in the absence of a basis to do so — such as identification by the County by November 20 of a specific control system interaction within the scope of LILCO's two long-completed studies (discussed *infra*). Tr. 26,680-81.

The conference of parties was held on the morning of November 20, 1984. Present were representatives of LILCO, Suffolk County and the NRC Staff. Notwithstanding our admonition of November 15, Suffolk County came with nothing concrete in the way of issue-framing under A-47. After hearing and carefully considering the position of each party, we made an oral ruling on the three remanded issues. We ruled that the "housekeeping" and the environmental qualification issues had been adequately resolved within the scope of the remand, and were thus closed. As to the USI A-47 issue, specifically as to the two relevant studies, we permitted the County to have until December 11, 1984 to propose one or more appropriate contentions adequately framed for possible litigation. Answers by LILCO and the Staff to any such County proposal will be due December 18 and 21, respectively. We further ruled that the possible pendency of any new issues arising out of the two thirteen-month-old USI A-47 studies (the only remanded matter remaining open) does not impede the issuance of a low power license for Shoreham. Tr. 27,075-78. That afternoon we issued a brief confirmatory Order (unpublished) setting forth our rulings; the instant Memorandum and Order will discuss our rationale for those rulings.

HOUSEKEEPING

NRC regulations require utilities to ensure that activities which affect quality during construction or operation of a nuclear power plant be accomplished under controlled conditions, including adequate cleanliness.³ LILCO had agreed, pursuant to an NRC Staff confirmatory action letter (CAL No. 83-01) of January 19, 1983, to implement certain procedures to resolve ongoing "housekeeping" problems at Shoreham. In light of that commitment, and in the absence of any identified safety questions

³ Criterion II of 10 C.F.R. Part 50, App. B.

relating to this issue, our PID found that the commitment adequately resolved LILCO's housekeeping problems.⁴

The Appeal Board, however, agreed with Suffolk County's assertion on appeal that, given LILCO's past lack of diligence in correcting housekeeping deficiencies at Shoreham, we had erred in relying upon the LILCO commitment to improve. The Appeal Board remanded the issue, with the requirement that the Staff certify to us that an appropriate level of cleanliness is in fact being maintained at Shoreham.⁵

In response to the Appeal Board's remand, the NRC Staff submitted the affidavit of Edward A. Greenman, Chief, Projects Branch No. 1 within the NRC's Division of Project and Resident Programs, Region I. Mr. Greenman had been a witness on this subject at the hearing. In his affidavit dated November 7, 1984, Mr. Greenman stated that the substantial commitments made by LILCO in accordance with CAL No. 83-01 had marked the turning point in LILCO's housekeeping conditions and practices at Shoreham. Greenman affidavit, ¶ 7. Since then, NRC Staff inspectors have observed and documented (in referenced inspection reports) a steady improvement in housekeeping and cleanliness at Shoreham. *Id.* at ¶ 8. He concluded that LILCO has met its commitments and that current housekeeping practices provide acceptable levels of cleanliness at Shoreham, and set forth adequate bases for his conclusion. *Id.* at ¶ 10. All parties and the Board agree that no further action is required before this Board with respect to the housekeeping issue, based on Mr. Greenman's certification on behalf of the NRC Staff. Tr. 27,014. Thus, the concerns of the Appeal Board have been satisfied and this issue is closed.

ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT

Section 50.49(b)(2) of 10 C.F.R. requires that nonsafety-related electrical equipment must be qualified to function in postulated environmental conditions (i.e., the harsh environments created during design basis accidents) where the failure of the equipment due to those conditions could prevent successful accomplishment of safety functions by safety-related equipment. Applicants must establish a program for qualifying any nonsafety-related equipment which falls under § 50.49(b)(2).

⁴ LBP-83-57, 18 NRC 445, 598-99 (1983).

⁵ ALAB-788, 20 NRC at 1144-46.

At the time of our hearing on this issue, the regulation was newly promulgated.

At our hearing, LILCO had testified that no nonsafety-related equipment was expected to require § 50.49(b)(2) qualification because Shoreham's design philosophy was to either classify all equipment that could prevent successful accomplishment of safety functions as safety-related (and thus to environmentally qualify it as such) or to sufficiently isolate electrical equipment to preclude interactions between safety-related and nonsafety-related systems. The NRC Staff testified, in agreement with LILCO, that Shoreham's design philosophy would have the effect LILCO described.⁶

We found that, notwithstanding the fact that criteria for the identification of § 50.49(b)(2) equipment had as yet to be developed, the Shoreham design philosophy has been such as to strive to preclude unacceptable interactions between safety-related and nonsafety-related equipment. Part of our basis for this was the in-depth litigation before us of the broad systems interactions contention, denominated 7B. We found, therefore, that if there were any items of § 50.49(b)(2) equipment that would require qualification, their number would be small and their effects minor.⁷ Prior to fuel load, LILCO was to (1) submit to the Staff a list of any equipment which must comply with § 50.49(b)(2), and to qualify that equipment or justify interim operations prior to qualification; or (2) inform and satisfy the Staff that no such equipment existed.⁸ In effect, we asked the Staff to confirm that LILCO had adequately fulfilled this requirement.

The Appeal Board agreed with us that the LILCO and Staff testimony regarding the effect of Shoreham's design philosophy had not been effectively undermined,⁹ that there was support in the record for our finding that there would be little or no § 50.49(b)(2) equipment at Shoreham,¹⁰ and that the delegation to the Staff of the authority to confirm that LILCO has either upgraded or properly isolated nonsafety-related equipment, so that none falls within the § 50.49(b)(2) category, was not improper.¹¹ However, the Appeal Board noted that, as to the potential small number of heretofore unidentified § 50.49(b)(2) items which might have to be included in the qualifications program, the County, "would be entitled to address" any efforts by LILCO to justify interim

⁶ LBP-83-57, 18 NRC at 538-39.

⁷ *Id.* at 539-40.

⁸ *Id.* at 544.

⁹ ALAB-788, 20 NRC at 1159.

¹⁰ *Ibid.*

¹¹ *Id.* at 1160.

operations prior to full environmental qualification (or, presumably, possible isolation). The Appeal Board then noted an ambiguity in the record: in a letter to the parties last August the Staff indicated that LILCO had submitted any necessary identification of equipment and that this matter "has been resolved by LILCO to the satisfaction of the NRC staff."¹² The Appeal Board pointed out that it was unclear whether the Staff's approval rested upon the permissibly delegated confirmation that no § 50.49(b)(2) equipment exists, or upon a substantive determination that LILCO had properly justified interim operations.¹³

At the November 20 conference, counsel for Suffolk County indicated her belief that what the Appeal Board had remanded to this Board concerning § 50.49(b)(2) was nothing less than an examination of the Staff's bases for its findings on what equipment is in that category. Tr. 27,018. The Board disagrees. The plain wording of the Appeal Board's decision tells us that no further action is required before us in this matter if the Staff's conclusion was based upon a determination that there is no equipment in the category. The Appeal Board only opened inquiry into the basis for the Staff's approval if there was any such equipment.¹⁴ In addition to the plain language of the Appeal Board, this interpretation follows from the Appeal Board's preceding determination that our delegation to the Staff, to confirm that no § 50.49(b)(2) equipment either existed or remains, was not improper.¹⁵

In an affidavit submitted by the NRC Staff, Robert L. LaGrange, Equipment Qualification Branch, Division of Engineering, NRR, certified that no equipment at Shoreham falls within the § 50.49(b)(2) category and pointed to Supplement 7 of the Staff's Safety Evaluation Report (SSER 7) for Shoreham (September 1984) ¶ 3.11.3.1, where the Staff's basis for that determination is set forth. LaGrange affidavit, ¶ 3.

As part of its analysis of this matter, the Applicant conducted two studies: (1) the effect of power supply, sensor and sensor impulse line failures on several control systems ("Control Systems Study"); and (2) the effect of high energy line breaks on control systems ("HELB Study").¹⁶ These studies are the same ones which are the subjects of the USI A-47 remand and will be considered in connection with our discussion of USI A-47, below. The County asserts that, in light of this interre-

¹² Note to Attached Service List from B. Bordenick, August 7, 1984, transmitting Memorandum to E. Reis from A. Schwencer, "Shoreham License Conditions," July 30, 1984, at 2.

¹³ ALAB-788, 20 NRC at 1160.

¹⁴ *Ibid.* The Appeal Board required the Staff to advise us: "whether any equipment falls into the section 50.49(b)(2) category and, if so, the basis for the staff's approval." (Emphasis added.)

¹⁵ *Ibid.* See p. 1536, above.

¹⁶ See SSER 7 (September 1984), ¶ 3.11.3.1 (at p. 3-8).

relationship between the A-47 and environmental qualification issues, the analysis of the two studies as afforded by the Appeal Board in the A-47 remand is necessary in order to evaluate the basis for the Staff's determination regarding § 50.49(b)(2).¹⁷ Thus, the County would have the environmental qualification issues held open pending resolution of any issues under the remand regarding the two USI A-47 studies.

We disagree. We have already answered Suffolk County's general assertion that it is entitled to test the bases of the Staff's conclusion regarding the absence of § 50.49(b)(2) equipment: within the limited scope of the remand it is not. Although we have closed this issue, if any litigation regarding the Control Systems and/or HELB studies ultimately takes place, and discloses that there are any unacceptable interactions involving nonsafety-related equipment which thereby falls under this § 50.49(b)(2) category, we will either require isolation or upgrading (to be functionally safety-related) of any such § 50.49(b)(2) equipment which is ultimately detected so as to remove it from the category, or full environmental qualification or justification for interim operation pursuant to the requirements of § 50.49.¹⁸

UNRESOLVED SAFETY ISSUE A-47 "CONTROL SYSTEMS INTERACTIONS"

USI A-47 concerns the potential that control system failures or malfunctions may interfere with the use of safety equipment and thereby make an accident or transient more severe than those anticipated in safety analyses. Its goal is to define generic criteria that can be used for plant-specific studies to detect such control systems interactions problems.¹⁹

In the Shoreham operating license hearing, A-47 was litigated before us as a subsidiary issue within a broad systems interaction contention, designated 7B.²⁰ That contention encompassed the methodology used by

¹⁷ Suffolk County's Report at 4.

¹⁸ This is the same as our common sense disposition in the PID of the County's similar claim that presently unidentified § 50.49(b)(3) post-accident monitoring equipment which may be required in the future after fuel load had to be environmentally qualified, and that therefore the record on LILCO's compliance with the § 50.49 environmental qualification requirements was incomplete. We held that equipment not even identified as being required for post-accident monitoring by Regulatory Guide 1.97, Revision 2 (and thereby falling into the § 50.49(b)(3) category), is perforce not required to be presently included in the environmental qualification program. We noted that if and when such equipment is identified as being required in the future, it will be required to comply with the environmental qualification rule. LBP-83-57, 18 NRC at 540. The Appeal Board found no basis for upsetting our decision on compliance with § 50.49(b)(3). ALAB-788, 20 NRC at 1060-61.

¹⁹ See ALAB-788, 20 NRC at 1135-36; LBP-83-57, 18 NRC at 552.

²⁰ See LBP-83-57, 18 NRC at 548-55.

LILCO and the Staff in the analysis of all systems interactions and the safety classification of structures, systems and components. On the issue of whether Shoreham can be safely operated prior to the generic resolution of A-47, we found that the Staff's review, post-hearing but prior to operations, of two studies (the Control Systems Study and the HELB Study) to be performed by LILCO, would reasonably assure that the possible occurrence of control systems failures at the Shoreham plant considered in the two studies would not represent an undue risk to the public health and safety. We believed that was sufficient to allow us to conclude that Shoreham can be safely operated.²¹ The pendency, with an uncertain post-operation completion time, of the generic quest of the A-47 task for criteria which could then uniformly be applied to all nuclear plants does not undermine this finding.²²

LILCO provided the two Shoreham-specific studies to the Staff with copies to Suffolk County and the Board on or about August 27, 1982 and November 8, 1982. Subsequent to its request for and receipt of additional information, the Staff published its Safety Evaluation Report finding that the concerns with regard to the subject matter of the studies' effect on Shoreham had been resolved, SSER 4, §§ 7.7.2 and 7.7.1 (September 1983). Unfortunately, no party had directly informed either this Licensing Board or the Appeal Board that the two studies had been completed by LILCO and evaluated by the Staff as part of one of its Safety Evaluation Report supplements.²³ The Appeal Board thus wrote its decision in the mistaken belief that these studies had not been performed by LILCO and evaluated by the Staff.

The Appeal Board disagreed with our conclusion that Staff review of the matter would be adequate. That Board compared USI A-47 with USI A-17,²⁴ where, again, both a generic analysis and Shoreham-specific studies were involved. On appeal, our decision that plant operation should not be precluded pending the Staff's completion of its USI A-17 generic

²¹ *Id.* at 552, 555.

²² *Virginia Electric and Power Co.* (North Anna Nuclear Power Station, Units 1 and 2), ALAB-491, 8 NRC 245, 247-48 (1978); *Gulf States Utilities Co.* (River Bend Station, Units 1 and 2), ALAB-444, 6 NRC 760, 775 (1977); *Cf.* ALAB-788, 20 NRC at 1135.

²³ The parties — LILCO, Suffolk County and the NRC Staff — failed in their obligation to keep the Boards informed; routine submission to us or the Appeal Board of informational copies of technical materials is not sufficient to serve as notification of material changes in significant matters. The Staff's SSER was dated September 1983, and was received by us in early October 1983. However, the underlying technical data must have been available prior to the release of that printed, bound document — certainly prior to the September 21, 1983 date of our PID. Furthermore, Suffolk County's position on appeal of the USI A-47 sub-issue had rested upon the unavailability of the two studies and the lack of a Staff evaluation of them. See ALAB-788, 20 NRC 1136. Therefore, we are particularly disturbed by the County's failure to notify the Appeal Board in light of its position in its December 23, 1983 appellate brief, filed almost three months after the issuance of the Staff's SSER 4.

²⁴ USI A-17 involves the generic study of systems interactions in general in nuclear power plants.

confirmatory study was affirmed.²⁵ The Appeal Board noted that the A-47 issue:

bears some similarity to USI A-17 Like USI A-17, there has been no showing of a "discerned safety problem." [citing, *inter alia*, *North Anna* and *River Bend*, *supra* note 22] At the time of the hearing, the staff knew of "no specific control system failures or actions at Shoreham or any other plant which would lead to undue risk to the health and safety of the public." Further, . . . serious consequences, not included in those already analyzed for the plant, were of "low probability." Moreover, the staff indicated . . . that should such control system failures occur, they would not result "in serious events . . . or conditions" beyond the capability of the safety systems. (Footnotes omitted.)²⁶

The Appeal Board nevertheless found "one notable difference" between the A-47 issue and A-17: For A-47, "*in-depth studies have not been performed* to verify the staff's expectations" (emphasis added), and that the Staff had taken the position that before it could make the reasonable assurance finding on USI A-47 control systems interactions requisite for the issuance of a license, it needed more Shoreham-specific information.²⁷ However, as we have noted above, unbeknownst to the Appeal Board, by the time it issued its decision the in-depth Shoreham-specific studies had long since been performed, and the Staff had made its finding of reasonable assurance. Thus, when the Appeal Board noted its agreement with the County's assertion that LILCO must complete the two evaluations prior to the authorization of a license for Shoreham, and agreed that the results of the two studies must be made part of the adjudicatory record,²⁸ it did so while operating under an incorrect major premise.

The NRC Staff, in its November 14, 1984 report to us on the remanded issues, provided affidavits of Andrew Szukiewicz and Jerry L. Mauck, certifying that LILCO had completed the two studies and had provided the information to the Staff. The Staff in turn determined, based on its evaluations of the studies, that concerns in regard to the subjects of the two studies have been resolved. Absent any showing by the County of a basis to challenge the Staff's determination, the Staff indicated its belief that the only remaining matter was for this Board to accept the Szukiewicz and Mauck affidavits into the record.²⁹

²⁵ ALAB-788, 20 NRC at 1135.

²⁶ *Id.* 1136-37.

²⁷ *Id.* at 1137.

²⁸ *Id.* at 1136.

²⁹ Staff's Report at 2.

Suffolk County objected. The Appeal Board, the County argued, meant to entitle them to "test the basis of any conclusion regarding this matter, in the same manner as any other litigable issue."³⁰ Nevertheless, and in spite of our admonition on the record of the November 15, 1984 hearing (see pp. 1533-34, above), the County's counsel came to our November 20 conference of parties with no delineated issues for possible litigation. The County, in its written Report and at the conference, told us that its consultants were unavailable to analyze the pertinent Staff documents due to other commitments, but that they would be able to perform their analysis by December 7, 1984, which would allow the County to decide whether to file specific significant issues with bases for challenging the two studies by December 11.

We expected something more from the County at this point than a mere plea for additional time to examine the issue. As we have noted above, the relevant NRC Staff evaluation has been in Suffolk County's hands for over a year, and the bulk of LILCO's studies and information has been in Suffolk County's hands for over two years. Furthermore, the County has been on specific renewed notice as to the need to focus on this particular issue. The Appeal Board issued its Decision on October 31, 1984, three weeks in advance of our conference of parties. Moreover, the County's attention was directed to the studies and SSER 4 by other parties by November 9, 1984. It seems to us that by this time the County fairly could be charged with a failure to come forward with a specific well-based issue challenging the two studies.

Nevertheless, albeit laboring under a significant factual misimpression on the existence of the studies due to the parties' failure to notify it, the Appeal Board did remand the matter so as to apparently afford the County a recent opportunity to come forward with some substantive challenge to the two A-47 studies. LILCO's argument is, in effect, that the long availability of the studies and the Staff's evaluation renders any Suffolk County contention very untimely. If accepted by us, this would totally negate the remand. Although we believe LILCO's argument has merit, we believe that, to be fully accepted, it could and should have been made by LILCO in a motion for reconsideration of ALAB-788 timely filed before the Appeal Board. However, we do take the County's long-standing inaction into account below, in ruling that the possible pendency of remanded A-47 issues does not support a stay of the issuance of an operating license.

We therefore, at the November 20, 1984 conference, granted the County's request for more time, until a received date of December 11,

³⁰ ALAB-788, 20 NRC at 1137.

1984, to come forward with issues appropriate for further proceedings. Any such issue must be significant and be set forth with basis and specificity, and must deal directly with the Control Systems and/or HELB studies.³¹ Additionally, without deciding whether or not it will be considered in ruling upon proposed issues, we also required the County to set forth the nexus and significance of any proposed issue to Contention 7B, and/or to argue that such factors are not appropriate or necessary. LILCO and NRC Staff answers to the admissibility of any such issues shall be received by December 18 and 21, respectively. The parties were directed to conduct negotiations to attempt to settle, or to at least narrow and mutually understand, any proposed contentions. The parties were also encouraged to outline what evidence might be put forward at a hearing, and whether other procedural steps, such as further discovery or summary disposition motions, would be appropriate. See Tr. 27,075-79.

EFFECT OF REMAND ON ISSUANCE OF A LOW POWER LICENSE

On October 29, 1984, another Licensing Board (the "Miller Board") issued a decision authorizing low power testing, up to 5% of rated power, for Shoreham.³² LILCO had applied for an exemption to the requirement that a fully-qualified source of onsite emergency power be in place, and had provided an additional "offsite" emergency power configuration as further protection for the public health and safety. Upon analysis of the safety and equitable issues bearing upon the exemption request, the Miller Board granted the exemption, and pursuant to Commission directive transmitted it to the Commission for immediate effectiveness review.

Subsequent to the Miller Board's decision the instant remand came down, and it falls to us to determine whether the one potentially remaining remanded matter, the A-47 studies, should affect Shoreham's authorized low power license. Although we cannot say that no possible issue challenging the two USI A-47 studies which may be raised by the County and accepted for litigation on the merits by us could have any

³¹ The Appeal Board was concerned with the two specific studies whose results were to support the Staff's "reasonable assurance" finding, and any entitlement to additional litigation bearing on USI A-47 would thus be limited to litigable issues challenging the findings of those studies. Issues which more broadly approach A-47 (such as other types of studies that perhaps could have been done) would not appear to be within the scope of the Appeal Board's remand.

³² *Long Island Lighting Co. (Shoreham Nuclear Power Station, Unit 1)*, LBP-84-45, 20 NRC 1343 (1984).

significance for low power operations, we find that the possible future pendency of any issues arising out of this remand does *not* justify a stay in the issuance of a low power operating license.

As LILCO pointed out in its November 14 Report to this Board, it is merely fortuitous that Commission authorization of LILCO's low power operating license had as yet to be finally granted at the time of the remand decision issued over a year after our PID. This is particularly true as to the fuel load, precriticality and cold-criticality portions ("Phases I and II") of LILCO's low power testing program, which were authorized upon summary disposition by the Miller Board more than two months ago,³³ but for which, in a departure from normal practice, effectiveness approval was retained by the Commission and not granted until November 21, 1984.³⁴ Typically, where NRC cases have involved remanded issues, the Applicant has already received an operating license or construction permit prior to the remand, and the question has become whether an already-awarded license or permit should be suspended pending resolution of remanded issues. We agree with LILCO that the same analytical principles are applicable regardless of whether the question is one of a stay of issuance of a license following a remand, or a stay (suspension) of activities under an issued license following a remand.

The test applied in determining whether a stay of activities should be imposed pending disposition of a remand is less stringent for the party seeking such a stay than the test which is applicable to a stay pending appeal.³⁵ The test is one balancing:

1. the seriousness of the remanded issue;
2. a traditional balancing of equities; and
3. consideration of any likely prejudice to further decisions that might be called for by the remand.³⁶

³³ "Order Reconsidering Summary Disposition of Phase I and Phase II Low-Power Testing," *Seabrook*, LBP-84-35A, 20 NRC 920 (1984).

³⁴ CLI-84-21, 20 NRC 1437 (1984). When the Commission authorized LILCO's low power operating license for Phases I and II, it took note of our brief confirmatory order (November 20, 1984) stating in summary fashion our ruling that the future pendency of any issues arising out of the two USI A-47 studies does not affect the possible issuance of a low power operating license. However, the Commission determined that the license could not issue until seven days after the date of our instant order setting forth our rationale for that ruling. CLI-84-21, 20 NRC at 1441.

³⁵ The four well-known factors enumerated in *Virginia Petroleum Jobbers Association v. FPC*, 295 F.2d 921, 925 (D.C. Cir. 1958) ordinarily govern NRC disposition of motions for stay pending appeal. 10 C.F.R. § 2.788(e).

³⁶ *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), CLI-77-8, 5 NRC 503, 521 (1977). See also *Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-458, 7 NRC 155, 159-60, 169-70 (1978).

In applying these criteria we find essentially no justification to impose a stay of any low-power operating license which might otherwise be authorized, pending our resolution of the remanded A-47 matter.

There is reasonable assurance that the remaining remanded issue is not serious from the standpoint of public health and safety and therefore does not present a basis to stay issuance of an operating license, particularly the low power one for up to 5% power now being contemplated by the Commission. The Appeal Board itself characterized all of the remanded issues, of which only one possibly remains, as "relatively minor ones." Undoubtedly, the Appeal Board in part considered the (mistakenly-believed) noncompletion of the two A-47 Shoreham specific studies relatively minor because of its agreement with our overall contention 7B systems interactions findings, of which USI A-47 was but a small part, that:

1. LILCO performed numerous and diverse studies bearing on systems (including control systems) interactions at Shoreham, which were extensively litigated at the hearing, and which in their totality demonstrate that systems interactions problems were adequately analyzed to assure that the Shoreham design protects the public from credible accidents;³⁷
2. The County had failed to identify (throughout the entire 7B litigation) any adverse systems interaction that had not been adequately considered;³⁸
3. There is no concrete suggestion of inadequacy of current NRC Staff review procedures and safety criteria to assure that the effects of overall potential systems interactions are within the design basis envelope of nuclear plants;³⁹ and
4. *See also* the Appeal Board's findings regarding the A-47 issue, quoted in this Order at p. 1540, above.

With the benefit of supervening knowledge of the actual facts — the "one notable difference," dictating the Appeal Board's remaining concern regarding USI A-47 as compared to its affirmance in LILCO's favor of the USI A-17 issue,⁴⁰ does not exist because the two Shoreham-specific studies and the Staff's evaluation have long been available to the County — we can say, at least, that a potential issue thought to be "relatively minor" in the absence of the studies and evaluation is

³⁷ ALAB-788, 20 NRC at 1127, 1128-29.

³⁸ *Id.* at 1132-34.

³⁹ *Id.* at 1134-35.

⁴⁰ *Id.* at 1137.

relegated to even lesser significance.⁴¹ In other words, there was never any finding of inadequacy of an analysis, only incompleteness in one particular area of systems interactions. That incompleteness did not exist in fact, although the adjudicatory record did not include this.

Moreover, albeit only as a supporting secondary rationale, it is fair to take into account the County's silence over this past year in weighing any possible County claim (which it has not made) that, contrary to the conclusions of LILCO and the NRC Staff, a new serious safety issue has been disclosed by the two studies. It strains credulity to believe that the County, a sophisticated, well-represented party-appellant, would remain silent for over a year if it had any such well-based claim.⁴² Wholly aside from its obligation, shared by all parties, to inform the Appeal Board of the studies and Staff evaluation, the County would not be content to rest on its mere claim of incompleteness due to lack of the studies if it had a basis to convert that claim to one that the now completed studies and evaluation raised a serious safety issue.

In addition to being supportive of our finding that the remanded issue of the two A-47 studies is not serious, the County's long-standing, and, since the remand, continued dilatory failure to raise any issue challenging the studies, weighs heavily against it and in LILCO's favor as part of the "traditional balancing of the equities" in deciding whether to stay the issuance of an operating license. As LILCO correctly points out, in allowing the issue to lie fallow all this time, the County is not in the same posture as the successful appellant where facts material to a remanded issue did not change during the pendency of the appeal and therefore there was no impetus or obligation to take steps to protect its interests in the interim.

Although we have agreed to allow Suffolk County more time to frame any issues challenging the A-47 studies, here we are faced with the County coming in at what is, for low power purposes, essentially the 12th hour, and asking that a license be delayed while the County takes additional time. As a final dilatory action, the County ignored our warning on November 15, 1984, that we would be unlikely to stay the issuance of a low power license in the absence of a basis to do so presented to us before or at the November 20 conference, such as by identifying a particular unacceptable interaction within the scope of the two studies.

⁴¹ *Madland*, ALAB-458, *supra* 7 NRC at 160-61, teaches that a Board should take advantage of the benefit of supervening knowledge of events after a remand in deciding whether the level of seriousness of the defects militate for or against a stay of actions under a license (in that case a construction permit).

⁴² We do ascribe to the County the good faith and responsible approach to the litigation before us such that it does not raise or continue to pursue issues in litigation which it does not believe to be well-based.

Tr. 26,680-81. See pp. 1533-34, above. The County's lack of diligence cannot be seen as reasonable when viewed in this light.⁴³

We must bear in mind that the license at issue here is a low power operating license. The degree of potential danger to public health and safety at low power operation is substantially less than at full power operation.⁴⁴ When this fact is viewed concurrently with the Staff's finding of reasonable assurance that present concerns with A-47 as applied to Shoreham have been resolved by the studies, and any future concerns which are incurred at the time A-47 is resolved generically can at that time also be resolved for Shoreham, and that "Shoreham can be operated at any power level, prior to this generic resolution of issue A-47,"⁴⁵ it is apparent that risk to public health and safety from low power operations should be slight. Indeed, our present analysis leads to the result that possible future operation of Shoreham at higher power levels should not be affected by the remanded issues, unless, of course, new information is raised during any future remand proceedings supporting a finding that a serious control systems interaction has been discovered.

In addition, it is noteworthy that LILCO, over two years ago, proceeded in good faith⁴⁶ to complete and submit the two studies in question, well in advance of possible operation of Shoreham, as it had promised to do in the record before us.⁴⁷ Likewise, the NRC Staff acted in good faith in issuing its safety evaluation of the studies well in advance of any fuel loading.

Other equities pertinent to issuance of a low power license for Shoreham were examined in detail in the Miller Board's Initial Decision which authorized the low power license.⁴⁸ Some of the Miller Board's reasoning directly supports a refusal to stay a low power license here, some supports it by analogy, and nothing in the Miller Board decision

⁴³ The position of the NRC Staff, as indicated at our conference, is that the Staff "believes none of the three [remanded] issues could affect the issuance of a low power license or a full power license" (Staff's November 14 Report at 4), particularly in view of the County's having provided no reasons to the contrary at the conference. Tr. 27,047-51.

⁴⁴ 46 Fed. Reg. 47,764, 47,765. See *Shoreham*, LBP-84-45, *supra*.

⁴⁵ Szukiewicz affidavit, ¶ 8; Staff's Report at 4.

⁴⁶ See *Midland*, ALAB-458, *supra*, 7 NRC at 170-72.

⁴⁷ LBP-83-57, 18 NRC at 552, 555, and unpublished slip opinion findings J-84 to J-91 (slip. op. at 492-95).

⁴⁸ *Shoreham*, LBP-84-45, *supra*, 20 NRC at 1375-82.

would work in favor of the imposition of a stay in the instant circumstances.⁴⁹

In view of all of the above, a "traditional balancing of equities" weighs against the imposition of a stay.

We can see no danger of prejudice to any substantive decisions to be made on remand. If future consideration of the A-47 matter leads us to discover any serious control systems interaction problem with Shoreham, which had not been previously uncovered by LILCO's or the Staff's studies or by the intensive litigation before us of the County's overall systems interaction issues under Contention 7B, low power (or, for that matter, full power) operations may be stopped until corrective measures are implemented. Furthermore, the Commission has often stated that grant of a low power operating license in no way presupposes the subsequent grant of a license for full power operations.⁵⁰

At our conference of parties, counsel for Suffolk County argued that the new emergency electrical power configuration which had been put in place for purposes of LILCO's low power exemption application had not been considered by the A-47 studies. Tr. 27,074. This, we point out, would be so even if we and the Appeal Board had reviewed and approved these studies prior to the exemption litigation. Any possible control systems, or other systems, interaction specific to the new emergency power configuration could and should have been raised as a health and safety issue before the Miller Board.

In conclusion, we are not saying that USI A-47 issues cannot possibly have any significance for low power and full power operations. However, the County has completely failed to raise any issue — let alone a significant, specific and well-based material one — which would have such impact. In view of the equities involved, particularly Suffolk County's lack of diligence and the reasonable assurance that no danger to public health and safety will arise from low power, or even full power, operation due to the possibility of an as yet undiscovered control system interaction, we find that this one potentially remaining remanded matter does not prevent authorization of an operating license for Shoreham.

⁴⁹ The specific circumstances considered were:

- stage of the facility's life
- financial or economic hardships
- internal inconsistencies in, or inconsistent application of, the regulations
- good faith effort to comply with the regulations
- public interest in adherence to regulations
- safety significance of issues involved.

⁵⁰ This statement was most recently made by a unanimous Commission in this case in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), CLI-84-21, 20 NRC 1437, 1441 (1984).

Finally, we note that neither the County's report of November 14 nor its arguments at the November 20, 1984 conference of parties, addressed the equitable and other considerations bearing upon whether the remand should affect issuance of an operating license (at any power). It appears the County believes that by virtue of the remand the Appeal Board required that no operating license could issue until the County, waiting until a date of its choosing (December 11, 1984), could decide whether to raise issues admissible before us, and if the County did so that would automatically stay issuance of a license until completion of the litigation on the merits of any remanded issue. If this is the County's belief, despite the long existence of the A-47 studies, and the teaching of flexibility of the effect of a remand by *Seabrook* and *Midland* discussed above, then the County now has the opportunity and obligation promptly to appeal our instant decision not to impose a stay to the very Appeal Board which issued the remand. *Cf.* 10 C.F.R. § 2.788(h). It should do so well within the seven-day period from today which the Commission provided as an additional period for expedited appellate review before its November 21, 1984 Memorandum and Order approving the Miller Exemption Board's September 5, 1984 authorization of Phases I and II of low power testing could become effective. By virtue of the Commission's order, and given our denial of a stay grounded on the pendency of the A-47 studies remanded issue, those orders become effective on December 7, 1984, at 5:00 p.m., Eastern Standard Time, unless stayed by Appeal Board review of our instant order, or appellate review of the Miller Board and Commission orders authorizing the Phase I and II low power testing exemption.⁵¹

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY
AND LICENSING BOARD

Lawrence Brenner, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland,
November 30, 1984

⁵¹ Copies of this decision were provided to representatives of LILCO, Suffolk County and the NRC Staff at the NRC Staff offices in Bethesda, Maryland on November 30, 1984.

Directors'
Decisions
Under
10 CFR 2.206

DIRECTORS' DECISIONS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

James M. Taylor, Deputy Director

In the Matter of

Docket No. 50-441
(10 C.F.R. § 2.206)

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

November 15, 1984

The Deputy Director of the Office of Inspection and Enforcement denies a petition submitted by Susan L. Hiatt on behalf of Ohio Citizens for Responsible Energy (OCRE) requesting issuance of a show-cause order to revoke or suspend Cleveland Electric Illuminating Company's construction permit for Perry Unit 2.

**RULES OF PRACTICE: REVOCATION OF
CONSTRUCTION PERMITS**

NRC regulations do not require that a construction permit be revoked or suspended for slowing or stopping construction when there is no current threat to the public health and safety by the licensee's actions.

ATOMIC ENERGY ACT: REPORTING REQUIREMENTS

A slowdown in construction does not itself give rise to a reporting obligation.

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

By petition dated June 4, 1984, Susan L. Hiatt, on behalf of Ohio Citizens for Responsible Energy (OCRE), requested pursuant to 10 C.F.R. § 2.206 that the Director of the Office of Inspection and Enforcement (IE) order the Cleveland Electric Illuminating Company (CEI) to show cause why CEI's construction permit for Perry Unit 2 should not be revoked or suspended. OCRE asserts as bases for this request: (1) CEI's apparent abandonment of construction at Unit 2; and (2) CEI's silence to the Commission on the matter of the completion of the facility and its statements to the Regional Administrator, Region III, that corrective actions will be completed on Unit 2 within the year, in spite of its public statements that no work is being done or money is being expended on the facility. OCRE says that the latter circumstances raise the question of whether CEI has made a material false statement which would constitute grounds for revocation of its construction permit.

On July 3, 1984, the Director acknowledged receipt of the petition and informed OCRE that this request was being reviewed. A notice that the petition was under consideration was published in the *Federal Register*, 49 Fed. Reg. 28,484 (July 12, 1984). On July 31, 1984, CEI filed its response to the petition. The Staff has completed its evaluation of the petition and, for the reasons stated in this decision, OCRE's request is denied.

BACKGROUND

The Cleveland Electric Illuminating Company holds Construction Permits CPPR-148 (Unit 1) and CPPR-149 (Unit 2), issued by the Nuclear Regulatory Commission in 1977, which authorize construction of the Perry plant. The Perry plant is located on Lake Erie in Perry County, Ohio, approximately 35 miles northeast of Cleveland, and consists of two boiling water reactors of General Electric design and related facilities for use in the commercial generation of electric power. Construction started on both units in October 1974.

The construction permits originally specified December 31, 1982, as the latest date for completion of construction of Unit 1 and June 30, 1984, as the latest date for completion of construction of Unit 2. By letter dated July 21, 1982, CEI requested that the construction permits be amended to specify November 30, 1985, as the latest date for completion of construction of Unit 1 and November 30, 1991, as the latest date for completion of construction of Unit 2. The licensee sought this

amendment because construction had been delayed due to a reduced growth rate in the demand for electricity, the incorporation of changes for plant design and analysis, and the difficulty in obtaining capital funds. In December 29, 1982, the NRC extended the construction completion dates to November 30, 1985, for Unit 1 and November 30, 1991, for Unit 2 as CEI had requested. 48 Fed. Reg. 1128 (Jan. 10, 1983). The current Perry Unit 2 construction permit will therefore expire in 1991.

Concrete work for the entire Perry plant is 99% complete; all work on Unit 2 is approximately 44% complete. The licensee's periodic progress reports reflect that work is progressing on both Perry Units 1 and 2. By letter dated July 17, 1984, CEI advised NRC that minimal work is currently being undertaken on Unit 2. This work consists of completion of Unit 2 systems which are required to support Unit 1 operations, Unit 2 Division 1 and 2 diesel generators, and areas of the common plant facilities which are inside the initial Unit 1 operational security boundary. Although work is continuing, the licensee's completion date for Unit 2 is undetermined at this time. See Letter from Murray R. Edelman, Vice President, Nuclear Group, CEI, to B.J. Youngblood, Chief, Licensing Branch No. 1, Office of Nuclear Reactor Regulation (NRR) (July 17, 1984) (Attachment 1 to CEI's response to the petition).

ANALYSIS

Petitioner raises two issues as a basis for her request that CEI's construction permit for Perry Unit 2 be revoked or suspended. A discussion of each of these issues follows.

1. Whether CEI Has Stopped Construction on Perry Unit 2 and, if So, Whether This Constitutes Grounds for Revocation or Suspension of CEI's Construction Permit

Petitioner alleges that construction work has been halted, that no money is being spent on Perry Unit 2, and that CEI has been "parasitizing" Unit 2 for equipment for Unit 1, thereby reflecting the licensee's intention to abandon Unit 2. Petitioner argues that these actions constitute a basis for revocation or suspension of CEI's construction permit under NRC regulations. Specifically, petitioner argues that CEI's willful stoppage of construction on Perry Unit 2 can only be construed as a failure to construct that facility in accordance with the terms of its construction permit and, as such, triggers the sanctions of 10 C.F.R. § 50.100 which prescribes revocation or suspension of a construction permit for

failure to construct or operate a facility in accordance with the terms of the construction permit or license. The petitioner argues that since the Commission obviously would not issue a construction permit to a utility that had no intention of building a nuclear facility, the Commission should revoke or suspend a construction permit when its holder no longer intends to complete the facility.

In response to this argument, it should first be noted that available evidence does not suggest that CEI has abandoned construction of Perry Unit 2. The petitioner, in arguing that construction has been halted, relies primarily on newspaper reports of remarks made by Robert M. Ginn, Chairman of the Board and Chief Executive Officer of CEI, at CEI's annual shareholders' meeting on April 24, 1984. CEI has explained Mr. Ginn's comments in its letter dated July 30, 1984, to Richard C. DeYoung, Director, Office of Inspection and Enforcement, and the Staff does not consider Mr. Ginn's comments to constitute evidence that Perry Unit 2 will not be completed.¹ With regard to petitioner's allegations that CEI is "parasitizing" equipment, the Licensee's letter of July 30, 1984, also explains that, although CEI admits that three control modules were transferred from Unit 2 to Unit 1, such reallocation of equipment between units on multi-unit sites in order to meet construction schedules is a common industry practice. This is an acceptable practice. NRC regulations do not prohibit such reallocation, as long as the licensee installs such equipment and takes such actions in constructing the facility as are necessary for the safe operation of its facility. The Licensee's letter dated July 17, 1984, to B.J. Youngblood, *supra*, also indicates that work is progressing on Perry Unit 2, although at a slower pace than initially planned, with CEI manpower being concentrated on getting Perry Unit 1 licensed in 1985. Moreover, FSAR amendments submitted by the Licensee continue to be applicable to both Perry units. Additionally, internal monthly progress reports are voluntarily provided by the Licensee to the NRC resident inspector in order to keep him apprised of progress. These reports indicate that work is continuing on Perry Unit 2. Onsite inspections by the NRC resident inspector and

¹ Mr. Ginn addressed the status of Unit 2 both in his prepared statement to the shareholders and in an informal press conference following the meeting. He was quoted as saying in his prepared statement that CEI was spending only "limited funds" on Unit 2 and faces "many uncertainties as to the future of that second unit." Petition, Exhibit 2. A second article quoted him as saying during the press conference that CEI was "not spending any money on Unit 2." Petition, Exhibit 1. A third article did not quote Mr. Ginn on this point but concluded that CEI had essentially stopped building the second unit while concentrating all of its resources on Unit 1. Petition, Exhibit 3. As explained in CEI's July 30, 1984, letter to Mr. DeYoung, *supra*, the correct statement of the status of Unit 2 was Mr. Ginn's prepared statement that CEI is spending "limited funds" on Unit 2. The statement that CEI is "not spending any money on Unit 2" was an informal remark which was not intended to be taken literally but to emphasize CEI's concentration on Unit 1.

periodic inspections by other Region III staff have confirmed that construction work on Perry Unit 2 has not been discontinued.

Petitioner's argument that a halt or slowing of construction mandates show-cause proceedings was specifically rejected in a Director's decision on another petition under 10 C.F.R. § 2.206. See *Washington Public Power Supply System* (WNP Nos. 4 & 5), DD-82-6, 15 NRC 1761 (1982). In that instance, the petitioner requested that the Washington Public Power Supply System (WPPSS) be ordered to show cause why its construction permits should not be revoked on the basis of the WPPSS Board of Directors' adoption of a resolution terminating two nuclear units in the project. WPPSS intended to retain the construction permits at least during the first phase of its termination plan that called for an attempted transfer of the projects to a new owner. In denying the petition, the Director of NRR stated that WPPSS' postponement or cancellation of its plant constituted actions clearly not inimical to public health and safety under the Atomic Energy Act. As termination of the projects did not itself pose any hazard to public health and safety that would require issuance of an order to show cause, there was no reason for the NRC to take the requested action. *Id.* at 1767. This decision was distinguished from that involving the Tyrone Plant, see *Northern States Power Co.* (Tyrone Energy Park, Unit 1), CLI-80-36, 12 NRC 523 (1980), in which the co-owners of the project indicated no desire to retain the construction permit and in fact consented to revocation of the permit.

In the present instance, as in that involving WPPSS, there is no current threat to public health and safety by the Licensee's actions to slow the pace of construction. Thus, there is no reason for the NRC to take the action requested by petitioner of revocation or suspension of CEI's construction permit. Nor do NRC regulations require that a construction permit be revoked or suspended for slowing or stopping construction. While 10 C.F.R. § 50.100 provides for revocation or suspension of a construction permit for failure to construct a facility in accordance with the terms of the permit, failure to complete construction of the facility is governed by 10 C.F.R. § 50.55(b). That regulation states only that if the proposed construction is not completed by the latest completion date the permit shall expire. The Licensee may stop or slow down work due to subcontractor disputes, strikes, redesign efforts, funding limitations or other considerations. NRC Region III staff conducts periodic audits of construction activities to assure compliance with the terms and conditions of the construction permit. As the current construction permit for

Perry Unit 2 does not expire until 1991, there is no requirement that NRC take action because of a stoppage or slowing of construction.²

In sum, there is no indication that construction work has been stopped on Perry Unit 2. Moreover, as indicated in *Washington Public Power Supply System, supra*, 15 NRC at 1761, in the absence of clear abandonment of the project, a stopping of construction would not itself constitute grounds for revocation or suspension of CEI's construction permit. Even if the project were abandoned, the decision whether to take the formal step of revoking the construction permit or merely allow it to expire is largely discretionary.

2. *Whether CEI Has Made a Material False Statement to NRC*

Petitioner asserts that CEI may have made material false statements to NRC and that this constitutes a basis for revocation of its construction permit. Petitioner alleges that CEI may have made a material false statement in its failure to inform NRC, the Licensing Board, or the parties of the cessation of work and investment in Perry Unit 2. Petitioner also alleges that CEI's statements to the Regional Administrator, Region III, that corrective actions will be completed on Unit 2 within the year, contradict its public statements and may thus constitute a material false statement. Such material false statements could subject the Licensee to enforcement action up to and including revocation of its permit. See General Statement of Policy and Procedure for Enforcement Actions, 10 C.F.R. Part 2, Appendix C, *as revised*, 49 Fed. Reg. 8583 (March 8, 1984).

The first question to be addressed is whether CEI's failure to notify NRC of the slowdown of construction at Perry Unit 2 constitutes a material false statement. In answering this question, it should be noted that CEI has in fact informed the NRC that only a limited amount of construction is being done on Perry Unit 2. See Summary Report of Case-load Forecast Panel Meeting with CEI and Facility Tour (January 11, 12, and 13, 1983) at the Perry site dated March 17, 1983. As discussed above, CEI has not entirely halted construction on Perry Unit 2. Correspondence received from the Licensee indicates that work is continuing, as do CEI's internal monthly progress reports and inspections of the facility by the resident inspector and other regional staff.

² It should also be noted that in construction of a facility, a licensee proceeds at its own risk. If a licensee obtains a construction permit, the licensee bears the risk that it may expend considerable funds but never complete construction or be granted an operating license. See *Power Reactor Development Co. v. International Union of Electrical, Radio and Machine Workers*, 367 U.S. 396, 415 (1961); *Porter County Chapter of the Izaak Walton League, Inc. v. NRC*, 606 F.2d 1363, 1370 (D.C. Cir. 1979).

A slowdown in construction does not itself give rise to a reporting obligation. Under 10 C.F.R. § 50.55(b), the NRC must be informed if an extension of the completion date for a construction permit is desired. However, absent the need for such an extension, a licensee is under no obligation to notify the NRC of the status of construction. There is no required rate of completion, and a licensee is free to determine its own rate of progress as long as the date of the expiration of the construction permit is met.³ Thus, there has been no failure to provide material information to the Commission. See *Virginia Electric and Power Co.* (North Anna Power Station, Units 1 and 2), CLI-76-22, 4 NRC 480, 488-91 (1976), *aff'd sub nom. VEPCO v. NRC*, 571 F.2d 1289 (4th Cir. 1978).

Petitioner also alleges that CEI's statements to the Regional Administrator, Region III, that certain corrective actions will be completed within the year contradict CEI's public statements that no work is being done or money being spent on Unit 2, and thus constitute material false statements. The "statements to the Regional Administrator" referred to by petitioner consist of statements made in letters dated April 30, 1984, and May 1, 1984, which are included as Exhibits 5, 6 and 7 to the petition. These statements indicate that corrective work is being completed or has been completed on Governor Lube Oil Cooler relocation, tubing rework and relocation, installation of redesigned diesel generator exhaust piping/supports, and Bailey Utility Stations control modules. The "public statements" referred to by petitioner consist of the remarks made by Robert M. Ginn discussed earlier in this decision.

In a telephone conversation on November 13, 1984, with the NRR project manager, the Licensee informed the Staff that all of the corrective actions referred to by the petitioner have been completed with the exception of the installation of redesigned diesel generator exhaust piping. By letter dated June 29, 1984, CEI informed the Regional Administrator of Region III that remaining work was being rescheduled to be completed prior to pre-engine-start testing which is scheduled for early 1985. Thus, circumstances do not indicate that the Licensee has made material false statements regarding the status of corrective actions and the progress of work on Unit 2.

³ As indicated earlier, CEI voluntarily submits monthly progress reports of work being completed to the resident inspector, and the resident inspector would notify NRR if work were discontinued. NRR would then inquire as to the reasons why construction had ceased.

CONCLUSION

For the reasons stated in this Decision, I have concluded no adequate basis exists to issue an order to the Licensee regarding the Perry Unit 2 construction permit as requested by OCRE. Accordingly, the petitioner's request has been denied. A copy of this Decision will be filed with the Office of the Secretary of the Commission for the Commission's review in accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations.

James M. Taylor, Deputy Director
Office of Inspection and
Enforcement

Dated at Bethesda, Maryland,
this 15th day of November 1984.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

John G. Davis, Director

In the Matter of

(10 C.F.R. § 2.206)

SHIPMENTS OF SPENT NUCLEAR
FUEL

November 30, 1984

The Director of the Office of Nuclear Material Safety and Safeguards denies a petition filed by Mr. Lindsay Audin requesting that Certificates of Compliance for certain spent fuel shipping casks be modified to address oxidation phenomena and that additional analyses of transportation accident and sabotage scenarios be conducted.

RULES OF PRACTICE: SHOW-CAUSE PROCEEDINGS

The Director will not institute proceedings or undertake other actions in response to a petition under 10 C.F.R. § 2.206 to consider an issue the Commission is treating generically through rulemaking.

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

By letter dated July 30, 1984, Lindsay Audin, a private citizen, requested the Nuclear Regulatory Commission (NRC) to amend fourteen identified Certificates of Compliance for spent fuel shipping casks including three that were issued by the Department of Energy (DOE). The proposed amendment would require that the casks be inerted and that failed fuel be canned. The request is based on a Director's Decision under 10 C.F.R. § 2.206 (DD-84-9, 19 NRC 1087), issued on April 13, 1984, which specifically addressed oxidation phenomena for spent fuel in shipping casks and concluded that the Certificates of Compliance for

certain casks should be amended to require inerting. Further, Mr. Audin believes that present studies still do not sufficiently cover all relevant scenarios and requested that accident and sabotage computer simulations with various identified scenarios be conducted and appropriate action taken based on the results.

Notice of receipt of the request and NRC's intent to treat the request as a petition under 10 C.F.R. § 2.206 of the Commission's regulations was published in the *Federal Register* on September 7, 1984 (49 Fed. Reg. 35,446). For the reasons set forth below, I have determined that: (1) Certificates of Compliance issued by the NRC need not be further amended to consider the oxidation phenomena, (2) the NRC accident scenarios to evaluate potential impacts of transportation need not be reanalyzed, and (3) concerns about NRC sabotage scenarios will be taken into account in a rulemaking proceeding now in progress (Modification of Protection Requirements for Spent Fuel Shipments, 49 Fed. Reg. 23,867 (June 8, 1984)).

BACKGROUND

The NRC establishes safety and design standards for packages, known as Type B packaging, used to transport potentially hazardous radioactive materials, including spent reactor fuel. These standards require Type B packages to withstand conditions incident to normal transport (see 10 C.F.R. §§ 71.51(a) and 71.71) and certain hypothetical accident conditions, including impact and fire, without serious loss of containment and with only limited loss of shielding capability (see 10 C.F.R. §§ 71.51(a) and 71.73). The NRC reviews and specifically approves each Type B package design (10 C.F.R. § 71.31) to assure that the design meets applicable requirements. The approvals are issued in the form of a Certificate of Compliance for each package design. The NRC rules (10 C.F.R. Part 71) also require various procedural, administrative, and technical requirements to be followed for use of Type B packages. The NRC regulations also specify quality assurance standards under which packages must be designed, fabricated, and used and require an NRC-approved quality assurance program (10 C.F.R. § 71.101).

These standards are designed to assure that the following basic safety requirements are met when transporting radioactive materials:

1. Adequate containment of the radioactive material;
2. Adequate control of the radiation emitted by the material; and
3. Prevention of nuclear criticality.

In addition, the NRC has issued 10 C.F.R. Part 73 which provides requirements for the protection of certain radioactive materials against deliberate acts to seize, damage, or sabotage the shipments.

The NRC has conducted several studies of the environmental impacts of the transportation of radioactive materials, including spent fuel (WASH-1238, "Environmental Survey of Transportation of Radioactive Materials to and from Nuclear Power Plants," December 1972; and NUREG-0170, "Final Environmental Statement on the Transportation of Radioactive Material by Air and Other Modes," December 1977). In each study, the risk of radiological effects from the transport of spent fuel under both normal and accident conditions was found to be small.

In addition, the UO_2 fuel oxidation phenomenon and its potential impact on the transportation of irradiated power reactor fuel assemblies were further assessed in NRC Research Information Letter, "Potential Oxidation of UO_2 in Irradiated Fuel and Its Regulatory Implications," March 5, 1984 (RIL No. 139). Based on the RIL, Certificates of Compliance were revised to require that certain spent fuel cask cavities be inerted for shipment to prevent handling problems from oxidized fuel at facilities receiving spent fuel. Shipments of known or suspected failed fuel assemblies (rods) were also required to be appropriately canned for shipment, *see* DD-84-9, *supra*, 19 NRC at 1092. The increase in risk to the public health and safety from potential oxidation during transportation of spent fuel over that found in previous studies was considered in the RIL (*see* RIL No. 139, at 13-15, 19-23). It was estimated that consequences are not increased by more than a factor of 4.0 and that impact on risk was minor (<15% increase). This upper bound of increased risk was not considered significant. For example, based on 2182 spent fuel shipments/year (70% by truck and 30% by train), there is a likelihood of one latent cancer fatality in 2060 years from an extremely severe transportation accident in which oxidation occurs.

BASIS FOR DECISION TO DENY REQUEST TO AMEND CERTIFICATES OF COMPLIANCE FOR SPENT FUEL CASKS

A previous petition filed under 10 C.F.R. § 2.206 requested the NRC to take a number of actions with respect to the General Electric Company and Nuclear Assurance Corporation casks, Model Nos. IF-300, NLI-1/2, and NFS-4 (NAC-1), because of possible oxidation of spent fuel in the shipping casks. The NRC addressed the oxidation phenomena in RIL No. 139 and the Director's Decision on the earlier petition, DD-84-9, *supra*. The conditions necessary for UO_2 to achieve higher oxidation states are the presence of oxygen and sufficient heat. In address-

ing the previous petition, the Model Nos. TN-8, TN-8L, TN-9, and NLI-10/24 casks were considered in RIL No. 139. These casks are authorized for light water reactor fuel with sufficiently high decay heat such that there is a potential for UO₂ oxidation.

The petitioner believes that the previous decision (DD-84-9) is incomplete since research and submarine reactor spent fuel were not specifically considered. The NRC-certified casks identified in the present petition were not specifically addressed before because the authorized contents do not present a potential for UO₂ oxidation. There is no potential for oxidation because either (1) the physical form of the spent fuel is incompatible with oxidation or (2) under authorized shipping conditions, there is not sufficient heat to present a concern for handling problems from oxidized fuel at facilities receiving spent fuel. The petition included no new information which would raise additional concerns. For this reason, that part of the petition calling for amendment to the Certificates of Compliance issued by the NRC is denied.

BASIS FOR DECISION TO DENY REQUEST TO MODIFY SAFETY/ACCIDENT SCENARIOS AND SIMULATIONS

As noted in RIL No. 139 and DD-84-9, conditions beyond the hypothetical accident conditions of 10 C.F.R. Part 71 were considered. NRC studies cited in those documents show that the performance standards provide an adequate degree of safety. Only under highly unlikely conditions has a cask been predicted not to isolate its contents from the environment. Moreover, even in such remote and speculative circumstances, the estimated health consequences of an event are small. While the present performance standards have not been shown to cover all conditions that could be imagined, they provide adequate assurance that the health and safety of the public are protected. For these reasons, that part of the petition requesting modification of Staff scenarios and simulations is denied.

BASIS FOR DECISION NOT TO CONSIDER MODIFICATION OF SAFEGUARDS SCENARIOS AND SIMULATIONS IN CONNECTION WITH THIS REQUEST

Recently completed research indicates that interim NRC regulations to protect the public against malevolent acts directed against licensed spent fuel shipments are overly conservative. On June 8, 1984, the NRC issued a proposed rule that would moderate the interim require-

ments in 10 C.F.R. § 73.37 (49 Fed. Reg. 23,867). Public comments on the proposed rule are currently being analyzed as part of the rulemaking procedure now in process. Until a decision is taken concerning the proposed rule, the interim requirements will remain in effect.

The petitioner contends that there are material omissions or inadequacies in the supporting research. Comments similar to the safeguards-related comments in this petition are also contained in a separate letter of comment provided by the petitioner to the NRC in response to the NRC request for comment on the proposed rule. Neither the petitioner nor other sources have identified a clear and present danger to the public that suggests the need for an immediate decision on the contentions or for an immediate modification to current protection measures.

Because the petitioner's safeguards concerns will be addressed in connection with the rulemaking proceeding, they are not addressed in connection with this petition. See *Maine Yankee Atomic Power Co.* (Maine Yankee Atomic Power Station), DD-83-3, 17 NRC 327 (1983), and Director's Decisions cited therein at 329.

OTHER QUESTIONS

The petitioner raised several questions regarding DOE and Certificates of Compliance and research sponsored by that agency. Except to the extent that DOE facilities or activities of the types subject to licensing pursuant to § 202 of the Energy Reorganization Act of 1974 are involved (which are not involved here), the DOE and its prime contractors are exempt from licensing by the NRC. Questions regarding the activities of the DOE should be directed to that agency.

A copy of this Decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations. As provided in 10 C.F.R. § 2.206(c), the Decision will constitute the final action of the Commission 25 days after the date of issuance, unless the Commission on its own motion institutes review of this Decision within that time.

John G. Davis, Director
Office of Nuclear Material
Safety and Safeguards

Dated at Silver Spring, Maryland,
this 30th day of November 1984.

Denials of
Petitions for
Rulemaking

DENIALS OF PETITIONS FOR RULEMAKING

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

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

In the Matter of

Docket No. PRM-71-6

**CRITICAL MASS ENERGY
PROJECT, et al.**

November 2, 1984

The Commission denies a petition for rulemaking which requested that the Commission amend its regulations pertaining to emergency response and planning for transportation accidents involving radioactive materials. The petition is denied because the issues raised in the petition have been substantially resolved by subsequent Federal action.

DENIAL OF PETITION FOR RULEMAKING

I. BACKGROUND

By letter dated October 31, 1977, Mr. Richard P. Pollock of the Critical Mass Energy Project, on behalf of the Critical Mass Energy Project; Congressman Theodore S. Weiss; Congressman Timothy E. Wirth; the California Citizen Action Group; Community Action Research Group of Ames, Iowa; Environmental Action of Colorado; Massachusetts Public Interest Research Group; Michigan Public Interest Research Group; National Intervenors, Inc; New York Friends of the Earth; New York Public Interest Research Group; North Carolina Public Interest

Research Group; Southwest Research and Information Center; and Vermont Public Interest Research Group, filed with the NRC a petition for rulemaking to amend NRC regulations.

The petitioners requested that the NRC adopt regulations that would, at a minimum, impose the following conditions on NRC licensees:

1. The use of special routes for the transportation of radioactive materials of all types to ensure that the shipments avoid densely populated areas and mountainous terrain.
2. The adoption of emergency plans for transportation accidents involving radioactive materials, including (a) the organization of emergency response units to carry out the plans and (b) semi-annual drills with local and State law enforcement officials.
3. The assumption of financial responsibility for any shipping accident that involves the dispersal of radioactive materials.
4. The adoption of a plan for informing drivers of vehicles about the nature of the materials they are shipping and about emergency actions they should undertake in the event of an accident.

As a basis for the requested action, the petitioners stated that experts both inside and outside the Federal Government have concluded that there is a need for emergency response plans to protect the public in the event of an accident in transporting radioactive materials.

The petitioners also stated that although there has not yet been a transportation accident resulting in widespread injury to the public, the experience of the September 27, 1977, accident in southeastern Colorado shows that the present system is "wholly inadequate to deal with the risk to the public health from a transportation accident, and that regulations by the Commission are essential."

The petitioners further stated that the NRC requires nuclear power reactor licensees to adopt emergency response plans, but "there is no similar requirement for licensees of nuclear materials to be transported, even though a transportation accident would involve shippers [meaning carriers or transporters] and localities wholly unfamiliar with radioactive materials."

II. PUBLIC COMMENTS

A notice of filing of petition for rulemaking was published in the *Federal Register* on December 1, 1977 (42 Fed. Reg. 61,089). Interested persons were invited to submit written comments or suggestions concerning the petition by January 30, 1978. The NRC received forty com-

ments in response to the notice: thirty-five from industry, industrial representative organizations, and industrial associations; three from individuals; and two from governmental agencies.

A majority of the commenters (thirty-four) opposed the petition. The main reasons cited by these commenters were:

1. The petitioners failed to provide sufficient safety, environmental, or legal justifications for implementing the actions proposed.
2. The implementation of the actions proposed would be extremely costly without corresponding public benefits.
3. Consideration should be given to transportation accidents for all hazardous materials, not just radioactive materials, and therefore, the Department of Transportation is the proper agency to address the overall transportation problem.
4. The current regulatory system is adequate to protect the public health and safety and, therefore, it is unnecessary to implement the actions proposed.

Of the remaining six commenters, four suggested that the proposed actions exempt shipments containing small amounts of radioactive materials for medical, research, or industrial uses. The fifth commenter stated that the proposed actions should apply to all hazardous materials. The sixth commenter disagreed with parts of the petition but suggested that action on the petition be deferred until NUREG/CR-0743 (Transportation of Radionuclides in Urban Environs: Draft Environmental Assessment) had been completed and issued for comment. The report was published in July 1980.

III. STAFF ACTIONS

The response to the petition for rulemaking was delayed because of the following related actions: (1) after a truck accident in 1977 which resulted in a spill of yellowcake (uranium concentrate), the Department of Transportation (DOT) and the NRC conducted a special study on packaging integrity and emergency response to transportation accidents. Because the study included all four issues raised in the petition, the response to the petition was delayed pending the completion of the study. The study report was published in 1980; and (2) the DOT initiated a rulemaking proceeding on highway routing of radioactive materials in 1978. The NRC forwarded a copy of the petition and the public comments thereon to DOT for its consideration because one issue raised in the petition addressed highway routing of radioactive materials. DOT

IMAGE EVALUATION
TEST TARGET (MT-3)

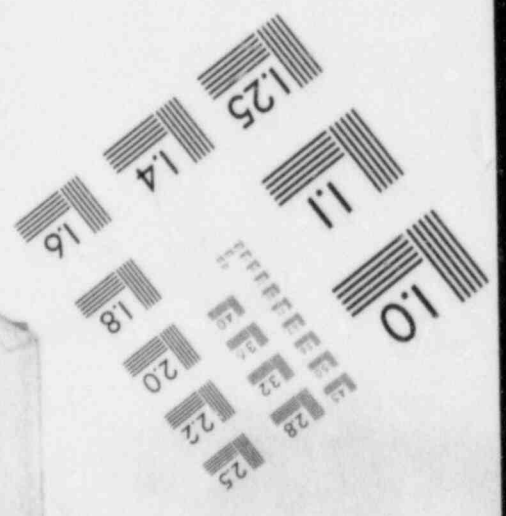
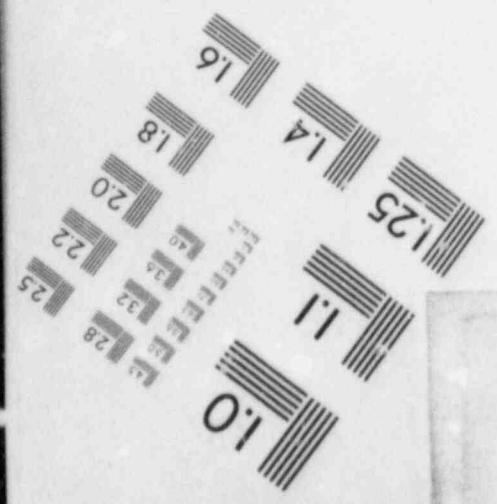
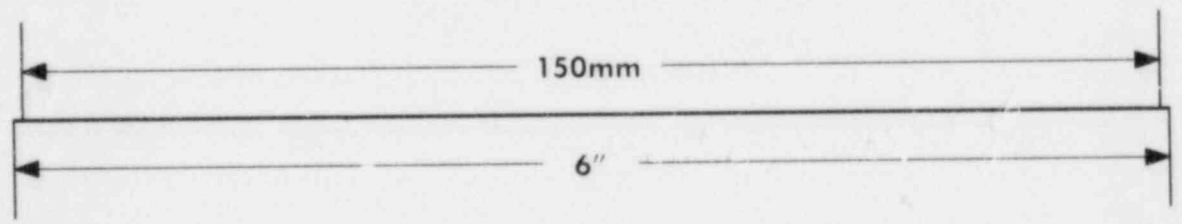
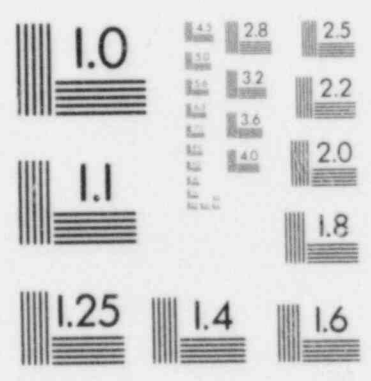
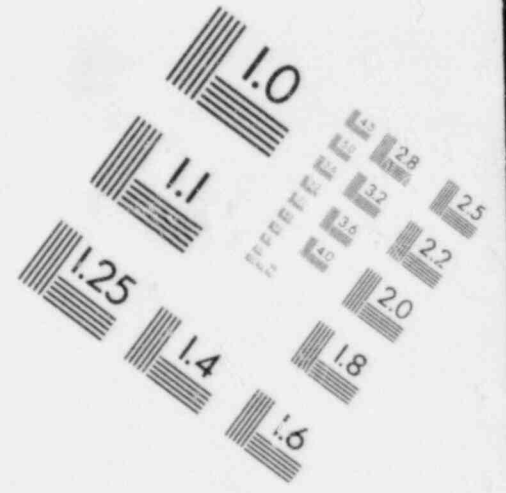
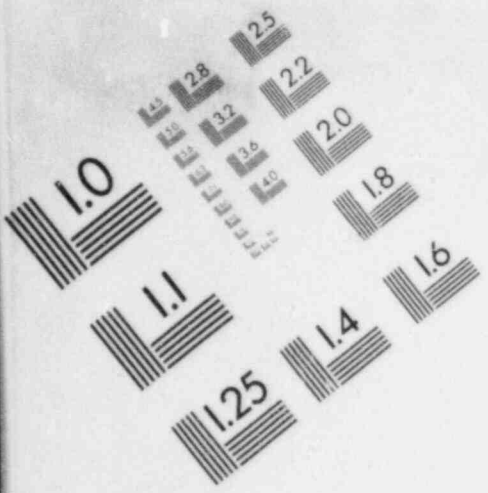
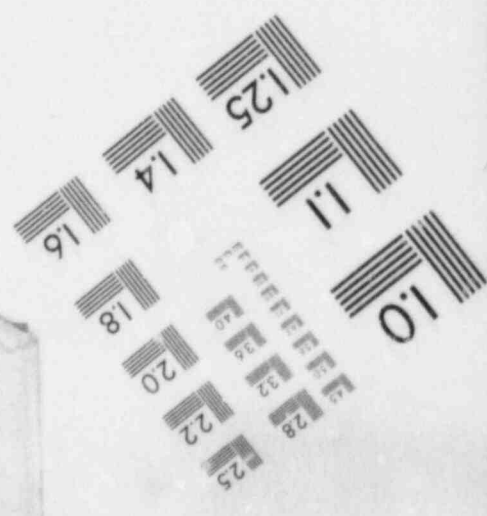
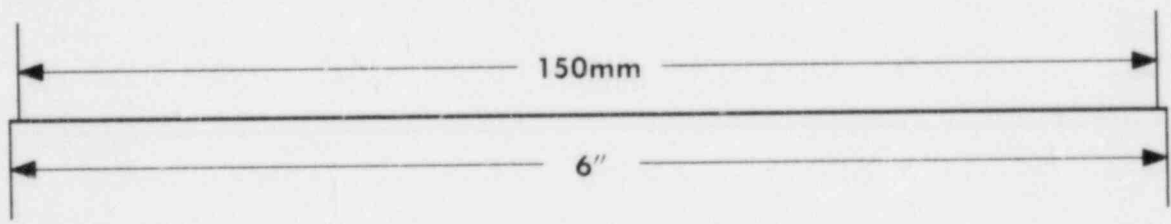
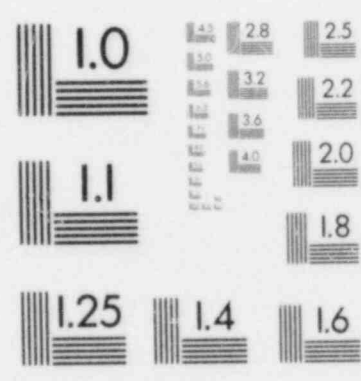
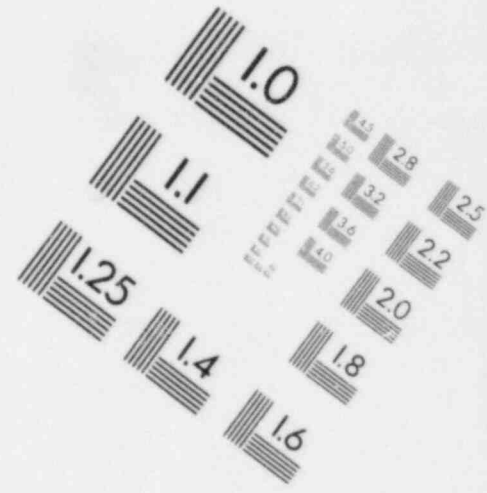
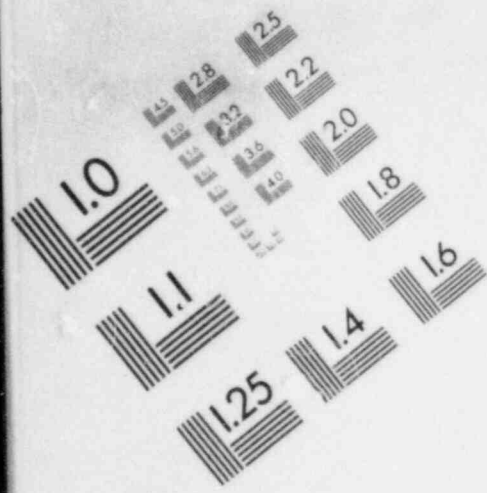


IMAGE EVALUATION
TEST TARGET (MT-3)



published its final rule in 1981, but this rule was challenged by the City and State of New York in Federal court. In February 1984, the rule was declared valid as originally promulgated. Each action is discussed below:

1. In June 1978, the NRC notified the petitioners that action on the petition would be delayed pending completion of a related NRC/DOT study on packaging requirements for yellowcake (uranium concentrate) shipments and on emergency response to transportation accidents.

This study was begun after a truck accident on September 27, 1977, near Springfield, Colorado, resulted in a spill of a large amount of yellowcake onto a highway. Members of the U.S. Congress representing the State of Colorado and other officials of that State expressed concern about the integrity of packages containing yellowcake and the emergency response to transportation accidents involving radioactive materials. Representatives of NRC and DOT met with Congressman Timothy E. Wirth at his request. As a result of the discussions, the two agencies agreed to conduct a special joint study on package integrity and emergency response to transportation accidents. The study considered, among other things, all four areas addressed by the petitioners.

The study group published a draft report for comment in April 1979. The comments received on this draft were incorporated in the final study group report, "Review and Assessment of Package Requirements (Yellowcake) and Emergency Response to Transportation Accidents" (NUREG-0535), which was published in July 1980.

2. In April 1979, the NRC notified the petitioners that a copy of the petition and the forty public comments received had been transmitted to the Materials Transportation Bureau (MTB) of the Department of Transportation (DOT). Since the first part of the petition concerned the use of special routes for highway transportation of radioactive materials, the NRC believed that the petition and the comments thereon should be considered by MTB in its rulemaking proceeding on highway routing of radioactive materials.

The MTB published an Advance Notice of Proposed Rulemaking on highway routing of radioactive materials on August 17, 1978 (43 Fed. Reg. 36,492). The notice stated that the MTB was considering promulgating routing requirements, under the authority of the Hazardous Materials Transportation Act, for highway carriers of radioactive materials. The MTB invited public comments on what Federal action would be justified. The large number of comments was reflected in the Notice of Proposed Rulemaking, published January 31, 1980, in the Federal Register (45 Fed. Reg. 7140). Public meetings on this proposed rule were held in several major cities. The final rule was published on January 19, 1981 (46 Fed. Reg. 5298), and was to become effective on February 1,

1982. (As a result of the litigation discussed below, the U.S. District Court stayed the effective date of the DOT rule until February 19, 1982.)

The final rule was challenged by the City of New York and the State of New York. On May 6, 1982, the District Court for the Southern District of New York declared invalid, in part, the highway routing regulations promulgated by the DOT. The DOT appealed the decision to the United States Court of Appeals for the Second Circuit. On August 10, 1983, the Circuit Court reversed and remanded the matter to the District Court for entry of a judgment upholding the DOT regulations. The City of New York and the State of New York then petitioned the United States Supreme Court for review of the Circuit Court's decision. On February 27, 1984, the Supreme Court denied the petition and refused to review the Circuit Court's decision. The result of the Supreme Court's action was to give validity to the DOT highway routing regulations as promulgated.

IV. REASONS FOR DENIAL

The petitioners' concerns basically relate to that portion of transportation when radioactive materials are in the care of the carriers. The Congress has authorized both the NRC and the DOT to regulate the transportation of radioactive materials. These two agencies have agreed, by Memorandum of Understanding (executed June 8, 1979), to partition their regulatory responsibilities. Generally, the DOT is responsible for regulating safety in transportation of all hazardous materials, including radioactive materials, and the NRC is responsible for review and approval of package designs for fissile materials and for other radioactive materials in quantities exceeding type A limits, as defined in 10 C.F.R. Part 1.

The NRC has considered the petition, the public comments thereon, the conclusions reached by the NRC/DOT study group, the DOT's rules on highway routing and financial responsibility, and other related information and has concluded that the issues raised in the petition have been substantively resolved by subsequent Federal action. The following discussion addresses each part of the petition.

Part 1: The use of special routes for the transportation of radioactive materials of all types to ensure that the shipments avoid densely populated areas and mountainous terrain

This issue has been considered in a rulemaking proceeding by the Department of Transportation, which is the Federal agency with jurisdiction in this matter. The Materials Transportation Bureau of the Department of Transportation has conducted a rulemaking proceeding on highway routing of radioactive material shipments. As stated above, NRC provided MTB a copy of the petition and public comments received thereon for consideration in the rulemaking proceeding. The final rule was published on January 19, 1981, and became effective on February 19, 1982. The final rule was challenged by the City of New York and the State of New York and was upheld by the Second Circuit Court of Appeals. On February 27, 1984, the U.S. Supreme Court refused to review the Circuit Court's decision. The result of the Supreme Court's action was to give validity to the DOT highway routing regulations as promulgated.

The DOT rule requires carriers to use an interstate highway or an alternate "preferred route" that minimizes radiological risk. The DOT rule was based in part on NRC advice and studies concerning transportation risks and was subject both to considerable public review and deliberation and to judicial scrutiny. The NRC does not believe it is necessary to require further restrictions beyond the DOT rule.

Part 2: The adoption of emergency plans for transportation accidents involving radioactive materials, including (a) the organization of emergency response units to carry out the plan and (b) semiannual drills with local and State law enforcement officials

The NRC considers the public health and safety to be adequately protected by current requirements for emergency response. Several organizations are involved in emergency response to transportation accidents: State and local personnel such as fire and police are responsible for emergency actions immediately following an accident; shippers are responsible for providing shipment hazard information; carriers are responsible for isolating and cleaning up the spilled radioactive materials; and certain Federal agencies are responsible for providing assistance to State and local governments. At the Federal level, the Federal Emergency Management Agency (FEMA) coordinates such Federal assistance;

the DOT and NRC provide assistance to FEMA; and the DOE maintains radiological assistance teams that respond to radiological emergencies when requested. It is not practicable or necessary to require shippers to duplicate the existing immediate emergency response capabilities to respond to the scene of a transportation accident.

The NRC/DOT study group considered the question of carrier's and shipper's emergency plans for transportation accidents. The study group found that, in general, the carrier (transporter) is responsible for proper care of cargo in transit. In an accident, the carrier is responsible for notifying the shippers and government authorities, isolating any spilled material from the public, and cleaning up any spilled material.

Since, in many cases, the carrier will have neither the technical expertise nor the experience and equipment to handle radioactive materials, the carrier may find it necessary to make arrangements with others to accomplish these duties. The carrier could make contractual arrangements with the shipper or any other organization that is capable of handling cleanup activities. However, the basic burden of ensuring that these provisions are made remains with the carrier.

Under existing DOT regulations (49 C.F.R. § 177.861), the highway carrier is responsible for promptly notifying the shipper (licensee) and the Federal Government of accidents; for isolating spilled radioactive material; and for ensuring that vehicles, buildings, areas, or equipment in which radioactive material has been spilled are not used until the radiation dose rate of any accessible surface is less than 0.5 millirem per hour and there is no significant removable radioactive contamination on the surfaces.

The shipper, on the other hand, is required by DOT regulations to comply with all applicable provisions concerning packaging, labeling, marking, and otherwise preparing the goods for transportation. For hazardous materials, the shipper is required to certify on the shipping papers that the goods are properly classified, described, packaged, marked, and labeled, and are in proper condition for transport (49 C.F.R. § 172.204). The shipper has no specific responsibilities for sending expert personnel to the accident scene but should be prepared to provide expert advice on the hazards of the shipment and any necessary precautions. However, since the shipper could be involved in a liability suit later, it may offer assistance in confining and cleaning up spills from any accident involving its shipment.

Concerning the request for semiannual drills with local and State law enforcement officials, it is impractical and probably not cost-effective to require each shipper or carrier to conduct semiannual drills with local and State personnel in localities through which the shipment might trav-

el. However, the training of local and State first-on-the-scene responders (such as law enforcement, fire-fighting, and rescue personnel) on handling transportation emergencies involving radioactive materials is important. The Department of Transportation, with assistance from other Federal agencies, including the NRC, continues to develop and update guidance and training materials for such first-on-the-scene responders. For these reasons, the NRC will not adopt the petitioners' suggestion concerning semiannual drills with local and State law enforcement officials.

Part 3: The assumption by licensees of financial responsibility for any shipping accident that involves the dispersal of radioactive materials

The NRC believes that the liability for damages should be determined by the courts considering both the applicable State tort law and the particular circumstances associated with the accident.

If the origin or destination of the radioactive material being transported were a facility (for example, a nuclear power plant) for which the NRC required the licensee to have and maintain financial protection, the provisions of the Price-Anderson Act (§ 170 of the Atomic Energy Act of 1954, as amended) would ensure a source of funds up to \$585 million for personal injury or property damage resulting from the transportation accident. The Price-Anderson Act does not preempt applicable State tort law, but in the event of an "extraordinary nuclear occurrence" a facility licensee may be required to waive certain defenses that would otherwise be available.

Section 30 of the Motor Carrier Act of 1980 (Pub. L. 96-296, as amended by § 406 of Pub. L. 97-424) requires the Secretary of Transportation, among other things, to establish regulations on minimum levels of financial responsibility for the transportation of hazardous materials by motor vehicles. The rule implementing this provision on minimum financial responsibility was published by DOT on June 11, 1981 (46 Fed. Reg. 30,974) and subsequently amended on February 7, 1983 (48 Fed. Reg. 5560), on June 28, 1983 (48 Fed. Reg. 29,699), and on July 2, 1984 (49 Fed. Reg. 27,288). For radioactive materials, the minimum levels of financial responsibility are \$1 million (\$5 million effective January 1, 1985) for any vehicle transporting large quantities of radioactive materials and \$500,000 (\$1 million effective January 1, 1985) for transporting radioactive materials in other than large quantities.

Aside from the question of ultimate financial responsibility, the carrier should be prepared to assume the initial costs required to discharge its

responsibilities in performing emergency response actions such as confining or cleaning up the spills. In terms of costs for emergency or protective actions that may be taken by the State or local governmental agencies, these agencies can reasonably be expected to be prepared to assume initial costs incurred as in other emergency situations such as fires and floods.

Part 4: A plan for informing the drivers of the vehicles about the nature of the material they are shipping and emergency actions they should undertake in the event of an accident

The NRC considers existing DOT regulations for driver information to be adequate. Present DOT regulations require that a shipment of radioactive materials be accompanied by a description of each radionuclide contained in the shipment including: the name and radioactivity of each radionuclide, the physical and chemical forms, and other information regarding labels, external radiation levels, and fissile class (49 C.F.R. § 172.203). These requirements involve a system of labels for packages, placards for vehicles, shipping paper descriptions, and other package markings.

In the final rule on highway routing of radioactive materials published by DOT in January 1981 (46 Fed. Reg. 5298), specific training requirements are mandated for persons transporting large quantities of radioactive materials. The training includes, among other things, a requirement that the driver receive training on properties and hazards of the radioactive material transported and procedures to be followed in case of accidents or other emergencies.

In view of the DOT requirements, there does not appear to be a need for NRC to require shippers to provide and carriers to maintain additional detailed emergency procedures for the driver to undertake in case of accident.

V. FINDINGS

Since each of the issues raised in the petition has been substantively resolved, the NRC has denied this petition.

For the Commission

Samuel J. Chilk,
Secretary of the Commission

Dated at Washington, D.C.,
this 2nd day of November 1984.