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 NUCLEAR REGULATORY COMMISSION

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OFFICE OF SECRETARY
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BEFORE THE COMMISSION

In the Matter of)	
)	
METROPOLITAN EDISON COMPANY)	Docket No. 50-289
)	(Restart)
(Three Mile Island Nuclear)	
Station, Unit No. 1))	

LICENSEE'S REPLY BRIEF ON REVIEW
 OF ALAB-729 AND ALAB-744

SHAW, PITTMAN, POTTS & TROWBRIDGE

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Counsel for Licensee

April 3, 1984

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NUCLEAR REGULATORY COMMISSION

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I. INTRODUCTION

By Order dated January 27, 1984, the Commission identified for review five issues relating to Metropolitan Edison Company, et al. (Three Mile Island Nuclear Station, Unit No. 1), ALAB-729, 17 N.R.C. 814 (1983), request for reconsideration denied, ALAB-744, 18 N.R.C. 743 (1983). The Commission's Order provided for the simultaneous filing of initial and reply briefs on these issues. Initial briefs were subsequently filed by Licensee, the NRC Staff, and intervenor Union of Concerned Scientists (UCS).1/

1/ Licensee's Brief on Review of ALAB-729 and ALAB-744 (March 19, 1984) (hereinafter Licensee's Brief); NRC Staff's Brief Concerning the Commission's Review of Specific Design Issues in ALAB-729 (March 19, 1984) (hereinafter Staff's Brief); and Union of Concerned Scientists' Brief on the Commission's Review of ALAB-729 (March 19, 1984) (hereinafter UCS Brief).

II. ISSUE NO. 1: ENVIRONMENTAL QUALIFICATION OF ELECTRICAL EQUIPMENT

A. The UCS Brief

In its brief, UCS does not address the environmental qualification issue that was litigated in the restart proceeding; instead, UCS defines an issue -- Licensee's compliance with GDC 4 -- that not only was not raised in the proceeding, but also is beyond the scope of the proceeding. Having defined an issue not raised in the restart proceeding, UCS declares itself the winner by default. UCS then attacks the Licensing and Appeal Boards' decisions by applying them out of context, and it accuses the Licensing Board, Appeal Board, and (prospectively) the Commission of being unfair. Finally, UCS attacks as a violation of due process the certification procedure established by the Commission.

1. UCS Misstates the Environmental Qualification Issue.

UCS' arguments on brief of this issue rely on a misperception of the matter that was litigated in the restart proceeding. The gravamen of UCS' complaint is that "[n]o party even attempted to show that TMI-1 meets GDC 4 or that all safety equipment is environmentally qualified." UCS Brief at 2. See id. at 6-7. UCS posits that in order to avoid this demonstration, "both the Licensing and Appeal Boards have sought refuge in the Commission's generic pronouncements on environmental qualification." Id. at 3. However, it is manifest that no such demonstration was called for in this proceeding.

UCS fails to perceive -- or perhaps refuses to acknowledge -- the limits that the Commission placed on the scope of the restart proceeding and hence on the Licensing Board's jurisdiction. In its Order establishing the restart proceeding, Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 N.R.C. 141, 148 (1979), the Commission defined as the subjects of the proceeding the necessity and sufficiency of short and long term actions; and the Licensing Board ruled that the scope of the restart proceeding is governed by the Commission's Order and Notice of Hearing and contentions having a reasonable nexus to the TMI-2 accident. Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), LBP-79-34, 10 N.R.C. 828, 830-32 (1979); Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), LBP-81-32, 14 N.R.C. 381, 394 (1981). See also Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), CLI-84-3, 19 N.R.C. ____, slip op. at 3-5 (March 28, 1984); Metropolitan Edison Company, et al. (Three Mile Island Nuclear Station, Unit No. 1), ALAB-705, 16 N.R.C. 1733, 1743 (1982). The scope of the environmental qualification issue that was considered by the Licensing Board must be determined in this context.

The environmental qualification contention that was originally proposed in this proceeding (UCS Contention 12) raised three particular issues relating to the adequacy of

then-existing criteria for and methods of qualifying equipment (implicitly in light of the TMI-2 accident). That contention also contained a generalized assertion that TMI-1 should not be permitted to resume operation until "all safety-related equipment has been demonstrated to be qualified to operate as required by GDC 4."2/ By making this assertion, UCS was quite clearly advancing programmatic environmental qualification as an additional short-term action whose completion was necessary for restart.3/ Given the scope of the proceeding, however, the Licensing Board's role was to determine, based on the TMI-2 accident, 1) whether stricter environmental qualification standards were necessary, and if so, 2) what those standards should be and 3) whether compliance with stricter standards should be required as a long-term action or as a short-term action.

2/ The Licensing Board ruled that the contention was "too broad in that its reference to GDC-4 would extend to structures, systems, and components without further limitation." The Board therefore limited the contention to "equipment important to safety in the containment and auxiliary building." LBP-79-34, supra, 10 N.R.C. at 837 (1979).

3/ The contention attacked the sufficiency of the environmental qualification program as a whole, and not the sufficiency of the qualification of particular pieces of equipment. (Pressurizer level instrumentation is the only equipment cited.) If the UCS contention had not been programmatic in scope, it equally clearly would have been rejected for failing the specificity requirement of 10 C.F.R. § 2.714(b). Moreover, a contention that sought to litigate the environmental qualification of each and every piece of equipment important to safety in the containment and auxiliary buildings would clearly have failed the nexus requirement. See CLI-84-3, supra, 19 N.R.C. at ____, slip op. at 7 n.5, 10 n.9 (March 28, 1984).

This approach was exactly that taken by the Licensing Board. When UCS abandoned its contention, the Licensing Board adopted part of the contention and inquired 1) whether the TMI-2 accident demonstrated that some equipment may have been exposed to environmental stresses beyond that for which they were qualified, 2) whether qualification of items grandfathered by Regulatory Guide 1.89 was necessary for restart, and 3) what were appropriate environmental qualification standards. See Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), LBP-81-59, 14 N.R.C. 1211, 1396 (1981). See also Tr. 2289, 2381-84.

It was this programmatic inquiry that was litigated in the restart proceeding, and it was this inquiry that was, to a considerable extent, overtaken by the Commission's "generic pronouncements." In light of the nexus requirement, Licensee presented considerable evidence concerning the equipment qualification implications of the TMI-2 accident, the corrective action taken as a result (to protect equipment against submergence), and the IE Bulletin 79-01B program and Licensee's progress under it.^{4/} See Licensee's Brief at 6-9. The

^{4/} Licensee's witness Braulke testified that Licensee had submitted the master list of equipment called for by IE Bulletin 79-01B, that he estimated that 95 percent of the items were documented, and that Licensee was making good progress in complying with CLI-80-21. In its brief, UCS asserts that this testimony was false, and points to the Franklin Research Center TER on TMI-1, dated November 5, 1982. UCS Brief at 3 n.1. However, as UCS is aware, the deficiencies identified in the

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Licensing Board's decision relied on this testimony.

LBP-81-59, supra, 14 N.R.C. at 1402 (1981). With respect to submergence, the Licensing Board determined two short-term actions to be completed and certified prior to restart. Id. at 1407. In addition, the Licensing Board imposed six restart conditions based on the Staff's review of equipment qualification for main feedwater transients and small-break loss-of-coolant accidents. Id. at 1404.

With respect to radiation intensity, the Licensing Board found that its concerns had been resolved by the Commission decision on Petition for Emergency and Remedial Action, CLI-80-21, 11 N.R.C. 707 (1980). In particular, the Commission's guidance in CLI-80-21 and the DOR guidelines subsumed a TMI-2 type accident. Accordingly, the Licensing Board was presented with appropriate qualification standards and found "no basis to treat TMI-1 differently." LBP-81-59, supra, 14 N.R.C. at 1403 (1981). The Licensing Board also recognized that some items would not be qualified (i.e., demonstrated to be qualified) in accordance with CLI-80-21 prior to restart;

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TER were predominantly based on uncertainty by Franklin Research Center as to whether Licensee had adequate documentation to demonstrate the qualification of the identified equipment (although Franklin had not requested documentation). Meetings were subsequently held to address these concerns. No equipment at TMI-1 was (or is) classified by the NRC in category II.b, "Equipment Not Qualified."

however, in the absence of reason to treat TMI-1 differently from other operating reactors, the Licensing Board rejected, as a necessary short-term action, demonstrated compliance with the substantive criteria of CLI-80-21 in advance of the Commission deadline. The Licensing Board found that the June 30, 1982 deadline in CLI-80-21 was a "reasonable time for compliance" and made a finding of reasonable progress. Id.

The Appeal Board's affirmation was equally consistent with the scope of the proceeding. The Appeal Board held that "[a]ll issues of environmental qualification as litigated in this case are fully embraced within the determinations announced by the Commission in CLI-80-21 and the ensuing rulemaking." ALAB-729, supra, 17 N.R.C. at 893 (1983) (emphasis added). Later the Appeal Board elaborated on its decision and stated:

[W]e rejected UCS' earlier claim that the Licensing Board was obligated to decide independently of Commission determinations whether TMI-1 can be operated safely while environmental qualification is undertaken. (We nonetheless approved a Licensing Board conclusion that there is no basis for treating TMI differently than other operating reactors. . .).

ALAB-744, supra, 18 N.R.C. at 744 (1983).

In summary, the Licensing and Appeal Boards considered evidence on the TMI-2 accident and found that the substantive criteria for environmental qualification of safety-related electrical equipment had been established generically by the Commission and were appropriate for TMI-1. In addition, the

Boards found that demonstrated compliance with these substantive criteria in advance of the Commission's generic schedule was not a necessary short-term action (i.e. need not be accomplished prior to restart). In making this last finding, the Boards properly relied on evidence demonstrating that the TMI-2 accident implications did not necessitate treating TMI-1 differently from other operating reactors in this respect. Actual, demonstrated, and completed compliance with the substantive environmental qualification criteria was simply never a matter to be proven in the restart proceeding.

UCS argues that the Licensing and Appeal Boards misapplied the Commission's generic pronouncements. UCS Brief at 3. According to UCS, the Boards improperly substituted a generic, industry-wide safety finding to resolve a plant specific issue^{5/} and ignored the Commission's charge that the June 30, 1982 deadline "do[es] not excuse a licensee from the obligation to modify or replace inadequate equipment promptly." Id. at 3-6. In fact, no one has excused Licensee from this obligation, and Licensee has replaced unqualified equipment at TMI-1.

As discussed above, UCS' argument is inapposite, because no plant specific demonstration of compliance with the

^{5/} UCS is wrong when it asserts that at the time of issuance of CLI-80-21, "[t]he Commission had not a shred of evidence before it on the status of safety equipment in TMI-1." See UCS Brief at 4. In fact, substantial information on TMI-1 had been filed by Licensee with the NRC under IE Bulletin 79-01B.

substantive provisions of CLI-80-21 was required in this proceeding. In view of the issues actually litigated and decided, the Boards' decisions are not inconsistent with a licensee's obligation to modify or replace equipment promptly. In fact, the very existence of this obligation, coupled with the Staff's interim review and responsibility to make a technical judgment regarding continued operation, supports the decision that demonstrated compliance with CLI-80-21 (or 10 C.F.R. § 50.49) is not a necessary short-term action, since it belies the necessity for immediate action. Similarly, the Commission's generic safety finding and interim procedures are inconsistent with UCS' unqualified legal assertion that all equipment must be demonstrated to be qualified prior to restart. Furthermore, the Commission's generic safety finding was not used by the Boards to authorize and justify operation of TMI-1 prior to demonstrated environmental qualification. Operation prior to demonstrated environmental qualification continues to depend on the Staff's review and technical judgment, which is to be (and has been) made outside of the restart proceeding.

Licensee also submits that even if UCS' contention had not been programmatic in scope, UCS would still have no grounds to object to the Boards' rulings. The Commission's recent policy statement suggests that to dispute the Staff's technical judgment, a petitioner in a 2.206 proceeding must present information revealing specific qualification deficiencies which would

prevent a plant from going to and maintaining a safe shutdown condition in the event of a design basis accident. Statement of Policy on Environmental Qualification, 49 Fed. Reg. 8422, 8426 (1984). To the extent such judgment may be litigated in proceedings other than a 2.206 proceeding, the same threshold showing should be required. Moreover, 10 C.F.R. § 2.714(b) requires specificity in contentions. If UCS had wished to litigate the qualification of individual pieces of equipment, it should not have abandoned its contention and should instead have alleged specific deficiencies.^{6/}

2. UCS Erroneously Asserts that Compliance with Environmental Qualification Standards and Interim Operation are Matters which Cannot be Delegated to the Staff.

In its brief, UCS argues:

Both the questions of 1) whether specific equipment is qualified and 2) if not, whether operation can nonetheless safely be permitted are fundamental matters in dispute raised by the contention. Their resolution perforce cannot be delegated to the Staff and the mechanism for their resolution, assuming it is other than a finding that the record does not support restart, must provide UCS a fair opportunity to present evidence and question witnesses presented by the other side.

^{6/} The only alleged environmental qualification deficiency to which UCS refers in its brief related (presumably) to the ability of the emergency feedwater system to withstand a high energy line break or main steam line break in the auxiliary building. This matter is clearly beyond the scope of the restart proceeding because it lacks any nexus to the TMI-2 accident, and it has now been raised by UCS in a 2.206 petition.

UCS Brief at 8.

Again, whether all safety-related equipment is qualified and whether operation can nonetheless safely be permitted were definitely not issues in this proceeding. The Boards considered only whether the implications of the TMI-2 accident necessitated imposing some environmental qualification requirement beyond those requirements already established by the Commission. While the Licensing Board imposed some restart conditions, the Boards found that no further short-term action was necessary. However, even if the Boards had determined that some additional environmental qualification requirement was necessary as a short-term action, compliance with that requirement would still not have been a matter to be litigated.

The Licensing Board was not authorized to determine completion of required actions. This function was delegated to the Director of Nuclear Reactor Regulation, to be determined outside of the litigation. CLI-79-8, supra, 10 N.R.C. at 148; Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), CLI-82-32, 16 N.R.C. 1243 (1982).

UCS' persistent refusal to acknowledge the scope of this proceeding and the matters to be decided by the Staff outside of the proceeding suggests that it believes it has a right to litigate every issue conceivably relevant to the operation of TMI-1.^{7/} In direct contradiction to the UCS viewpoint is the

^{7/} Compare CLI-84-3, supra, 19 N.R.C. ____, slip op. at 9 (March 28, 1984).

D.C. Circuit's recent opinion, Bellotti v. NRC, No. 82-1932, slip op. (D.C. Cir. September 23, 1983). In that opinion, the D.C. Circuit held that the Commission has the authority to define the scope of an enforcement proceeding. The Commission may reserve issues for decision by the Staff outside of the adjudication. In Bellotti, the court found that the Commission's decision limiting the scope of an enforcement proceeding was made pursuant to a rational policy "directing agency resources toward the inspection rather than the adjudication." Id. at 5.

For the same reason, UCS' attack on the certification procedures misses the mark. UCS cites Seacoast Anti-Pollution League v. Costle, 572 F.2d 872 (1st Cir. 1978), for the proposition that "a decision must be made on the 'basis of the record after fair opportunity for exploration of the facts by the parties.'" UCS Brief at 7. That case does not foreclose an agency from considering facts not in the record to decide a collateral matter that was reserved for decision by its staff. UCS also cites several inapplicable cases on separation of functions. UCS Brief at 8. Again, this doctrine does not prevent a staff member who participated in a proceeding from advising an agency on matters reserved for the staff's decision outside of the proceeding.^{8/}

^{8/} UCS also cites 5 U.S.C. § 554(d). Section 5(c) of the Administrative Procedures Act, 5 U.S.C. § 554(d) (1982), entitled Separation of Functions, only prohibits consultation on a "fact in issue" unless on notice and opportunity for all parties to

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3. The Boards and the Commission Have
Not Abdicated Responsibility.

A persistent theme throughout the UCS brief on the environmental qualification issue is that the Boards and the Commission are shirking their duty. UCS describes the procedural posture of this issue as "the muddle of buck-passing that has characterized the NRC's tortuous evasion of the question posed by UCS" and as a "shell game," and implies that "the Commission may avoid grappling with the substance of the serious safety and policy questions presented by manipulating the scope of the hearing to exclude them." UCS Brief at 1, 6. Nothing could be further from the truth.

Far from abdicating responsibility, the Commission has adopted new and more stringent environmental qualification standards and has set about implementing those standards. See Statement of Policy on Environmental Qualification, 49 Fed. Reg. 8422, 8425 (1984). The Commission established precise procedures for evaluating interim operation. In CLI-80-21, the Commission directed the Staff to make a technical judgment regarding continued operation in cases where existing

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participate; it specifically exempts the members comprising the agency from its proscriptions; and it applies only to adjudications required by statute to be on the record.

documentation raised questions about the ability of equipment to perform its intended function. This judgment was to be made publicly available, and the Commission provided that:

. . . If any interested person reviews the staff's written judgment on qualification and desires a hearing, that person may petition the Commission pursuant to 10 C.F.R. 2.202 and 10 C.F.R. 2.206.

CLI-80-21, supra, 11 N.R.C. at 715 (1980).

The Commission also established the restart proceeding to address specific issues arising from the TMI-2 accident. But the scope of the restart proceeding was limited, and certain matters were reserved for decision by the Staff. The Commission surely did not intend the restart proceeding, which was initiated in 1979 with an expected duration of one year, to be a forum for assessing TMI-1 compliance with the overall equipment qualification program which arose prior to the TMI-2 accident. Clearly, the Commission never intended the Licensing Board to replicate the Staff's review program or to usurp its delegated responsibility. The restart proceeding followed the summary suspension of the TMI-1 license,^{9/} and a limited

^{9/} The Administrative Procedure Act provides a licensee a right of notice and opportunity to achieve compliance prior to license suspension, but a temporary immediately-effective suspension may be ordered if the public health, safety, or interest so dictates. 5 U.S.C. § 558(c); 10 C.F.R. 2.202(f). The Commission has stressed that summary administrative action is a "drastic procedure." Consumers Power Company (Midland Plant, Units 1 and 2), CLI-73-38, 6 A.E.C. 1082, 1083 (1973).

proceeding with a well-defined, focused scope was essential. Nevertheless, UCS has ignored both the scope of the restart proceeding and the appropriate 2.206 forum for challenging specific environmental qualification deficiencies, and now accuses the Commission of being unfair.

B. The Staff's Brief

Licensee agrees with the Staff's conclusion as to the correctness of the Licensing and Appeal Boards' decisions. See Staff's Brief at 3-9. Licensee disagrees, however, with the Staff's statement of what the proper scope of the contention is if the issue of environmental qualification has not been removed from the proceeding.

The Staff states that the issue is:

Whether the safety-related electrical equipment at TMI-1 must be environmentally qualified in accordance with the requirements of 10 C.F.R. § 50.49 prior to restart, and if so, whether such equipment is qualified or, if qualification in accordance with those requirements is not complete for certain equipment prior to restart, whether Licensee has provided an adequate justification to permit operation of TMI-1 until the qualification of such certain equipment is complete. The equipment covered by this issue is the equipment defined by 10 C.F.R. § 50.49 to be within the scope of that rule. The standards (qualification criteria) which the equipment must meet in order to be found environmentally qualified are, as allowed by 10 C.F.R. § 50.49, either the DOR Guidelines or NUREG-0588.

Staff Brief at 9. In support of this formulation, the Staff adds, "there appears to be no valid reason why the proper scope of the contention should be any broader than the scope of the generic rule resulting from CLI-80-21." Id. at 10.

While Licensee agrees that the scope could be no broader, we submit that it cannot be so broad. In its struggle with the Commission's hypothetical question, the Staff appears to disregard the scope of the restart proceeding. The contention was properly limited to the containment and auxiliary buildings,^{10/} and any contention must be specific and have a reasonable nexus to the TMI-2 accident. As discussed above, the restart proceeding was a proceeding of limited scope to address expeditiously the necessity and sufficiency of certain actions relating to the TMI-2 accident. The proceeding was not designed to be a forum to relitigate the TMI-1 operating license, or the overall safety of TMI-1. CLI-84-3, supra, 19 N.R.C. at _____, slip op. at 9 (March 28, 1984).

^{10/} The Licensing Board also indicated, when it raised its Board questions, that it was not particularly interested in the auxiliary building. Tr. 2382.

C. Conclusion

In essence, a fairly specific issue was raised and litigated -- whether the implications of the TMI-2 accident necessitated some environmental qualification measures in excess of those normally required by the Commission. The Commission's requirements, however, were modified and improved during the proceeding, and, as augmented by the restart conditions imposed, the changes eliminated the Licensing Board's concerns. Accordingly, based on the new environmental qualification standards and the evidence regarding the implications of the TMI-2 accident, the Licensing Board found no basis to impose additional measures. The Appeal Board correctly affirmed this determination.

III. ISSUE NO. 2: EMERGENCY FEEDWATER SYSTEM RELIABILITY

Licensee will not repeat here the thorough recitation of the evidentiary record provided in its initial brief. The UCS brief on Emergency Feedwater (EFW) System reliability mischaracterizes that evidentiary record,^{11/} fails to rehabilitate the Licensing Board's

^{11/} For example, in its opening argument on the importance of the EFW system, UCS quotes extensively from a memorandum written by AEOD staff. UCS states that it offered this document into evidence in the Appeal Board's reopened hearings on decay heat removal, but that the objections of Licensee and the Staff were sustained. UCS Brief at 10 n.7. First, UCS did not offer

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quantitative reliability analysis, does not challenge the finding of the Licensing and Appeal Boards that the EFW system is safety grade for events within the scope of this proceeding, and ventures outside of the matters specified by the Commission for review.

A. UCS Has Not Shown That the Appeal Board Erred in its Treatment of the Licensing Board's Quantitative Analysis of EFW System Reliability.

The Commission set for review the question of whether the Appeal Board erred in its treatment of the Licensing Board's quantitative analysis of the reliability of the EFW system at TMI-1. Commission Order at 2 (Jan. 27, 1984). The Appeal Board rejected that analysis, a conclusion UCS characterizes as unjustified. See UCS Brief at 18. Nevertheless, UCS also attacks the Licensing Board's analysis:

As the Appeal Board observed, the Licensing Board multiplied the following two values to obtain its estimate of the failure probability per demand of the EFW system: (1) the Staff's estimate of failure probability of the system (as

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the document into evidence. Second, the Appeal Board sustained objections to UCS use of the document in cross-examination of Staff witness Ornstein because the witness was there to testify on feed and bleed cooling and the memorandum, on its face, was an AEOD analysis of EFW pump arrangement at the Ft. Calhoun facility. See R. Tr. 766-770.

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CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Reply Brief on Review of ALAB-729 and ALAB-744" and "Notice of Appearance" of David R. Lewis were served this 3rd day of April, 1984, by deposit in the U.S. mail, first class, postage prepaid, upon the parties on the attached Service List.

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BEFORE THE COMMISSION

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ultimately modified) in preventing steam generator dryout; and (2) a failure rate for the main feedwater system based upon experience at five B&W plants. ALAB-729, supra, 17 N.R.C. at 831 (1983). UCS now attacks the Staff estimate, on which the Licensing Board relied, as generous to TMI-1, and argues that the failure rate is in fact higher than indicated by the Staff.^{12/} The Licensing Board, on the other hand, found the Staff's estimate to be conservative. LBP-81-59, supra, 14 N.R.C. at 1369 (1981).

The focus of this new attack on the Staff's estimate is the treatment given to diesel generator reliability. First, any error in the Staff's assumption on the availability of diesel generators would be common to its EFW system reviews for other plants and thus would not alter the comparison of EFW systems among plants. See Tr. 16,971 (Curry). Second, it was not error for the Licensing Board to decline to take official notice of different failure rate data for diesel generators. The UCS written motion requesting such relief was filed with the Licensing Board on May 20, 1981 -- after the witnesses on EFW reliability had been excused and the hearing on design issues was nearly concluded.^{13/} The unfairness of amending the

^{12/} UCS did not attack, on appeal, either the Staff's estimate or the Licensing Board's reliance upon it. See Union of Concerned Scientists' Brief on Exceptions to the Partial Initial Decision of December 14, 1981, at 103-110 (Exceptions 103-109), April 14, 1982. Compare UCS Brief at 14 (also raising for the first time purported Licensing Board error in denying an official notice request by UCS).

^{13/} Proposed findings of fact on EFW system reliability were filed with the Licensing Board on June 12, 1981.

record by official notice at the last minute -- when over seven evidentiary hearing days, with attendant opportunity for all to confront the evidence, had been previously devoted to Board Question 6 -- is patently obvious.^{14/}

UCS also attempts, in vain, to discredit the uncontroverted evidence, by witnesses for both Licensee and the Staff, showing that the Staff's estimates should not have been used in the manner in which the Licensing Board ultimately used them. The "failure" rates recited in the UCS Brief, and branded "intolerable," are in fact no such thing. See UCS Brief at 12-14. The mission success criterion used by the Staff, to make its analysis consistent with those done for Westinghouse plants, was avoidance of steam generator dryout. As the Appeal Board properly held, ". . . the failure of the EFW system to prevent steam generator dryout cannot be equated with a total failure of the EFW system to perform its function." ALAB-729, supra, 17 N.R.C. at 833 (1983) (footnote omitted).

^{14/} In addition, Licensee's objections were not general. Cf. UCS Brief at 15. The subject data do not represent facts or even actual failure rates. They are instead mathematical assessments of the future probability of failure made by the authors of WASH-1400, who do not fully explain the source data on which their predictions are based. To the extent that the source data was based on nuclear power plant experience, however, it would appear that the data included only a single year of operating reactor experience. Licensee's Response to UCS' Request to Take Official Notice, May 21, 1981. In any case, these were not the type of indisputable facts for which official notice may be appropriate.

As the Appeal Board found, the five-minute success criterion did not permit consideration of operator actions to re-establish feedwater flow. Based upon the uncontroverted evidence, the Appeal Board found that improved operator procedures would result in improved actions and better EFW reliability. Id. at 832-833. In addition, the operators have improved control room instrumentation to indicate the status of the system. LBP-81-59, supra, 14 N.R.C. at 1362-63 (1981). Ignoring Licensee's testimony, UCS attacks a Staff witness' testimony on this score as "sheer speculation" solely because he had not personally reviewed plant procedures and operator training. See UCS Brief at 16. It was not necessary for Mr. Wermeil to duplicate the reviews of other Staff members, which are well documented in the various Safety Evaluation Reports on which he was entitled to rely.^{15/} The record shows that Mr. Wermeil was intimately familiar with the equipment and procedural improvements for EFW systems instituted by the NRC after the TMI-2 accident. See Wermeil and Curry, ff. Tr. 16,718, at 1-30; Tr. 16,719 (Wermeil). While UCS employs specious grounds to challenge this one Staff opinion, the record is clear that operational errors that might affect the functioning of the EFW system have been evaluated, and procedural changes, coupled

^{15/} See, e.g., Staff Ex. 1 at C1-1 through C1-12; C2-6, 7; C8-34 through C8-40.

with operator training, have been instituted to assure proper surveillance and operation of the system. Capodanno et al., ff. Tr. 5642, at 4; Wermeil et al., ff. Tr. 6035, at 3.

UCS cites a 1979 B&W analysis of the TMI-1 EFW system as evidence indicating that a different mission success criterion would not have resulted in great improvement to calculated EFW reliability. This is so, according to UCS, because "in no case were the reliability estimates as high as the best Westinghouse reliabilities."^{16/} UCS Brief at 17. In fact, that analysis, while not intended to establish a numerical reliability for the TMI-1 EFW system, found that it fell in the mid-range of Westinghouse and Combustion Engineering plants. Tr. 5948, 5984-85 (Capodanno); Tr. 6157-59 (Wermeil). UCS fails to observe, however, that the B&W study addressed the EFW system as it existed in mid-1979. Not only have substantial improvements been made since that time, but subsequent analysis has shown that only one electric driven EFW pump, not the two assumed then, is needed for successful heat removal. Wermeil and Curry, ff. Tr. 16,712, at 38.

Finally, UCS challenges the Appeal Board's rejection of the EFW challenge rate assumed by the Licensing Board. UCS

^{16/} It is not necessary, however, to have the best EFW system. See Sacramento Municipal Utility District (Rancho Seco Nuclear Generating Station), ALAB-746, 18 N.R.C. 749, 753-54 (1983) (auxiliary feedwater system of low to medium reliability compared to other plants).

boldly states that "[t]here was no evidence introduced at all to indicate that TMI-1 would be significantly different within the uncertainty inherent in a quantitative analysis." UCS Brief at 17. In fact, the evidence directly applicable to this plant shows that there have been no loss of main feedwater events at TMI-1. ALAB-729, supra, 17 N.R.C. at 832 n.42 (1983).

B. UCS Does Not Challenge the Findings that the EFW System Meets Safety-Grade Design Criteria.

Leaving the quantitative analyses, Licensee, UCS and the Staff, in their initial briefs, turn to the Commission's deterministic design criteria.^{17/} The Licensing and Appeal Boards found that the TMI-1 EFW system at restart will be safety grade for main feedwater transients and small-break loss-of-coolant accidents. LBP-81-59, supra, 14 N.R.C. at 1372; ALAB-729, supra, 17 N.R.C. at 831 (1983). These are the classes of events considered to have a reasonable nexus to the TMI-2 accident and to be, therefore, within the scope of this

^{17/} UCS implies that the Staff's quantitative assessment was the sole basis for its conclusion that the EFW system is sufficiently reliable for restart of TMI-1. See UCS Brief at 13. In fact, the Staff performed and presented its analysis only in response to the requests of the Licensing Board. Tr. 16,740 (Curry). The Staff's conclusion is based upon its review and evaluation of the requirements and of Licensee's compliance with the requirements in terms of the resultant hardware, procedural and technical specification changes. Wermeil and Curry, ff. Tr. 16,718, at 12.

proceeding. See CLI-84-3, supra, 19 N.R.C. __, slip op. at 5 (March 28, 1984).

Licensee and the Staff have argued that these findings provide adequate support and rationale for concluding that the TMI-1 EFW system is reliable. Licensee's Brief at 43; Staff's Brief at 20. UCS simply ignores these findings by the Boards and the defined scope of the proceeding to argue the seismic qualification of the EFW system^{18/} and its environmental qualification for events outside the scope of this proceeding.^{19/} See UCS Brief at 18-19. Consequently, UCS has conceded that, for purposes of this proceeding, the boards below correctly concluded that the EFW system is safety-grade, which is the standard UCS itself proposes.

C. Other Issues on Decay Heat Removal Capability are Outside the Matters Specified for Review.

The Appeal Board conducted a four-day reopened hearing on decay heat removal and devoted a considerable portion of its decision to that broad subject. The Appeal Board's decision

^{18/} UCS here expressly ignores the Commission's previous holding that the seismic qualification of the EFW system is outside the scope of the restart proceeding. See Metropolitan Edison Company, et al. (Three Mile Island Nuclear Station, Unit No. 1), CLI-83-5, 17 N.R.C. 331 (1983).

^{19/} UCS apparently recognizes that these issues are not covered by the restart proceeding, since it has filed a petition seeking a separate show cause proceeding under 10 C.F.R. § 2.206 on these very matters.

addressed EFW system reliability and liquid natural circulation, including use of the high-point vents, use of the pressurizer heaters to control reactor coolant system pressure, the boiler-condenser process, and feed-and-bleed cooling.

ALAB-729, supra, 17 N.R.C. at 829-855 (1983). While UCS sought Commission review of a number of the Appeal Board's findings in this area, the Commission took review only of the "specific issues in ALAB-729" set forth in the Commission's Order of January 27, 1984.

Consistently unable to address itself to the issues specified by presiding adjudicatory bodies, UCS leaves the question of EFW system reliability and wanders into a simplistic and distorted discussion of other decay heat removal issues such as feed-and-bleed cooling and the boiler-condenser process. UCS Brief at 19-23. These matters are not conceivably encompassed by the second issue specified in the Commission's Order initiating and defining review. Consequently, the Commission should not address these UCS arguments.20/

20/ Licensee addressed these arguments before the Appeal Board in its ". . . Brief on the Reopened Hearing (Design Issues)," dated April 12, 1983.

IV. ISSUE NO. 3: PORV USAGE DURING LOW
TEMPERATURE OPERATION AND INADEQUATE
CORE COOLING CONDITIONS

A. Application of the Nexus Standard

UCS argues that the Appeal Board ruling that the subject uses of the PORV are outside the scope of the proceeding is "preposterous." UCS incorporates, by way of support, its August 30, 1983 response to the Commission's Order of August 5, 1983 on ALAB-724. UCS Brief at 24.

Licensee and the Staff questioned the Appeal Board's ruling on use of the PORV during inadequate core cooling conditions, but endorsed the Appeal Board's view that PORV usage during low temperature operation does not have a reasonable nexus to the TMI-2 accident. Licensee's Brief at 47 n.32; Staff's Brief at 22-23, 25.

Since the initial briefs were filed, the Commission issued a Memorandum and Order on its review of ALAB-724. Addressing UCS Contention 5, which concerned whether the PORV should be safety-grade, the Commission held that in determining jurisdiction here the issue in each instance is whether the postulated scenario involving potential PORV usage has a reasonable nexus to the TMI-2 accident. CLI-84-3, supra, 19 N.R.C. ___, slip op. at 11 (March 28, 1984). This holding by the Commission supports the positions taken by Licensee and the Staff on the subject Appeal Board rulings in ALAB-729.

The holding by the Appeal Board on use of the PORV during inadequate core cooling conditions represents harmless error, however, since the arguments and evidence presented were evaluated, as they were in the case of low temperature operations. In both instances, the Licensing and Appeal Boards concluded that potential use of the PORV during low temperature operation and inadequate core cooling conditions did not warrant upgrading the PORV to safety grade. LBP-81-59, supra, 14 N.R.C. at 1281-82 (1981); ALAB-729, 17 N.R.C. at 864-65 (1983).

B. Criteria to be Applied in Determining Whether the PORV Should be Safety Grade

UCS asserts that the Appeal Board's resolution of the PORV issue enshrines a faulty standard for determining if a structure, system or component should be required to meet safety-grade design criteria.^{21/} UCS Brief at 31. UCS calls the Appeal Board's position (which upheld the Licensing Board) an "extremely dangerous precedent" "at odds with NRC rules." Id.

In response to UCS Contention 14, the Appeal Board endorsed the Licensing Board's conclusion that "not all equipment that may play some safety role at a plant need meet

^{21/} The UCS characterization of the Appeal Board's standard, however, bears no relationship to the standard actually applied. Compare UCS Brief at 31 with ALAB-729, supra, 17 N.R.C. at 861 (1983).

safety-grade criteria." ALAB-729, supra, 17 N.R.C. at 875 (1983). Safety-grade structures, systems and components are those relied upon to meet critical safety functions, such as those identified in 10 C.F.R. Part 100. Id. In short, the PORV need not be safety-grade if it is not relied upon (i.e., required) to meet critical safety functions.

The Commission has not undertaken review of the Appeal Board's findings on system classification, which were applied to the PORV and other systems/components raised in more specific UCS contentions.

C. Low Temperature Operations

UCS employs reasoning by inference and incomplete hypotheticals in an attempt to piece together an argument (the evidence does not exist) that the PORV is required to perform a critical safety function in the prevention of overpressurization during low temperature operation. UCS never establishes that ". . . under some plant conditions, the only way to limit overpressure is by use of the PORV."^{22/} UCS Brief at 26.

^{22/} In support of this statement, UCS cites the statement of its witness that if the operator cannot protect against the overpressurization, then the PORV would be used. Tr. 9033 (Pollard). This only supports Licensee's position, however, that the PORV is merely a back-up to operator action.

UCS hypothesized, during cross-examination of Licensee witness Jones, that the plant is in a cold shutdown condition without a bubble in the pressurizer -- i.e., the primary system is solid. UCS never proved, however, that the plant would be operated "solid" while in a cold shutdown condition. In spite of repeated admonitions by Mr. Jones that he was not sufficiently familiar with conditions under which the plant is allowed to operate in a solid condition, Tr. 8977-79, UCS cites his testimony for the proposition that the operator does not have time to act if the primary system is solid. UCS Brief at 26. What Mr. Jones actually said is that the operator probably does not have 10 minutes in which to act. Tr. 8976 (Jones). The matter was not explored further and UCS failed to establish the validity of its scenario or the inadequacy of operator action. Certainly, there is no basis here to warrant a major structural modification of the PORV.23/

23/ In its brief, the Staff endorses the Licensing and Appeal Board conclusions that the PORV serves as a back-up to operator action for mitigation of a low temperature overpressurization event. Staff, however, Brief at 24 n.17. The Staff now prefers a different rationale in support of that conclusion. While Licensee agrees with the merits of the Staff's new rationale, based upon PTS analyses performed since the hearing, the Staff does not show that the evidentiary record relied upon by the Boards is in error. See id. at 23-24.

D. Inadequate Core Cooling Conditions

Based upon its own interpretation of TMI-1 plant emergency procedures, and not that of any witness, UCS argues that depressurization using the steam generators during inadequate core cooling conditions is not an independent method of depressurization from use of the PORV. UCS Brief at 28, 29. While the procedures advise the operators to use the PORV to optimize reactor coolant system pressure control,^{24/} this use is not required. In short, use of the PORV may be helpful, but it is not required and the steam generators can depressurize the system during inadequate core cooling conditions. See LBP-81-59, supra, 14 N.R.C. at 1282 (1981) (procedures have been developed for coping with inadequate core cooling conditions without dependence on the PORV); ALAB-729, supra, 17 N.R.C. at 865 (1983) (use of the PORV is not the only method available to depressurize the primary system).

However, even if the PORV were assumed to be necessary during some inadequate core cooling conditions, it need not be made safety-grade for this purpose since it is acceptable to use non-safety-grade systems and components to mitigate events beyond the design basis. The fact that the NRC has exercised

^{24/} The newly installed high-point vents would also help to relieve steam. See ALAB-729, supra, 17 N.R.C. at 838 n.74 (1983).

prudence and addressed events beyond the design basis for some purposes -- e.g., emergency response preparedness, operator training and procedures, post-accident in-plant shielding, instrumentation to detect inadequate core cooling and high-point vents -- does not mean that all plant structures, systems and components must be redesigned and modified to meet an entirely new (and potentially unlimited) spectrum of accident sequences not previously considered credible for the purpose of determining the plant's design basis.^{25/} Cf. UCS Brief at 29-31. The Licensing Board specifically inquired into the general question of the scope of the plant's design basis and, in a finding which UCS did not appeal, held that the Staff has demonstrated that its methods for determining which accident sequences are credible for the purposes of determining the plant's design basis are reasonable. LBP-81-59, supra, 14 N.R.C. at 1395 (1981).

While it is prudent, in training and procedures, to provide the operator with the option of using any available equipment to mitigate inadequate core cooling conditions, including the PORV, this potential use in events beyond the plant design

^{25/} See 10 C.F.R. § 50.2(u) for the definition of "design bases." According to the Licensing Board: "The design basis is the set of prescribed anticipated operational occurrences and accidents used to assess the way specific systems respond to upset conditions." LBP-81-59, supra, 14 N.R.C. at 1382 (1981).

basis does not warrant a requirement that the PORV be safety grade. Licensee's Brief at 46.

E. Conclusion

The evidentiary record demonstrates that the PORV at TMI-1 need not be safety grade for its potential use during low temperature operations and inadequate core cooling conditions. In addition, Licensee notes that the pressurizer PORV and its block valve are not designed to meet safety-grade design criteria at other operating pressurized water reactors. UCS acknowledges that its Contention 5 applies generally to all PWRs, and its witness proposed that they all be shut down to accomplish the requisite design upgrade. Tr. 9050 (Pollard). While the generic nature of the issue does not compel a particular resolution, Licensee merely notes here that there is nothing unique about the TMI-1 design which would warrant special enforcement action with respect to the PORV.

V. ISSUE NO. 4: SYSTEMS INTERACTION

The UCS Brief on the fourth issue on which the Commission has taken review -- the adequacy of addressing the need for a systems interaction study for TMI-1 in the long-term in the Staff's generic program -- centers almost exclusively on the issue of whether non-safety systems or components are required to be upgraded to safety-grade. This issue was the subject of

UCS Contention 14 and, as discussed below, was addressed fully by both the Appeal Board and the Licensing Board.^{26/} See LBP-81-59, supra, 14 N.R.C. at 134-49 (1981); ALAB-729, supra, 17 N.R.C. at 877-881 (1983). UCS fails to address the factual basis for the Appeal Board decision: absent a determination of the need for and an approved Staff methodology for conducting systems interaction studies, it would be premature, and potentially counterproductive, to require the performance of such a study at TMI-1. ALAB-729, supra, 17 N.R.C. at 884 (1983). In denigrating the Appeal Board's finding of reasonable progress by the Staff in moving towards a resolution of the systems interaction issue (UCS Brief at 33), UCS also ignores the Staff's recent Task Action Plan for resolution of this generic unresolved safety issue. See Licensee's Brief at 49-50. Nor has UCS even intimated that any special circumstances exist at TMI-1 which would make the Staff's generic resolution or its justification for continued operation of other operating reactors inapplicable to TMI-1. Cf. Metropolitan Edison Company, et al. (Three Mile Island Nuclear Station, Unit 1), CLI-81-3, 13 N.R.C. 291, 295-96 (1981).

UCS' entire argument that systems interaction has been inadequately addressed hinges upon its perception that there

^{26/} UCS did not petition the Commission to review the Appeal Board's decision on this contention, nor has the Commission opted to review this subject sua sponte.

exist unspecified non-safety-grade systems which require upgrading to safety-grade,^{27/} and that the Staff has not performed sufficient analysis to identify these non-safety systems. UCS Brief at 33-36. This, of course, was the core issue raised by UCS in its Contention 14 which called for upgrading to safety-grade all systems and components which can either cause or aggravate, or be used to mitigate, an accident. See LBP-81-59, supra, 14 N.R.C. at 1340-41, 1347 (1981). The Licensing Board disagreed with this UCS assertion, concluding

that nonsafety systems which can directly or indirectly affect core reactivity and primary coolant temperature, pressure, and flow need not be upgraded to meet safety-grade criteria except if the failure or off-normal operation of the nonsafety system by itself without failures of safety-grade systems will cause core degradation.

Id. at 1348: The Licensing Board also found that a nonsafety system or component which might be used for accident mitigation need not be upgraded all the way to safety-grade (if, indeed, upgrading is needed at all), but that incremental improvements can be made depending on the varying degrees of importance to safety. Id. at 1349. In reaching these findings, the Licensing Board stated that no evidence had been presented that there

^{27/} In its discussion of the systems interaction issue, the Appeal Board rejected UCS' argument that no steps had been taken to address this problem, noting that upgrades to the PORV and EFW system had been required by the Staff as a direct result of the lessons learned from the TMI-2 accident. ALAB-729, supra, 17 N.R.C. at 883 (1983).

are "specific nonsafety systems at TMI-1 lurking and poised to cause, by themselves, core damage" and that it was "improbable" that there were serious, but unidentified, existing systems interactions. Id. at 1347.

UCS raised these same arguments on appeal. The Appeal Board found no basis upon which to upset the Licensing Board decision, further noting that "[w]hen directed by UCS to specific nonsafety systems that were potential hazards, the [Licensing] Board carefully examined the interaction of those systems with the safety systems." ALAB-729, supra, 17 N.R.C. at 877 (1983) (footnote omitted).^{28/} The Appeal Board also rejected UCS' claim that the Staff had not performed sufficient analyses to determine the increased reliability obtained by partial upgrades, stating that "the need for upgrading of particular components . . . is addressed in great detail elsewhere in the record. In addition, the sufficiency of the long and short term restart requirements (including upgrading) was the subject of Licensing Board Question 2." Id. at 878 (footnotes omitted). Thus, UCS' arguments on the issue of upgrading non-safety-grade equipment were fully considered on the record. UCS has raised no evidence, not previously considered, which

^{28/} See also CLI-84-3, supra, 19 N.R.C. ____, slip op. at 10 n. 9 (March 28, 1984), holding that UCS Contention 14 could not be used to litigate whether each piece of equipment in the plant needed to be safety-grade; i.e., only specific equipment having a nexus to the accident could be considered.

would require the performance of a systems interaction study of TMI-1 in order to identify additional non-safety systems that are required to be upgraded to safety-grade.^{29/}

VI. ISSUE NO. 5: MAIN STEAM LINE
RUPTURE DETECTION SYSTEM

The Commission has taken review of whether the Licensing Board erred in delegating to the Staff the responsibility for approving Licensee's solution to the potential for isolation of all feedwater flow to both steam generators due to actuation of the main steam line rupture detection system (MSLRDS). The Staff's brief on this issue takes the position that, while approval of Licensee's proposal was properly delegated to the Staff, the Licensing Board may have improperly delegated to the Staff the responsibility for making a reasonable progress determination on this issue. See Staff Brief at 32-33. For the reasons set forth below, Licensee disagrees with the Staff's interpretation.

The Commission's Order setting out the scope and procedures to be followed in the restart proceeding delineated the findings which would be required prior to a lifting of the

^{29/} In this regard, Licensee would again point out that a PRA of TMI-1 is being undertaken. While we agree that a PRA and a systems interaction study are not synonymous, Licensee would note that such reliability assessments have been shown to identify the dominant contributors to risk, which can then be modified as needed. See, e.g., Licensee's Brief at 40-42 (as to utility of EFW reliability assessment).

immediately effective shutdown order. CLI-79-8, 10 N.R.C. 141 (1979). While Licensee finds ambiguity in that Commission Order on the long-term actions for which the Licensing Board was to make a reasonable progress determination, the Board's delegation here should be sustained. There can be no other result where the Licensing Board imposed (or recommended) a new long-term action.

The Board requirement regarding the MSLRDS problem was inspired by oral testimony on a related issue and was not made known until the Partial Initial Decision was issued, at which time the Licensing Board relinquished its jurisdiction on this issue. Consequently, Licensee had no opportunity to present evidence to support, and it would have been impossible for the Licensing Board to make, a reasonable progress determination. The Commission's statements in CLI-79-8 cannot be read to support such a proposition.

For the foregoing reasons, the Commission should reject the Staff's position that the Licensing Board improperly delegated to the Staff the responsibility for making a reasonable progress finding on the MSLRDS issue. In any case, this issue is moot since the long-term action has already been implemented and the parties have addressed its merits. See Licensee's Brief at 57-58.

VII. CONCLUSION

The design of the TMI-1 facility is not among the unique concerns for TMI-1 identified by the Commission as additional to the concerns identified for other B&W reactors. See CLI-79-8, supra, 10 N.R.C. at 143-144 (1979). Nevertheless, in this enforcement proceeding an exhaustive evidentiary inquiry was undertaken into the adequacy of the plant design and procedures. The scope of that inquiry was suggested by UCS and subsequently endorsed by the Licensing Board, the Appeal Board and the Commission. In spite of every opportunity at trial and on appeal to make its case on the technical merits, UCS has not prevailed on the contentions it raised to challenge the sufficiency of the numerous short- and long-term actions proposed by the Staff.

It is against this background that UCS now complains that ". . . the Commission may avoid grappling with the substance of the serious safety and policy questions presented by manipulating the scope of the hearing to exclude them." UCS Brief at 1. The attempt at manipulation, however, lies with UCS, which belatedly attempts to expand the scope of the proceeding after it has lost on the merits of the issues it proposed for adjudication.

As the Commission recently stated:

The restart proceeding is an enforcement proceeding which is being held because of the TMI-2 accident. The purpose of this proceeding is not to litigate the overall safety of TMI-1, but rather to resolve questions arising from the accident.

CLI-84-3, supra, 19 N.R.C. ___, slip op. at 9 (March 28, 1984).

The proceeding has accomplished the purpose established by the Commission, and ALAB-729 (as well as ALAB-744) should be affirmed.

Respectfully submitted,

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