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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF SECRETARY  
OF LICENSING SERVICE  
BRANCH

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-289-OLA
METROPOLITAN EDISON COMPANY	)	ASLBP 83-491-04-OLA
	)	(Steam Generator Repair)
(Three Mile Island Nuclear	)	
Station, Unit No. 1)	)	

LICENSEE'S RESPONSE TO TMIA SUPPLEMENT  
TO PETITION FOR LEAVE TO INTERVENE

I. INTRODUCTION

Pursuant to 10 C.F.R. §2.714(b), the Board's August 8, 1983 "Notice of Hearing On Issuance Of Amendment To Facility Operating License" ("Notice") ordered the petitioners in this proceeding to file, no later than September 21, 1983, "a list of the contentions which they seek to have litigated in the matter, \* \* \* [setting] forth the bases for each contention with reasonable specificity." The Board further ruled that "[c]ontentions shall be limited to matters within the scope of the amendment under consideration." Notice, at 4. Licensee

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responds herein to the "TMIA Supplement To Petition For Leave To Intervene," dated September 21, 1983.

Licensee begins the response to TMIA's proposed contentions with a general discussion of the legal requirements for contentions (insofar as here pertinent) and their application to this petition. Licensee then addresses each of TMIA's eight proposed contentions individually.

## II. RESPONSE TO CONTENTIONS

### A. Requirements for Contentions

#### 1. Scope of Hearing Notice

A threshold requirement for an admissible contention is that it address a matter which is within the scope of the issues set forth in the Commission's Notice of Opportunity for Hearing in this proceeding. See Northern Indiana Public Service Co. (Bailly Generating Station, Nuclear 1), ALAB-619, 12 N.R.C. 558, 565 (1981); Portland General Electric Co. (Trojan Nuclear Plant), ALAB-534, 9 N.R.C. 287, 289-90, n.6 (1979); Public Service Co. of Indiana (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 N.R.C. 167, 170-71 (1976).

#### 2. Bases with Reasonable Specificity

As the Board emphasized to petitioners (Notice, at 4), the Commission's Rules of Practice, at 10 C.F.R. §2.714(b), further

require that a petition include with proposed contentions "the bases for each contention set forth with reasonable specificity."<sup>21/</sup>

There are several purposes which underlie the Commission's section 2.714(b) standards:

A purpose of the basis-for-contention requirement in Section 2.714 is to help assure at the pleading stage that the hearing process is not improperly invoked. For example, a licensing proceeding before this agency is plainly not the proper forum for an attack on applicable requirements or for challenges to the basic structure of the Commission's regulatory process.

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<sup>21/</sup> Generally, pro se petitioners -- unschooled in the Commission's pleading requirements -- are held to less rigid standards of clarity and precision with regard to an intervention petition (though a totally deficient petition must be rejected). Public Service Electric & Gas Co. (Salem Nuclear Generating Station, Units 1 and 2), ALAB-136, 6 A.E.C. 487, 489 (1973). And even an inexperienced pro se party is expected to familiarize himself with the Commission's Rules of Practice. Pennsylvania Power and Light Co. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-563, 10 N.R.C. 449, 450 n.1 (1979). Further, petitions drawn by counsel experienced in NRC practice must exhibit a high degree of specificity. Kansas Gas & Electric Co. (Wolf Creek Generating Station), ALAB-279, 1 N.R.C. 559, 576-77 (1975).

Petitioners here can similarly be reasonably expected to exhibit a high degree of specificity in their pleadings. TMIA is represented by counsel experienced in NRC proceedings, and both TMIA and individual members of Joint Petitioners are seasoned veterans of the TMI-1 Restart proceedings, with at least four years of experience in active NRC intervention. As such, they are no strangers to the Commission's requirement that contentions have a "basis" stated with "specificity." They are also well aware of the existence of and availability of the Public Document Room, and the procedures for its use. Further, they know the significance of documents such as the Staff's Safety Evaluation Report in a given proceeding. Thus, the petitioners here are not entitled to the leniency which may be accorded novice pro se petitioners.

Another purpose is to help assure that other parties are sufficiently put on notice so that they will know at least generally what they will have to defend against or oppose. Still another purpose is to assure that the proposed issues are proper for adjudication in the particular proceeding. In the final analysis, there must ultimately be strict observance of the requirements governing intervention, in order that the adjudicatory process is invoked only by those persons who have real interests at stake and who seek resolution of concrete issues.

Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 A.E.C. 13, 20-21 (1974) (emphasis supplied; footnote omitted).

The notice aspect of the requirement is a natural outgrowth of fundamental notions of fairness applied to the party with the burden of proof. The Atomic Safety and Licensing Appeal Board has observed:

The applicant is entitled to a fair chance to defend. It is therefore entitled to be told at the outset, with clarity and precision, what arguments are being advanced and what relief is being asked. \* \* \* \* So is the Board below. It should not be necessary to speculate about what a pleading is supposed to mean.

Kansas Gas and Electric Co. (Wolf Creek Generating Station, Unit No. 1), ALAB-279, 1 N.R.C. 559, 576 (1975) (emphasis supplied; footnote omitted). Moreover, the Licensing Board is entitled to adequate notice of a petitioner's specific contentions to enable it to guard against the obstructionism of its processes. As the Supreme Court noted, in upholding the Commission's requirements for a threshold showing of materiality for environmental contentions:



\* \* \* [I]t is incumbent upon intervenors who wish to participate to structure their participation so that it is meaningful, so that it alerts the agency to the intervenors' position and contention. \* \* \* Indeed, administrative proceedings should not be a game or forum to engage in unjustified obstructionism by making cryptic and obscure reference to matters that "ought to be" considered \* \* \*.

Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519, 553-54 (1978) (emphasis supplied).

Yet important as the notice aspect of the standard is, the requirement for bases with reasonable specificity goes beyond the "notice pleading" allowed in the federal courts, which has been found to be insufficient for NRC licensing proceedings. See Wolf Creek, supra, ALAB-279, 1 N.R.C. at 575, n.32 (1975). On the other hand, the regulation does not require the petitioner to detail the evidence which will be offered in support of each proposed contention. Peach Bottom, supra, ALAB-216, 8 A.E.C. 13, 20 (1974).<sup>22/</sup> In short, the standard falls somewhere in between, and "[t]he degree of specificity with which the basis for a contention must be alleged initially involves the exercise of judgment on a case-by-case basis." Id.

There are also certain practical considerations which should play a particularly important role here in the Board's

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<sup>22/</sup> See also Mississippi Power and Light Co. (Grand Gulf Nuclear Station, Units 1 and 2), ALAB-130, 6 A.E.C. 423, 426 (1973); Houston Lighting and Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542, 548-49 (1980).

application of the "bases with reasonable specificity" standard to a particular proposed contention -- beyond the question of whether the proposed contention provides clear and precise notice of the issues on which Licensee may bear the burden of proof. First, the contention should refer to and address pertinent documentation, available in the public domain, which is relevant to this facility and this project.<sup>3/</sup> The Commission itself has recently emphasized petitioners' duties in this regard. See generally, Duke Power Co. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, \_\_\_ N.R.C. \_\_\_ (June 30, 1983). In Catawba, the Commission expressly recognized that "a person who invokes the right to participate in an NRC proceeding also voluntarily accepts the obligations attendant upon such participation." Id., slip op. at 10 (citations omitted). The Commission further acknowledged the "substantial public interest in efficient and expeditious administrative proceedings." Id., slip op. at 11 (citations omitted). Based on these principles, the Commission held that a petitioner for intervention has an ironclad obligation "to diligently uncover and apply all publicly available information to the prompt formulation of contentions." Ibid. In the instant case, the requirement for specific reference to relevant documentation

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<sup>3/</sup> See Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2), LBP-81-24, 14 N.R.C. 175, 181-84 (1981).

applies with special force to the Staff's TMI-1 Steam Generator Repair Safety Evaluation Report (NUREG-1019)("SER"), including its numerous attachments and appendices,<sup>4/</sup> and to Licensee's "Assessment of TMI-1 Plant Safety For Return To Service After Steam Generator Repair," Topical Report 008 ("TR-008"), and the "TMI-1 OTSG Failure Analysis Report," GPUN Technical Data Report No. 341 (July 1982) ("TDR-341"),<sup>5/</sup> but also extends to other docketed correspondence and published reports, as well as industry codes.

In addition, there should be either a reasonably logical and technically credible explanation, or a referenced and plausible authority, for the factual assertions in the contentions. The petitioner's personal opinion alone is not adequate for this purpose. See generally, Detroit Edison Co. (Enrico Fermi Atomic Power Plant, Unit 2), LBP-78-11, 7 N.R.C. 381, 386-87, aff'd, ALAB-470, 7 N.R.C. 473 (1978); Houston Lighting & Power Co. (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 N.R.C. 542, 547-48 (1980); Cleveland Electric Illuminating Co. (Perry Nuclear Power Plant, Units 1 and 2), LBP-81-24, 14 N.R.C. 175, 181-84 (1981).

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<sup>4/</sup> The Staff's SER was served on all petitioners on August 25, 1983.

<sup>5/</sup> Petitioners were directly notified of the placement of TR-008 (Rev.2) in the Public Document Room by a letter from Staff counsel to Licensee dated August 2, 1983. In addition, on September 29, 1983, Licensee provided each petitioner with an individual copy of TR-008 (Rev. 3). TDR-341 has been available in the PDR since September 3, 1982.

### 3. Challenges to Regulations

All rules and regulations of the Commission, and the underlying bases for those rules and regulations, are immune to attack in an individual licensing proceeding unless a petition is first addressed to the licensing board for an exception or waiver. The sole ground for a petition for waiver or exception shall be that special circumstances with respect to the subject matter of the particular proceeding are such that application of the specific challenged rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted. The petition must be accompanied by an affidavit in support of that basis for the petition. Other parties must be afforded an opportunity to respond to the petition, including leave to submit reply affidavits. If the licensing board determines that a prima facie showing has been made in support of waiver or exception, it shall, before so ruling, certify directly to the Commission for a determination on the matter. If the licensing board does not determine that such a prima facie showing has been made, it must deny the petition. 10 C.F.R. §2.758; Potomac Electric Power Co. (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 A.E.C. 79, 89 (1974).

## B. Response to Contentions

TMIA Proposed Contention 1(a) asserts generally that there is insufficient assurance that tube ruptures during operation or specified accident transients "will be detected in time and prevented" to avoid impermissible radiation releases, because of the inadequacy of "[p]ost repair and plant performance testing and analysis including the techniques used, empirical information collected, and data evaluation," and because of the inadequacy of "proposed license conditions." However, TMIA has failed to cite any authority whatsoever in support of its broadbrush condemnation of both Licensee's testing program and the proposed license conditions. Thus, Proposed Contention 1(a) is lacking in basis, and should be rejected for that reason alone.

Moreover, despite the extensive discussions in the pertinent documentation of the testing program as well as the proposed license conditions, TMIA has failed to identify a single (alleged) inadequacy in either the testing program or in the proposed license conditions. Indeed, the proposed contention gives no clue that TMIA even read the relevant documents. TMIA has thus ignored TR-008, Appendix A, which is devoted exclusively to a discussion of Licensee's testing program, which combines cold and hot precritical testing with the power escalation program to create "a progressive testing program."

Appendix A describes the goals of Licensee's testing program, discusses the scope and chronology of the testing program, and summarizes the results of testing to date. TMIA has also overlooked the Staff's review of Licensee's testing program, which is fully documented in the SER. (See, e.g., SER §§3.4, 3.7, at 16-27, 30-33 (Staff concludes that Licensee has "established an acceptable pre-critical and post-critical test and power escalation program to confirm that the leak tight integrity of the repaired OTSG is maintained").)

Similarly, TMIA has failed to address -- or even to reference -- the individual proposed license conditions, which are listed in the SER, §5.2, at page 46, and discussed throughout the SER.<sup>6/</sup> Nor has TMIA pointed to any inadequacies in the procedural changes proposed by Licensee to prevent recurrence of steam generator corrosion.<sup>7/</sup> In fact, TMIA has not even acknowledged Licensee's stricter administrative controls on the

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<sup>6/</sup> Licensee has recently proposed several modifications to the Staff's recommended license conditions numbered 4 and 5. (See GPUN letter, H.D. Hukill to J.F. Stolz, NRC, dated October 3, 1983.)

<sup>7/</sup> Except in those instances where the context otherwise requires, Licensee's reference in this proceeding to the terms "corrosion" and "corrosive" when used in relation to the damage to the TMI-1 steam generator tubes means the intergranular stress assisted cracking phenomenon that took place when three conditions occurred simultaneously, namely (i) a sufficiently high tensile stress, (ii) a susceptible material micro-structure, and (iii) an aggressive environment, and the combination of these conditions damaged the tubes.

introduction of potential chemical contaminants or the stricter controls placed on reactor coolant system chemistry to maintain a noncorrosive environment. These controls, designed to prevent future chemical contamination and corrosion, are discussed in TR-008, at pages 29 through 32 and 33. The Staff's review of Licensee's stricter controls is documented in the SER, §§3.6 and 3.7, at pages 30 through 33, where the Staff concluded that Licensee's stricter controls (and other measures) "provide reasonable assurance that cracking of the OTSG tubes will not recur."<sup>28/</sup>

TMIA's wholesale failure to address, or even reference, the extensive documentation available to it on the subjects of Proposed Contention 1(a) -- Licensee's post-repair testing program and the Staff's proposed license conditions -- render the proposed contention fatally defective under the Commission's recent decision in Catawba. See Catawba, supra, CLI-83-19, \_\_\_ N.R.C. \_\_\_ (June 30, 1983). Accordingly, TMIA's Proposed Contention 1(a) must be rejected as lacking in specificity and bases.

TMIA Proposed Contention 1(b) alleges that simultaneous tube ruptures in both steam generators (resulting in excessive

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<sup>28/</sup> Licensee's comments on the Staff's review, clarifying certain points in the SER discussion of administrative controls, are included in the October 3, 1983 letter identified in note 6, above.



radiation releases and/or uncoolable conditions) is not an incredible event because of "the enormous number of tubes in both steam generators which have undergone this repair process." As its sole basis for this contention, TMIA cites a September 19, 1982 memorandum from Dr. Paul Shewmon (then Chairman of the ACRS) to Ray Fraley. But, as TMIA well knows, its reliance on the Shewmon memorandum is misleading and misplaced.

The precise language of the Shewmon memorandum cited by TMIA was also the focus of a May 5, 1983 letter from Commission Chairman Palladino to Representative Edward J. Markey, which TMIA obtained through a Freedom of Information Act ("FOIA") request lodged with the NRC.<sup>9/</sup> At page 3 of the May 5 letter, Chairman Palladino sets forth the complete quote from the Shewmon memorandum:

I'm sure that the Staff will carefully go over GPU's NDE for the SG tubes, but I would be interested in learning more about what happens if a B&W plant with two SG has a tube break in both SG at the same time. It isn't an incredible event for this plant [a B&W plant with two SG], and it seems to me that it might present the operators with at least a challenge the Subcommittee could look into.

Thus, read in context, the language which TMIA cites from the Shewmon memorandum provides no basis for TMIA's contention;

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<sup>9/</sup> A copy of the May 5, 1983 letter is attached ("Attachment A"), for the convenience of the Board and the other parties.

that is, contrary to the implication of the wording of TMIA Proposed Contention 1(b), Dr. Shewmon never related the concerns expressed in his memorandum to "the enormous number of tubes in both steam generators which have undergone this repair process."

Indeed, a careful reading of the complete Shewmon quote reveals that the point Dr. Shewmon was arguing was that "a tube break in both SG at the same time" was not "an incredible event" for any "B&W plant with two SG"; that is, Dr. Shewmon's concerns are not only unrelated to the number of tubes repaired at TMI-1, but the concerns are also not specific to TMI-1.

Chairman Palladino concurs:

[B]ased on subsequent discussions with Dr. Shewmon, it is our understanding that he was not specifically identifying a potential safety hazard at TMI-1, but rather, he was indicating an interest in a generic B&W plant response and operator actions which, in his opinion, should be reviewed by the ACRS.

(May 5, 1983 letter, at 4 (emphasis supplied).)

This interpretation is consistent with the position of the ACRS Subcommittee on Metal Components, which has reviewed the TMI-1 steam generator repair program and has indicated that neither the Subcommittee nor Dr. Shewmon himself have remaining concerns about the TMI-1 steam generator repairs, although they will continue to review steam generator issues "as a generic problem, distinct from TMI-1, related but separate." (See generally, Transcript of January 28, 1983 meeting, at 290-94, especially at 293-94 (Moeller, Major, Etherington).)

Thus, TMIA has failed to provide any basis whatsoever for its Proposed Contention 1(b). While the Shewmon memorandum was distorted in an attempt to provide the appearance of some authoritative support for the contention, the memorandum -- read in context -- provides no logical basis for TMIA's allegations.

Moreover, the consideration of beyond-design-basis accidents -- such as multiple steam generator tube failures -- is simply beyond the limited scope of this proceeding. The NRC Staff has concluded that the TMI-1 steam generator repair program has restored the entire reactor coolant system ("RCS"), including the repaired steam generators, to "the original licensing basis" (SER §5.1, at 45; cf., TR-008 at 4, 5, 74, 107). And TMIA has failed to provide any basis to dispute the Staff's conclusions. For all these reasons, then, Proposed Contention 1(b) must be rejected.

TMIA Proposed Contention 1(c) asserts that the plant cannot be operated safely with the repaired steam generators "considering among other things interference which plugged tubes will have in the plant's ability to respond to transients and accidents"<sup>10/</sup> because of "[t]he type of plug used, the number of tubes requiring plugging, and [the] choice of tubes to be plugged, including failure to plug 66 degraded tubes."

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<sup>10/</sup> TMIA's use of the expansive phrase "among other things" hardly enhances the specificity of its proposed contention.

TMIA has completely failed to explain what is wrong with the types of plugs used in the TMI-1 repair project; indeed, TMIA has not even indicated which of the various types of plugs used it seeks to challenge. The various types of plugs used were identified and described in detail in TR-008, at pages 56-57, and reviewed in the SER, §§3.4.2 and 3.4.3, at pages 22 and 24 to 25. As the Staff observed, the tube plugging techniques employed in the repair program "do not differ significantly from those previously used at TMI-1." (SER §3.4.3, at 24.) Moreover, all types of plugs used in the repair program have been previously qualified for steam generator tube plugging, and have been used in other operating plants. (See SER §3.4.3, at 24-25; TR-008 at 56-57.) Particularly given the abundance of information available on the subject, TMIA's failure to provide a reasonably specific basis for its assertions impugning the types of plugs used is fatal to its allegations.

Similarly, TMIA has failed to adequately specify its concern about "the number of tubes requiring plugging." TR-008 reflects the results of analyses performed by Licensee to determine if the steam generators could be safely operated with up to 1500 tubes plugged, which included consideration of reduction in total flow and margin to departure from nucleate boiling effects of asymmetric flow distribution, effects on flow coastdown rate, effects on steam generator mass inventory and capability of natural circulation. TR-008 also describes the

effects of tube plugging on small and large break loss-of-coolant accidents, as well as all other accidents and transients analyzed in the FSAR. In addition, TR-008 reflects Licensee's consideration of the effects of plugging on moisture carry-over. (See TR-008 at 62-73.) The Staff reviewed Licensee's analyses, and concluded that:

The thermal-hydraulic consequences of operation with plugged tubes are acceptable. Accident consequences of such operation meet criteria or remain bounded by the FSAR analyses.

(SER §5.1, at 45.)

Despite the extensive information available to TMIA, it has failed to provide any basis whatsoever to undermine the confidence of the Staff in Licensee's analyses of the thermal-hydraulic and accident consequences of operation with plugged tubes. Again, there is no indication that TMIA even read the relevant documentation. TMIA's sweeping, generalized allegations of concern about "the number of tubes requiring plugging" thus also lack the requisite basis and specificity.

Nor has TMIA provided the requisite basis with specificity for its criticism of the "choice of tubes to be plugged, including failure to plug 66 degraded tubes."<sup>11/</sup> This allegation amounts to little more than an attack on the pre-existing

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<sup>11/</sup> The number of degraded tubes has been revised to 83. (See TR-008 (Rev. 3), Figure I-3.)

"plugging criteria," which are reflected in Licensee's Technical Specifications (and are fairly standard within the industry), and which were not affected by the repair program and are thus patently beyond the limited scope of this proceeding. To the extent TMIA seeks to challenge not the plugging criteria themselves, but rather Licensee's application of those criteria, TMIA has failed to identify any bases whatsoever to support its concern.

The only specific concern TMIA identifies with respect to the "choice of tubes to be plugged" is the failure to plug a number of "degraded" tubes. Again, however, the allegation is nothing more than a challenge to Licensee's pre-existing Technical Specifications, which require the plugging or repair of "defective" tubes only, not "degraded" tubes.<sup>12/</sup> Although the status of "degraded" tubes is monitored carefully, such tubes need not be repaired or removed from service, since -- even if a tube had a 360° flaw -- the tube would not fail with less than 40 percent through-wall penetration. (See TR-008 at 60.) Accordingly, TMIA has failed to supply an adequate basis with specificity in support of its concern about "the choice of tubes to be plugged," so that the allegations must be rejected.

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<sup>12/</sup> A "degraded tube" is one containing "imperfections equal to or greater than 20% of the nominal [tube] wall thickness", whereas a "defective tube" is one containing "an imperfection of such severity that it exceeds the repair limit [40% of the nominal tube wall thickness]." (See Appendix A Technical Specification 4.19.4.)

In sum, TMIA Proposed Contention 1(c) must be rejected in its entirety as lacking the requisite specificity and bases, particularly considering the volume of relevant information available to TMIA on the subjects of the proposed contention. In addition, to the extent Proposed Contention 1(c) seeks to challenge Licensee's "plugging criteria," the contention must be rejected as beyond the limited scope of the instant proceeding.

TMIA Proposed Contention 1(d) claims that the Staff and Licensee have failed to demonstrate the adequacy of the steam generator tube repair program because neither the Third Party Review Report nor the Staff's SER<sup>13/</sup> are "credible documents." In support of this position, TMIA sets forth, as we understand TMIA's arguments, eight somewhat interrelated criticisms of the reports. However, the "credibility" of the documents is not at issue here and is not a proper subject for a contention. Rather, we here respond directly to each of TMIA's underlying enumerated criticisms, which are -- in essence -- attacks upon the conclusions of the subject reports.

TMIA first asserts that there are "inherent inconsistencies" between the SER and the Third Party Review Report.

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<sup>13/</sup> While TMIA generally attacks the Third Party Review and the SER, as usual TMIA makes no reference to the specific sections with which they disagree. Licensee's response, therefore, rests on assumptions as to those portions of the reports disputed by TMIA.



TMIA makes no effort to identify any of these so-called inconsistencies and Licensee therefore is unable to respond to this general assertion. Accordingly, it should be rejected as lacking specificity.

Second, TMIA claims that the reports fail to provide data or calculations to support their evaluations, assumptions and conclusions. While the SER itself contains only limited raw data, the attached consultants' report (SER Attachments 2 through 5) and analyses submitted by Licensee to the Staff (which are publicly available) contain a wealth of data supportive of the conclusions reached by Licensee and the Staff. Similarly, the Third Party Review focused mainly on the two safety evaluations prepared by Licensee (SER Att. 6, February 18, 1983 Report at 4); all other documents received and reviewed by the Third Party Review Group are listed in Appendix D to the SER. Neither the Staff nor the Third Party Review Group is under any obligation to include all the raw data which supports the conclusions in their reports; however, this data is documented and available and petitioners are obliged to review the available underlying reports and provide specific details of their disagreements with that data. In these circumstances, then, TMIA's complaint that the SER and the Third Party Review Report include insufficient raw data must be rejected.

Third, TMIA states that "much" of the analysis is based on laboratory conditions which do not take into account the age of the plant. Here again, TMIA fails to identify which specific analyses it is referring to and, as such, its criticisms must be rejected as lacking any specific basis. But, beyond this, a significant portion of the tests and analyses were conducted on actual samples of the TMI-1 tubing or upon archive tubing samples. (See, e.g., SER §3.4.2, at 17; TR-008 at 21-22, 24, 26 (use of actual TMI tube samples); see also Staff's October 13, 1982 Safety Evaluation (sent to all parties).) In the absence of any explanation by TMIA of any disagreement with the use of actual TMI-1 and archive specimens in testing or any identification of any additional testing which it claims should account for aging, TMIA's generalized complaints on the subject must be rejected as lacking the required basis with reasonable specificity.

TMIA next attacks the qualifications of those individuals who participated in the reviews conducted by Licensee and the Staff, based upon four asserted deficiencies in the analyses performed or the methods of performance. However, as discussed earlier, topics such as the expert qualifications of reviewers are not proper subjects for contentions. Instead, would-be intervenors should directly address the methods, and the substantive analyses and conclusions of reviewers. Accordingly, in this context, the four asserted analytical deficiencies are addressed below.

TMIA claims that reliance was improperly placed on linear fracture mechanics theory as opposed to non-linear theory in determining critical crack length. Licensee does not understand the underlying reasoning behind this criticism, as linear fracture theory is generally more conservative than non-linear fracture mechanics and TMIA advances no reasons why this is not the case here. Beyond that, however, this allegation, as discussed below, constitutes an impermissible attack on the Commission's regulations. (See 10 C.F.R. §2.758 and p. 8, supra.)

Section 50.55a(g) of the Commission's regulations requires that components which are part of the reactor coolant pressure boundary meet the criteria of ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." Essentially, Article IWB-3000 of the Code sets forth the acceptance standards for flaw indication; Article IWB-3122.4 states that a flaw which exceeds the referenced acceptance standards "shall be acceptable for service without the flaw removal, repair or replacement if an evaluation analysis, as described in IWB-3600, meets the acceptance criteria of IWB-3600." Article IWB-3610, "Acceptance Criteria for Ferritic Steel Components 4 in. and Greater in Thickness," states that such a flaw "may be evaluated by analytical procedures such as described in Appendix A to calculate its growth until the next inspection or the end of service lifetime of the component." Article A-1100

of Appendix A "provides a procedure for determining the acceptability of flaws \* \* \*. The procedure is based upon the principles of linear elastic fracture mechanics" (emphasis supplied).

It is clear, then, that Licensee's linear fracture mechanics analysis is not only in conformity with ASME Code criteria, but is mandated by Commission regulation. TMIA has not petitioned for a waiver of 10 C.F.R. §50.55a(g); its criticism of the use of linear fracture mechanics analysis must therefore be rejected as a challenge to that regulation.

TMIA next asserts that axial symmetric stress analysis was improperly relied on in that it would not be applicable to all cracks. TMIA does not, however, supply any basis for this statement nor does TMIA suggest why axial symmetric stress analysis would not be applicable or what type of cracks have not been properly analyzed. As such, this statement is totally devoid of any specific basis to which Licensee could respond. In fact, Licensee did consider both symmetric and asymmetric stresses, as appropriate for the specific geometry in question. (See, e.g., TR-008 at 84 (inclusion of lateral tube movement).) In the absence of some specific basis for challenging Licensee's consideration of symmetric and asymmetric stresses, TMIA's sweeping condemnation of Licensee's stress analyses must be rejected.

TMIA also claims that the reviews and reviewers "fail[ed] to analyze crack resistance on the basis of toughness as opposed to hardness which has no relation to crack resistance." Licensee does not understand the basis for this contention -- none is stated by TMIA -- in that Licensee did not use material hardness as a calculational parameter. However, as discussed in TR-008, Licensee empirically derived the threshold value for crack propagation in Inconel 600, rather than calculating a value to separately account for material properties such as toughness. (See TR-008 at 84). Material properties, including toughness, are thus inherent in the values used. Accordingly, TMIA's criticism of critical crack analyses has no basis whatsoever, and -- in its present form -- is nonsensical. Its criticism must therefore be rejected.

TMIA's last assertion in its Proposed Contention 1(d) is that the analyses failed to differentiate between the effects of thermal stress on small versus large cracks. Here, TMIA is wrong and has obviously overlooked applicable information. As explained by the Staff, a linear fracture mechanics analysis, utilizing EPRI's "BIGIF" Code, was performed to determine when a crack of a given initial size can be expected to propagate through wall. The analysis included load cycles imposed by thermal factors. (SER §3.4.2, at 21.) Additional calculations were performed by Licensee of main steamline break ("MSLB") conditions for various arc lengths. (TR-008 at 82-84 and

Figures IX-2 and IX-5; see also, SER §3.4.2, at 21.) Thus, TMIA's allegation is baseless.

In sum, TMIA has failed to provide any basis with the requisite specificity in support of its Proposed Contention 1(d); therefore, this contention should be rejected in total by the Board.

TMIA Proposed Contention 1(e) castigates the Staff and Licensee for their alleged failure to "consider any alternative repair process," including "removal of the steam generators." However, TMIA cites no authority whatsoever to support its bare assumption that evaluation of such alternatives is required under the Atomic Energy Act. Indeed, the controlling law is to the contrary.

A would-be intervenor is, of course, free to argue that an applicant's proposal fails to meet specified applicable Commission requirements, and that the application should therefore be denied. But the fact that the applicable requirements may also be satisfied -- perhaps even in a more satisfactory manner -- by some other alternative is legally irrelevant.

See, e.g., Consolidated Edison Co. of New York (Indian Point Station, Unit No. 2), ALAB-188, 7 A.E.C. 323, 338-39 (1974); Wisconsin Electric Power Co. (Point Beach Nuclear Plant, Unit 2), ALAB-31, 4 A.E.C. 689, 693 (1971); Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-35, 4 A.E.C. 711, 711-12 (1971); Wisconsin Electric Power Co. (Point Beach Nuclear

Plant, Unit 2), ALAB-78, 5 A.E.C. 319, 330 (1972).

Accordingly, Licensee here was not obligated to consider alternatives to kinetic expansion for the repair of the steam generators. For this reason alone, TMIA Proposed Contention 1(e) must be rejected.

Moreover, TMIA is mistaken in its allegation. Contrary to TMIA's assertions, Licensee and the Staff did consider alternative repair methods (see, e.g., slides presented at April 7, 1982 meeting of Licensee and Staff, which are available in the Public Document Room and which discuss the "sleeving" and "rolling" options), although the consideration of the steam generator replacement option is not reflected in the public record.

TMIA Proposed Contention 2(a) asserts that Licensee and the Staff have failed to demonstrate that the corrosion experienced will not reinitiate during plant operation, rapidly progress and attack the steam generators or other primary system components. In support of this assertion, TMIA claims that neither the causative agent, the source of initiation nor the conditions under which the initiation of corrosion originally occurred have been properly identified. TMIA then goes on to allege that, due to this asserted deficiency, no reliance can be placed on the clean-up process, corrosion stress analyses, procedures to eliminate corrosion or, indeed, upon conclusions that the causative agent has been removed from the RCS.



The causes of the stress corrosion of the TMI-1 steam generator tubes, and the conditions under which it propagated, have been the subject of extensive analyses by Licensee and various Licensee and Staff consultants; these analyses have subsequently been reviewed and evaluated by the Staff. (SER §3.1, at 4-8; see generally SER Atts. 2-4 (Staff consultants' reports), Att. 6, Third Party Review Report of February 18, 1983, at 7; TDR-341.) Despite this wealth of information,<sup>14/</sup> TMIA -- as is its penchant -- fails to discuss this data or to provide any explanation of why it believes these analyses are incorrect or inadequate. TMIA states no basis for its belief that there may have been causative agents other than those identified by Licensee and the Staff and, again, conveniently ignores the fact that Licensee has previously investigated and rejected other possible contaminants. (See TDR-341, at IV-1, V-1, V-2 and VI-8 through VI-10.) In the absence of such explanations, TMIA Proposed Contention 2(a) must be rejected for failure to set forth any basis with reasonable specificity.<sup>15/</sup>

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<sup>14/</sup> The analyses agree that the degradation of the TMI-1 steam generator tubes was due to a combination of soluble sulfur compounds at corrosive-inducing levels (most likely from thiosulfate tank additions), the highly sensitized nature of the Inconel 600 tubes and the high axial tensile stresses experienced during cooldown and cold shutdown following hot functional testing. (SER §3.1, at 8; see also SER Att. 3 ("Dillon Report"), at 2 (rejecting carbon as source of contaminant).)

<sup>15/</sup> In that TMIA has provided no support for its allegation that the source(s) of the corrosion has not been properly identified, Licensee sees no need to respond in detail here to

(Footnote continued)

Proposed Contention 2(b) again claims that there is no assurance that corrosion will not reinitiate during operation, because: (1) Staff consultant Paul Wu<sup>16/</sup> believes that the risks associated with cleaning are greater than simply living with a large sulfur inventory in the RCS; and (2) there is no assurance that cleaning will remove more than 50% to 80% of the contamination and that the residue will not cause reinitiation.

With respect to TMIA's first claim, it should be noted that the Dillon report concerns cited by TMIA dealt with possible risks during the clean-up process itself, not with risks associated with operation after completion of clean-up. (See SER Att. 3, at 12.) In any event, leakage testing during and following the desulfurization process showed no evidence of corrosive attack. (TR-008 at 33; see also GPUN letter, H.D. Hukill to J.F. Stolz, NRC, re post-repair testing for leakage, dated July 20, 1983, at 2 ("Attachment B").) Thus, there is no

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(Continued)

TMIA's assertions regarding the removal of contaminants from the RCS, or the reliability of the RCS clean-up, corrosion control procedures or stress analysis. Suffice it to say that these subjects are discussed in detail in both the SER and TR-008, which TMIA again has not even addressed.

<sup>16/</sup> Mr. Wu is a Staff employee, not a consultant to the Staff; Mr. Wu was the Staff recipient of a report from consultant R.L. Dillon. (See SER Att. 3.) Thus, it is not Mr. Wu's views at all that TMIA references. It is the views of Mr. Dillon in a report to Mr. Wu. Even as to Mr. Dillon, as discussed infra, TMIA's reliance is misplaced.

basis for TMIA's claim that the RCS clean-up may adversely impact operation. Clean-up has already been conducted with no adverse effects, and subsequent favorable testing has been performed and reported. With the exception of the results of the successful completion of approximately thirty days of hot steam generator testing, this information is available to TMIA, but has been simply ignored. There is no basis for TMIA's proffered contention.

TMIA's Proposed Contention 2(b) further claims that the potential removal of 50% to 80% of the sulfur contamination may not be sufficient to prevent future reinitiation, but again cites no support for this assertion. The Staff (and its consultants) have evaluated the amount of sulfur remaining in the system and have determined that the concentrations are "removed to an acceptable extent." (SER §3.5, at 29; see also TR-008 at 27, 32-33.) While the cleaning process has reduced the level of sulfur in the RCS, it is likely that the concentrations existing prior to the clean-up would themselves not have precipitated additional stress corrosion cracking. (See SER Att. 3, at 13-14.) The reduction in the level of contaminants merely provides added assurance that, in combination with other corrosion controls adopted by Licensee, reinitiation of corrosion will not occur. (SER §3.7, at 33.) TMIA addresses none of these points.

In sum, then, TMIA has failed to meet the requirements of 10 C.F.R. §2.714(b) in that it has not provided a reasonably specific basis for its Proposed Contention 2(b).<sup>17/</sup> Accordingly, Proposed Contention 2(b) must be rejected.

TMIA Proposed Contention 2(c) alleges that neither the Third Party Review nor the Staff's SER are credible documents in their evaluation of "the causative agent, clean-up, or procedures to prevent contaminant reintroduction" and that those documents therefore cannot be used as a basis for concluding that the repairs are safe, because of the assertions set forth in Proposed Contention 1(d). TMIA provides no more support for the allegations here than it provided in Proposed Contention 1(d). Proposed Contention 2(c) must therefore also be rejected, for the same reasons.

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<sup>17/</sup> As a separate assertion under Proposed Contention 2(b), TMIA claims that Licensee and the Staff have failed to consider alternatives to the clean-up process. As discussed in response to Proposed Contention 1(d), Licensee is under no obligation to provide a consideration of alternatives under these circumstances.

### III. CONCLUSION

For all the foregoing reasons, none of TMIA's proposed contentions should be admitted for litigation. Accordingly, TMIA's petition for intervention in this proceeding should be denied.

Respectfully submitted,

*Ernest L. Blake, Jr.*

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Counsel for Licensee

Dated: October 6, 1983



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

ATTACHMENT A

DOCKETED  
USNRC

May 5, 1983

'83 OCT -7 P12:16

The Honorable Edward J. Markey, Chairman  
Subcommittee on Oversight and Investigations  
Committee on Interior and Insular Affairs  
United States House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

This is in response to your letter of March 23, 1983 which raised questions resulting from my letter to you of March 21, 1983 and the Subcommittee on Oversight and Investigations' December 13, 1982 hearing. Responses to the questions in your letter are enclosed.

Additionally, you reminded us of our promise made during the February 22, 1983 Energy and Environment Subcommittee hearing, to provide information relative to the exact status of completion of items in the TMI Action Plan. This information was provided to your staff by our Office of Congressional Affairs on March 25, 1983.

We hope this information resolves your outstanding questions with regard to these subjects.

Sincerely,

Nunzio J. Palladino

Enclosures:  
Response to Questions

cc: Rep. Ron Marlenee

## RESPONSES TO CONGRESSMAN MARKEY'S QUESTIONS

### QUESTION 1:

Could a tube rupture in both SGs of a two SG plant such as TMI-1 result in core damage?

### RESPONSE:

A single tube rupture in both SGs of a two SG plant such as TMI-1 is not expected to result in core damage. In order for core damage to occur, there must be a sufficient loss of primary coolant inventory such that core uncover and excessive fuel heatup occur. The inventory loss through a ruptured tube in each steam generator could be adequately compensated for by the high pressure safety injection system flow.

In the event of a SGTR, the primary objective of the operator is to minimize any radiological releases. The operator accomplishes this by equalizing the pressure between the primary system and faulted SG to stop the leak of radioactive primary coolant into the SG, and then isolating the faulted SG. The plant is then cooled down and depressurized using the intact SG to remove decay heat. These actions are prescribed by emergency operating procedure guidelines. In the event both SGs of a two SG plant had ruptured tubes, the operator would be forced to accomplish the cooldown and depressurization using at least one faulted SG. The use of the faulted SG would result in continuous leakage of primary coolant to the secondary system during the entire cooldown process. This leakage of primary coolant to the secondary system eventually can result in releases of radioactive material to the environment. However, as stated earlier this event would not be expected to lead to core damage.



QUESTION 2:

Does the NRC agree with Dr. Shewmon that a tube rupture in both SGs at TMI-1 at the same time is a credible event?

RESPONSE:

The staff's preliminary assessment indicates that the simultaneous failure of tubes in both steam generators of a two steam generator plant is highly unlikely. The probability of such an event and its consequences are currently being evaluated in the generic program relating to steam generator tube degradation and tube rupture events. The probability of such an event will therefore be better qualified upon completion of that review.

As stated in the response to Question 1, staff analysis indicates that it is very unlikely that a tube rupture in multiple steam generators would lead to core damage. Since our review will ensure that when repairs are complete, the steam generators and reactor coolant system structural design basis and leakage limits are returned to within original licensing bases for the plant, we conclude that our generic analyses, those to date and ongoing, apply to TMI-1. The factors that lead the staff to this conclusion are as follows:

1. The licensee has thoroughly quantified the corrosion condition of the steam generators by conducting 100% eddy testing (ECT)\* of both steam generators. The extent of ECT for the TMI-1 SGs is greater than that performed at any other operating plant. The techniques used and extent of ECT provide reasonable assurance that defects which may be present have been detected.
2. When considering SG tube ruptures, tubes in the free span (the 52 feet open area between upper and lower tubesheets) are the primary concern, because this is the only location where the classic guillotine break is possible. Tubes within the tubesheets are restrained from separating within the tubesheet crevice. Therefore, although leakage in the tubesheet is possible, "tube rupture" in the classic sense is not. Greater than 95% of all corrosion at TMI-1 took place within the upper tubesheet crevice, where separation is restrained. All tubes in the free span of both TMI-1 SGs that are identified as significantly degraded will be removed from service. Therefore, both TMI-1 SGs will be returned to service under the same criteria as other units which have experienced corrosion.

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ECT is a means whereby the electrical conductivity of a tube is checked by passing a coil with an induced voltage along the tube. If some form of tube degradation has occurred (such as corrosion) which has separated the tube metal, an electrical discontinuity exists. The electrical discontinuity will be proportional to the amount of metal which is missing. If 40% or more of the tube wall is missing, the tube is classified as defective and must be repaired or removed from service.

3. The most limiting initiating event for a SG tube rupture is the main steam line break (MSLB) accident. Under MSLB, maximum differential pressure will exist on the tubes. For a tube to rupture during a MSLB, it would have to be uniformly degraded through by greater than 70% of its wall thickness. The tube plugging criteria of less than 40% includes a corrosion allowance for the next operating period and an uncertainty allowance in ECT. Because most corrosion mechanisms do not result in uniform degradation that would cause structural failure before an unacceptable leakage occurs, 40% plugging criterion is very conservative. This is evidenced by the fact that no SG tube ruptures (leakage in excess of 100 gpm) due to corrosion have occurred since 1976, and only two occurred prior to that time.
- A. In addition to the conservatism of the tube plugging criteria, a number of other factors contribute to making tube ruptures in multiple SGs at TMI-1 highly unlikely. The responses listed below are specific to TMI-1.
  - a. A significant difference exists in the extent of corrosion between the two SGs. Although both SG have been repaired to the same criteria, a statistical difference exists as to the potential for continued corrosion. This factor reduces the probability that ruptures would occur in multiple SGs at the same time, even in the event of a MSLB.
  - b. The corrosion which has been found is circumferential, and in most cases involves less than half the tube circumference. This results in sufficient tube wall remaining to maintain structural strength, even for a MSLB.
  - c. Extensive pre-critical hot functional testing (approximately 6 weeks) will be performed to verify serviceability of the SGs. If undetected corrosion is present or progresses during this period, the resultant leakage will provide an indication that additional repairs are necessary.
  - d. Subsequent to criticality, power escalation will be slow (approximately 12 weeks to reach 100% power). Once full power is reached the plant will be shutdown and the SGs examined by ECT to monitor for continued corrosion.
  - e. Extensive efforts have been conducted to remove the contaminants and mitigate the possibility of recontamination of the reactor coolant system.

To provide additional perspective on this issue, the complete quote from Dr. Shewmon's memorandum is:

"I'm sure that the Staff will carefully go over GPU's NDE for the SG tubes, but I would be interested in learning more about what happens if a B&W plant with two SG has a tube break in both SG at the same time. It isn't an incredible event for this plant, and it seems to me that it might present the operators with at least a challenge the committee could look into"

Thus, based on subsequent discussions with Dr. Shewmon, it is our understanding that he was not specifically identifying a potential safety hazard at TMI-1, but rather, he was indicating an interest in a generic B&W plant response and operator actions which, in his opinion should be reviewed by the ACRS.

QUESTION 3:

What analysis has the NRC or the ACRS done to evaluate the probability or consequences of this risk at TMI-1 and what were the reasons?

RESPONSE:

No probabilistic risk assessment of the subject event has been performed by either the NRC staff or the ACRS for TMI-1. Such an assessment is considered unnecessary by the NRC staff for reasons set forth in the responses to Questions 1 and 2, above for the restart of TMI-1.

QUESTION 4: Why has the NRC decided not to require consideration or resolution of this issue before restart?

RESPONSE:

With reference to the issue of tube rupture in both steam generators, our March 21, 1983 letter to you stated that the Commission does not consider the implementation of TMI Action Plan Item I.C.1, which calls for emergency operating procedures to address events beyond the design basis, to be necessary before the restart of TMI-1. This consideration is based upon the fact that we intend to ensure that, when the steam generator repairs are complete, the steam generator and reactor coolant system structural design bases and leakage limits are returned to within the original licensing bases for the plant so that the possibility of the postulated event is not more likely at TMI-1 than at any other operating PWR as explained in the response to Question 2.

It should be noted that the licensee has submitted with its steam generator repair safety evaluation a summary of operational guidelines for single and multiple tube ruptures in one or both steam generators. The staff is reviewing this summary as one aspect of its TMI-1 steam generator repair review effort, and will address the guidelines in the forthcoming staff safety evaluation.

QUESTION 5: What accidents within the design basis for TMI-1, but outside the scope of the restart hearings, will not be resolved before restart?

RESPONSE:

It is the Commission's intent that, at the time of restart, if permitted, all significant issues involving accidents within the design basis, but outside the scope of the restart hearings for TMI-1, will be resolved. With respect to Unresolved Safety Issues (in the context of Section 210 of the Energy Reorganization Act of 1974), NUREG-0737 action items, and other generic issues, TMI-1 will be treated as an operating reactor.

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OFFICE OF SECRETARY  
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5211-83-208Office of Nuclear Reactor Regulation  
Attn: J. F. Stolz, Chief  
Operating Reactor Branch No. 4  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
TMI-1 Steam Generator Repair Status Update

Our letter of June 13, 1983 (5211-83-179), informed you of results of post repair testing of the steam generators performed to that date and plans for future testing. This letter is to inform you of additional test results through early July including the early results of reactor primary system cleaning.

Following repair of the residual tubes identified in our June 13 letter, we conducted additional drip and bubble tests of both OTSG's on June 17 and June 26. These tests on OTSG "B" showed no observable leaks. The drip test on OTSG "A" identified five plugs (four rolled plugs and one explosive plug bottom tube sheet) and one tube with drops of water clinging to the end. No drops were seen to fall free over the 30 second observation period from any of these six tubes. This particular tube (unplugged) had been inspected by ECT in the previous month and dispositioned as no detectable defects. This tube was not plugged. The leakage from the plugs was extremely small and since future operation may seal the plug leakage with time, no further repair action regarding the dripping plugs is planned at this time.

The bubble test on OTSG "A" identified seven plugs (one welded and six rolled) and three unplugged tubes from which some gas bubbles were detected by visual observation. The welded plug was repaired. This was the first bubble test on this welded plug since it had been repaired. All of the tubes and rolled plugs passing nitrogen in OTSG "A" had very fine streams of tiny bubbles which did not cause surface disturbances of the water layer. This amount of bubbling is less than that observed in previous testing. Due to the small amount of leakage, no further action was taken regarding the three tubes and six rolled plugs. The results of pre-critical hot functional OTSG testing will be used to disposition these tubes prior to critical plant operation.




As indicated in the June 13 letter, we are continuing to evaluate all testing of the steam generators and will assess that information at the management review following steam generator hot testing. The Staff will be informed of GFUN's conclusions prior to proceeding to criticality.

We have completed approximately 240 hours of RCS cleanup. The sulfur level (measured as sulfate) in the RCS water shows a slight increase as a function of time. The sulfate has increased from an initial value of 220 ppb to approximately 360 ppb as of July 18. This sulfur increase is substantially less than predicted based on assuming the maximum levels of contamination drawn from swipe data from the areas of highest concentration (i.e., OTSG upper head area).

Throughout the RCS cleanup, we have been monitoring for primary to secondary leakage by examining the secondary side for activity. No tritium has been detected to date. Tritium is currently  $4.4 \times 10^{-3}$  uci/ml in the RCS and has a minimum detectable activity of about  $5 \times 10^{-6}$  uci/ml. If one assumed equal mixing in the OTSG secondary side, the leak, if any, at the current 300 psi differential pressure is less than  $2 \times 10^{-3}$  gpm based on no detectable tritium. There have been several Cesium-137 measurements above the minimum detectable activity of  $1 \times 10^{-7}$  uci/ml. These measurements have been interspersed with measurements below the minimum detectable activity. The highest secondary side Cesium-137 activity which was measured after 10 days is  $1.86 \times 10^{-7}$  uci/ml. Since Cesium-137 is currently  $1.6 \times 10^{-3}$  uci/ml in the RCS, this corresponds to a primary to secondary leak rate of equal to or less than  $2 \times 10^{-4}$  gpm.

Our schedule shows completion of the 400 hours scheduled RCS cleanup on July 24 with 6 to 10 days required to restore RCS chemistry to its normal operational range. We expect to be prepared to commence pre-critical hot testing of the steam generators starting very early in August.

Sincerely,

  
J. F. Stolz  
Director, TMI-1

HDR:DCS:vgf

cc: R. Silver

DOCKETED  
October 6, 1983

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF PUBLIC  
DOCKETING & SERVICE  
BRANCH

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)
	)
METROPOLITAN EDISON CO., ET AL	) Docket No. 50-289-0LA
	) ASLBP 83-491-04-0LA
(Three Mile Island Nuclear	) (Steam Generator Repair)
Station, Unit No. 1)	)

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Response to TMIA Supplement to Petition for Leave to Intervene" dated October 6, 1983, were served this 6th day of October, 1983, by deposit in the United States mail, first class, postage prepaid, to those persons on the attached Service List

  
\_\_\_\_\_  
Delissa A. Ridgway

Dated: October 6, 1983

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
METROPOLITAN EDISON CO., ET AL	)	Docket No. 50-289-OLA
	)	ASLBP 83-491-04-OLA
(Three Mile Island Nuclear	)	(Steam Generator Repair)
Station, Unit No. 1)	)	

SERVICE LIST

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