

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

BEFORE THE NUCLEAR REGULATORY COMMISSION

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

FORMAL DEMAND FOR AN ADJUDICATORY HEARING
ON AMENDMENT TO THE TMI-1 OPERATING LICENSE
CONCERNING STEAM GENERATOR TUBE REPAIRS

Three Mile Island Alert, Inc. ("Petitioner") hereby formally demands that it be granted a full adjudicatory hearing on the amendment to the TMI-1 Facility Operating License, No. DPR-50 issued by the Nuclear Regulatory Commission in June, 1974, permitting operation of TMI-1 after completion of explosive expansion repairs to all steam generator tubes in the upper tubesheet, most of which had failed due to an "intergranular attack (IGA) initiated from the primary side (ID) of the the tubes resulting in the formation of stress assisted intergranular cracks." SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION, October, 1982. Further, Petitioner formally demands that such license amendment not become immediately effective before completion of the hearing requested herein, pursuant to §12(a)(2)(A) of §189(a) of the Atomic Energy Act of 1954, 42 U.S.C. 2239(a), as amended, because of the "significant hazards consideration" involved with this repair process and subsequent operation of the plant.

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In support of this demand, Petitioner asserts as follows:

1. Petitioner Three Mile Island Alert, Inc., a public interest organization located in Harrisburg, Pennsylvania, has been a recognized intervenor in hearings established by the Commission's Order and Notice of Hearing dated August 9, 1979, Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), CLI-79-8, 10 NRC 141 (1979), representing its membership and other members of the public residing in the vicinity of the Three Mile Island Nuclear facilities. Any order permitting operation of TMI-1 may affect the interests of Petitioner and those whom it represents to live in a environment free from health and safety hazards resulting from operation of TMI-1. Petitioner has the requisite knowledge and experience suitable to qualify it to be admitted as a party to any hearing concerning the subject license amendment.

2. The TMI-1 facility has not operated since its sister plant, TMI-2, experienced the worst commercial nuclear plant accident in history on March 28, 1979. On July 2, 1979, the Nuclear Regulatory Commission issued an Order directing that TMI-1 be maintained in a shutdown condition pending further order of the Commission, further determining that it was in the public interest that a hearing precede any possible restart of TMI-1. The Commission based its action on a conclusion that,

In view of the variety of issues raised by the accident at the Three Mile Island Unit No. 2 facility, the Commission presently lacks the

requisite reasonable assurance that the same licensee's Three Mile Island Unit No. 1 facility, a nuclear power reactor of similar design, can be operated without endangering the health and safety of the public.

3. In late 1981, in the midst of the process established by the Commission to examine if TMI-1 could ever be safely operated, approximately 16,000 to 20,000 potentially defective steam generator tubes were detected in the secondary side of both steam generators at TMI-1, causing primary to secondary leakage. These defects were determined to be caused by intergranular stress corrosion initiated from the surface on the primary side resulting in the formation of circumferential intergranular cracks. The active chemical impurity causing the corrosion was determined to be sulfur, the source of which was thiosulfate from the reactor-building spray system which entered the primary system by leaking through isolation valves in the spray system and entering the reactor coolant system during testing. The majority of the defects occurred within the top 2-3 inches of the 24 inch upper tubesheet (UTS).

4. In April, 1982, the Licensee notified the NRC staff that it had decided to repair the steam generator tubes using an explosive repair technique which would expand the tubes against the tubesheet, thereby establishing a new leak limiting/load carrying seal. The Licensee further decided to apply the explosive repair technique to all tubes within the UTS.

5. By letter dated August 23, 1982, Darrel G. Eisenhut, Director of the Division of Licensing of the Office of Nuclear Reactor Regulation, (NRR) notified the Licensee that a license amendment would be required before such repairs could begin, and before subsequent operation of the plant could be permitted. In particular, Mr. Eisenhut stated,

[B]ecause the portion of the tube within the tubesheet contains defects greater than 40% throughwall and your repair method for the majority of these defects will not involve plugging, an amendment to the Technical Specifications (TS) 4.19 will be needed prior to return to power operation.... In the Staff's view, this section of the TS applies to the existing condition of the steam generators and not the condition following repair.

6. In October, 1982, NRR issued a Safety Evaluation of Licensee's proposed repair technique, concluding without opportunity for public comment, that the NRC staff was reversing its prior position with regard to the necessity of a license amendment before use of the explosive expansion repair technique, finding unilaterally that the "proposed repair process does not involve an unreviewed safety question or a modification to the Technical Specifications and hence, may be conducted without NRC approval." NRR clarified that the "Safety Evaluation is limited to an evaluation of the acceptability of performing the explosive expansion repair," not of the acceptability of operation after completion of the repair process. (emphasis added).

7. Licensee began performing said explosive expansion repairs shortly after the Safety Evaluation was issued. Petitioner believes that Licensee has now substantially completed said repair process.

8. NRC has consistently maintained that a license amendment will be required before operation after completion of the explosive expansion repairs. See, Eisenhut letter of August 23, 1982, supra; Statement by Eisenhut before the House of Representatives Subcommittee on Oversight and Investigation, Committee on Interior and Insular Affairs, December 13, 1982, (Transcript at pp. 39, 42) ("It is, and it still remains, and has always been our position that prior to restart of that unit an amendment will be required... [T]he degradation problems at Three Mile Island clearly are unique, and we have taken the position that prior to restart on that facility an amendment is required... it is an unreviewed safety question."); See, also, Commission letter in response to February 23, 1983 inquiry from Hon. Morris K. Udall, Chairman, House Committee on Interior and Insular Affairs.

9. There is little question that Licensee will request a license amendment to permit operation of TMI-1 with subject steam generator tube repairs in place. On February 2, 1983, the Licensee requested a license amendment to allow the repaired steam generators to be declared operable, but recently withdrew that request. In a letter dated April 19, 1983 to the NRC, Henry D. Hukill, Vice-President GPU

Nuclear, stated that Licensee will be resubmitting its request for a license amendment sometime after May 6, 1983. See, also, Additional Statements of GPU Nuclear Corporation, before the House of Representatives Subcommittee on Energy and Environment, Committee on Interior and Insular Affairs, April 26, 1983, at p. II-7.

10. Under §12(a)(2)(A) of §189(a) of the Atomic Energy Act of 1954, 42 U.S.C. 2239(a), as amended, the NRC is required to hold a requested hearing on any license amendment, but under the recently enacted "Sholly" amendment to the Act, may avoid holding a requested hearing prior to that amendment becoming immediately effective only if it finds that the amendment presents no significant hazards consideration. In enacting this provision, Congress explicitly intended that license amendments involving irreversible consequences (such as those ... allowing a facility to operate for a period of time without full safety protections) require prior hearings or the public's right to have its views considered would be foreclosed, and that "borderline" cases be resolved in favor of finding a significant hazard consideration. H.R. Rep. 97-884, p. 37 (1982).

11. The NRC has already admitted that the TMI-1 steam tube problem is the very worst in the entire country. See, Statement of Harold Denton, Director of NRR in testimony before the House of Representatives Subcommittee on Energy and Environment, Committee on Interior and Insular

Affairs, February 1, 1982. Moreover, the NRC staff has already recognized potential safety hazards which could result from operation of TMI-1 due to the subject steam tube repairs. An internal NRC memorandum dated May 19, 1982 from William V. Johnston, Assistant Director Materials and Qualifications Engineering, Division of Engineering, to Thomas Novak, Assistant Director for Operating Reactors, Division of Licensing, reveals the following concerns:

- a. "To the extent that we have not experienced this type of behavior before, ... the staff has not reviewed the potential consequences of known defects. Particularly, the potential for this type of corrosion to rapidly progress upon restart and adversely affect the [steam generator] primary pressure boundary."
- b. "We consider the existence of a type of corrosion which has extensively degraded the steam generators, to also have the potential to degrade other reactor coolant system materials." (It is significant that the Waste Gas System and the critical PORV [Power Operated Relief Valve] have already been identified as damaged by sulfur).
- c. "The proposed repair technique involves a leak limiting rather than a leak free seal." (emphasis added). (In GPU's October 18-19, 1982 briefing to the NRC, Licensee indicated that this leakage will increase over time, and that in a five year life, the water leakage may increase by a factor of ten, causing increased radiation releases into the environment.)
- d. "...[E]xcessive compressive loading may result upon heatup of the plant which could lead to bowing or local buckling which could cause new corrosion initiation sites."

12. Perhaps most significantly, the staff expresses concern with "rapid failures occurring upon plant restart." No recommendations yet exist that the steam generators be tested to examine if the explosively expanded deformed tubes

can withstand, for example, the pressure experience which would result from a turbine trip at maximum power, or from thermal shock which would be generated from inadvertent actuation of the emergency feedwater system at high power. Common sense dictates that the extraordinarily hazardous potential consequences of "rapid failures occurring upon plant restart" or at any point mandate that the tube repair process and any testing procedure proposed by the Licensee or the NRC staff be fully examined in the context of a full adjudicatory hearing before the plant is permitted to operate.

13. Further, in a September 19, 1982 memorandum, then Chairman of the NRC's Advisory Committee on Reactor Safeguards (ACRS) Paul Shewmon stated that a simultaneous rupture in each of the steam generators "isn't an incredible event." In a letter dated January 21, 1983, Congressman Edward J. Markey, Chairman of the Subcommittee on Oversight and Investigations, House Committee on Interior and Insular Affairs, asked the Commission whether such an incident could lead to a sequence not encompassed by emergency procedures and whether this issue would be resolved before restart of the plant. In its response, the Commission stated, "Yes, a tube rupture in both SG's of a two SG plant could lead to a sequence not encompassed by the emergency procedures," and that while the issue was being considered under the TMI Action Plan (Item I.C.1), "(t)he Commission does not consider the implementation of this action plan item to be

necessary before the restart of TMI-1. Congressman Markey then asked for clarification of these comments by letter dated March 23, 1983. In its response dated May 5, 1983, the Commission could only state that a single tube rupture in both steam generators is "highly unlikely," is "not expected to result in core damage," but that "no probabilistic risk assessment of the subject event has been performed by either the NRC staff or the ACRS for TMI-1." (emphasis added). The Commission further noted that in the event that both steam generators have ruptured tubes, the operator would be forced to accomplish cooldown and depressurization using at least one faulted steam generator, resulting in continuous leakage of primary coolant to the secondary system and thus releases of radioactive material to the environment. Clearly, such a scenario raises significant safety hazard considerations. The chances of, potential consequences of, and the ability of operators to handle multiple tube ruptures demand the most intense examination in the context of a full hearing before plant operation is allowed.

14. Moreover, failure to hold a prior hearing in this case through a "no significant hazard consideration" finding, would violate the express intent of Congress in enacting the "Sholly" amendment. Congressman Morris K. Udall, Chairman of the House Committee on Interior and Insular Affairs, and the Conference Committee out of which

the "Sholly" amendment legislation was reported, has already stated,

I am troubled by reports I have heard that some on the NRC staff believe this authority might be used to approve steam generator repairs at Three Mile Island Unit-1. Congress enacted the Sholly provision so that NRC could redirect its attention and resources away from trivial matters and concentrate instead on matters of great public concern and safety significance such as TMI-1 steam generator repair work.

Statement of the Hon. Morris K. Udall, Chairman,
Subcommittee on Energy and the Environment, Committee on
Interior and Insular Affairs, February 22, 1983.

Pursuant to the foregoing considerations, Petitioner herein,

1. States that it represents persons whose interests may be affected by the proceeding to grant a license amendment to permit operation of TMI-1 with the subject steam generator tube repairs in place.

2. Request that a public adjudicatory hearing pursuant to §189 of the Atomic Energy Act be held on this license amendment.

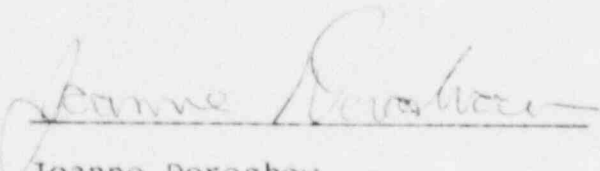
3. Request that such hearing be held prior to the license amendment becoming immediately effective and operation of TMI-1 permitted.

4. Petition that it be granted leave to participate in such a hearing as intervenors.

Respectfully submitted,

May 19, 1983

By:


Joanne Doroshow
Louise Bradford

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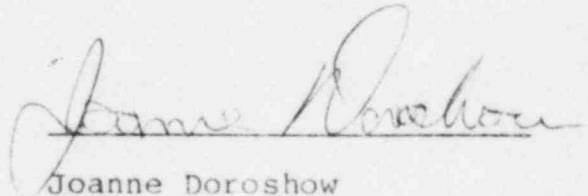
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE NUCLEAR REGULATORY COMMISSION

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(Three Mile Island Nuclear)	
Station, Unit 1))	

CERTIFICATE OF SERVICE

I hereby certify that copies of the attached FORMAL DEMAND FOR AN ADJUDICATORY HEARING ON AMENDMENT TO THE TMI-1 OPERATING LICENSE CONCERNING STEAM GENERATOR TUBE REPAIRS, dated May 19, 1983, was served this 19th day of May, 1983, by deposit in the U.S. Mail, first class, postage prepaid, or hand delivered, to those on the attached mailing list.


Joanne Doroshow

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

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

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