

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

2/6/75

BEFORE THE COMMISSION

In the Matter of
METROPOLITAN EDISON COMPANY
(Three Mile Island Nuclear Station,
Unit 1)

}
Docket No. 50-289
}

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NRC STAFF RESPONSE TO PETITION TO INTERVENE
IN CONNECTION WITH USAEC ORDER OF
MODIFICATION OF LICENSE DATED DECEMBER 27, 1974

On January 9, 1975, the Atomic Energy Commission published in the Federal Register (40 F.R. 1776) an Order For Modification Of License, dated December 27, 1974, (the Order) imposing certain further restrictions on the operation of the captioned facilities to assure that "ECCS cooling performance will conform to all of the criteria contained in 10 CFR § 50.46(b)..." The Order provided that, on or before February 10, 1975, the licensee, Metropolitan Edison Company, may file a request for a hearing with respect to the Order. The Order also provided that any other person whose interest may be affected may file a request for hearing with respect to the Order in accordance with the provisions of 10 CFR § 2.714.

The licensee has not requested a hearing on the Order. However, on January 27, 1975, a Petition For Intervention (the Petition) was

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jointly filed by the York Committee for a Safe Environment, Citizens for a Safe Environment, and the Environmental Coalition on Nuclear Power (hereafter "Petitioners"), seeking "leave to intervene in the proceeding involving a modification of the operating license for Three Mile Island Nuclear Station, Unit 1, dated December 27, 1974."

We believe that, at the outset, a brief indication of the background of the Order with respect to which Petitioners seek a hearing and the opportunity to intervene, would assist in placing the issues presented by the Petition in context. The Petition will be addressed in light of this background.

Background

On December 28, 1973, after a lengthy proceeding involving extensive examination of all elements of the multifaceted and technically intricate problems relating to ECCS cooling system performance, the Atomic Energy Commission adopted modifications of its Acceptance Criteria for emergency core cooling systems for light water cooled nuclear power reactors. The proceeding entailed extensive participation by a large number of parties and groups, including Consolidated National Intervenors, a group of about 60 organizations and

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individuals which included Petitioner Environmental Coalition on Nuclear Power. The background of the proceeding and the Commission's analysis of the many factors involved is set out at length in the Opinion of the Commission, dated December 28, 1973.^{1/} In accordance with the Opinion of the Commission, the Commission's regulations in 10 CFR Part 50 were amended to add a new section, § 50.46, establishing Acceptance Criteria, and a new Appendix K, establishing required and acceptable features of ECCS evaluation models. (39 F.R. 1003, January 4, 1974).

The new section, § 50.46, in pertinent part, required for all reactors for which an operating license had been issued prior to December 28, 1974, that the licensee submit within a specified time frame, an evaluation in accordance with the requirements of new § 50.46, and Appendix K, demonstrating that ECCS performance would conform to the criteria set forth in § 50.46(b); these criteria were modified from the former requirements of the Interim Acceptance Criteria.^{2/}

^{1/} In the Matter of Rulemaking Hearing, Acceptance Criteria For Emergency Core Cooling Systems for Light-Water Cooled Nuclear Power Reactors, Docket RM-50-1, CLI-73-39, RAI-73-12-1085.

^{2/} 36 F.R. 12247, June 29, 1971, as amended, 36 F.R. 24082, December 18, 1971.

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The evaluation was to be accompanied by proposed changes in technical specifications or license amendments as may be necessary to bring reactor operation into conformity with the requirements of the new Acceptance Criteria. Upon submission of the evaluation, compliance was required with these proposed amendments, as well as all previous license conditions or specifications. In the event that the Director of Regulation determined that the evaluation submitted under the requirements of § 50.46 were not consistent with the requirements of the regulation, the Director of Regulation was authorized to impose further restrictions on reactor operation.

As indicated in the Order, the licensee submitted the required evaluation on August 5, 1974, along with proposed Technical Specifications to limit operations in conformity with the requirements of § 50.46. After review of the evaluation and the evaluation models upon which it was based, the regulatory staff concluded that the evaluation models were not in complete conformity with Appendix K and that certain modifications were required. The Order required continued conformity of the requirements of the Interim Acceptance Criteria as well as the restrictions proposed by licensee for conformity with 10 CFR § 50.46.

The Order required that a re-evaluation in accordance with an acceptable evaluation model which conforms to the provisions of 10 CFR § 50.46 be

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submitted not later than July 9, 1975, along with proposed Technical Specifications based on such evaluation. The restrictions imposed by the Commission were required to be observed until such time as the proposed Technical Specifications were approved or modified and issued by the Commission. The Order indicated that subsequent notice and opportunity for hearing will be provided in connection with such action.

The requirements of the Acceptance Criteria set forth in 10 CFR § 50.46 and the obligation to operate in conformity with these requirements, were imposed by the Commission as a result of the Rulemaking Proceeding RM-50-1. The Order does not affect these requirements or the obligation to conform to the criteria. The Order has the sole effect of implementing these requirements in individual cases.

In this context, it is clear from the following analysis that the Petition raises challenges not to the Order but rather to the underlying Commission's Acceptance Criteria as well as raising other matters not germane to the scope of the Order.

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Interest ^{3/}

Petitioners do not directly set forth an interest affected by the Order. Rather, to establish "interest," Petitioners refer to prior participation in the captioned proceeding by two of the Joint Petitioners, Citizens for a Safe Environment and Environmental Coalition on Nuclear Power. The petition also refers to participation in other AEC facility licensing proceedings. ^{4/} In the prior

^{3/} The Order provided that any other person whose interest may be affected may file a request for hearing in accordance with the provisions of 10 CFR § 2.714. Section 2.714 requires that petitions for leave to intervene be accompanied by affidavits specifying aspects of the proceeding as to which petitioner wishes to intervene and setting forth the facts pertaining to petitioner's interest and the basis for his contentions.

Although 10 CFR § 2.714 is not specifically directed toward orders issued under 10 CFR § 2.204 (see 10 CFR § 2.700), the Order in this instance provides that petitions for hearing under the Order should conform to 10 CFR § 2.714. Moreover, the general principles of section 2.714 that a person requesting a hearing identify his interest and how it is affected, and that he identify issues relevant to the subject of the action as to which a hearing is sought, would be appropriate to a request in connection with the Order.

^{4/} York Committee has appeared in the Peach Bottom Units 2 and 3 proceeding, Docket Nos. 50-277 and 50-278; in the Fulton construction permit proceeding, Docket Nos. 50-463 and 50-464; the Three Mile Island Unit 2 operating license proceeding, Docket No. 50-320. Citizens for a Safe Environment has appeared in the Three Mile Island Unit 1 operating license proceeding, Docket No. 50-289, and the Three Mile Island Unit 2 operating license proceeding. [footnote continued]

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operating license proceeding involving the captioned facilities, the Commission found that the Joint Petitioners in that proceeding had an adequate interest on the basis of members living near the plant. ^{5/}

Simple reference to participation in a prior proceeding does not adequately establish an interest that may be affected by the Order. The basis upon which such interest was found does not show a relevant relationship with the present Order. In addition, the membership in the vicinity may have changed and its interest may be altered. Moreover, while the interest shown in other proceedings may be sufficient in connection with the proceedings involving the broad scope involved in the issuance of an operating license, it is difficult to identify how the interest of Petitioners or any of their members is affected by the limited action here involved -- the imposition of an additional restriction on the operation of the captioned facilities. While the pleading of interest is defective, we do not rely on this ground alone for the Staff's conclusion that the petition should not be granted.

^{4/} The Environmental Coalition on Nuclear Power has appeared in the Peach Bottom Units 2 and 3 operating license proceeding, the Three Mile Island Unit 1 operating license proceeding. It has also appeared in the Limerick construction permit proceeding, Docket No. 50-352 and 50-353, the Newbold Island construction permit proceeding Docket No. 50-354 and 50-355. As noted above, the Environmental Coalition on Nuclear Power was also a member of CNI in the rulemaking proceeding RM-50-1.

^{5/} Memorandum and Order, In the Matter of Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1), Docket No. 50-289, February 20, 1973.

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Contentions

None of the Petitioners' contentions 6/ raise issues which warrant the granting of the requested hearing in connection with the Order.

Contention 2 -- Contention 2 asserts that the modifications ordered on December 27, 1974, are totally inadequate to protect the public in the event of a loss-of-coolant accident. The basis for this assertion is "the absence of definitive experimental verification." This same assertion is the substance of Contention 3 and, for the reasons given below, in the discussion of Contention 3, should not be the basis for granting the Petition.

Although the substance of Contention 2 is the absence of experimental verification, the paragraph contains the additional allegation that -- "the fact that the facility was allowed to be built, and then licensed for operation by the AEC with safety systems based on a computer model that is now admitted by the AEC to be deficient and unacceptable suggests either gross incompetence on the part of the AEC or complete disregard for the public safety by the utility and reactor vendor, or

6/ The contentions are set forth in numbered paragraphs 2 through 6 of the petition. Paragraph 1 is Petitioners' assertion of interest. The contentions will be identified by the corresponding paragraph number.

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both" -- basically, challenges the development of the improved criteria reflected in 10 CFR § 50.46 and Appendix K. It suggests the absurd conclusion that improved safety requirements imply a past disregard for safety. Moreover, the basic allegation, that continued operation under the former requirements, was somehow improper, is refuted by the AEC's Memorandum and Order in the Petition for Shutdown of Certain Reactors, RM-50-8, August 29, 1973. In that proceeding, the Commission had been petitioned to order the shutdown of 20 licensed power plants, which had been licensed on the basis of compliance with the Interim Acceptance Criteria. After the evidentiary record had closed in the Rulemaking Proceeding RM-50-1, Petitioners in RM-50-8 asserted that the record in RM-50-1 established that compliance with the IAC did not assure ECCS effectiveness and asserted that facilities licensed on the basis of the IAC should be shutdown.

In denying that Petition, the Commission stated in pertinent part that:

" . . . we find, as our regulations require, that reactors operating under the IAC provide reasonable assurance of protection to the public health and safety in the highly unlikely event of a major loss-of-coolant accident.

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"Measured by the appropriate standard -- one of reasonable assurance -- the record supports the use of the Interim Criteria. Petitioners' case ignores the substantial showing of scientific and engineering support for the Criteria. See, e.g., affidavit of Dr. Hanauer. Of course there is a variety of expert opinion in the ECCS rulemaking record -- ranging from those who take the view that even the Interim Criteria are too conservative to those few who have reservations about some aspect. None of the experts upon whom petitioners rely supports the extraordinary relief they seek. Indeed, as shown in Dr. Hanauer's affidavit, the selected excerpts cited by petitioners sometimes do not accurately reflect the entire views of the witnesses quoted. We have not been shown, nor have we found, any factual basis which would warrant short-circuiting the orderly culmination of the ECCS rulemaking proceeding. On the record presented in the instant case, we specifically reaffirm our conclusion that compliance with the IAC provides reasonable assurance that emergency core cooling systems will adequately protect the public health and safety."

See also Nader v. Ray, 363 Fed. Supp. 496, DDC (1973); Sum. Rev. denied #73-1733; CADC 1973.

Contention 3 -- Contention 3 asserts that "neither the AEC nor the reactor vendor has shown that computer technology is even capable of replacing experimentally determined parameters in describing very complex systems." This challenge to the use of computer modeling techniques for the prediction of ECCS cooling performance, is a basic challenge to the Acceptance Criteria which is based upon the use of

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computer modeling to predict ECCS cooling performance, using specified required and acceptable techniques and data sources. The basic challenge that there was inadequate experimental data to support the Acceptance Criteria and various evaluation models, was raised by CNI in the Rulemaking Proceeding, RM-50-1.^{2/} The matter of CNI's claim that there is "an inadequate base on which to base predictions of the course of an accident..." was specifically addressed by the Commission in its December 28, 1974 Opinion of the Commission in RM-50-1.

The Commission noted (RAI-73-12 at 1094) that:

"The Commission realizes that the knowledge in regard to a number of facets of the analysis of a loss of coolant accident is imprecise; it is partly for this reason that there is an on-going Water Reactor Research Program. The Commission is confident, however, that the criteria and evaluation models set forth here are more than sufficiently conservative to compensate for remaining uncertainties in the models or in the data.

"Continuing research and development will provide a more extensive data base for such items as heat transfer coefficients

^{2/} See CNI's Concluding Statement--Safety Phase of Participant Consolidated National Intervenors, March 15, 1973, particularly Part IV ("There Is No Basis For Licensing Light Water Nuclear Power Reactors Consistent With The Atomic Energy Act of 1954, As Amended In Light of Inadequate Experimental Understanding of LOCA Phenomena, Inadequate Experimental Confirmation of ECCS Capability and Inadequate Experimental Verification of the Conservation of LOCA Transient Analysis Methods") and Part V (CNI Guidance For Commission on Information Needs For LOCA Analysis).

during blowdown and during spray and reflood cooling, oxidation rates for zirconium, fission product decay heat, steam-coolant interaction, oscillatory reflood flows, fuel densification, pump modeling and flow blockage. With the additional data it may become practical to assign a statistically meaningful measure of precision to the calculation. It is probable that, with a better data base, some relaxation can be made in some of the required features of the evaluation models. However, the Commission believes that any future relaxation of the regulations should retain a margin of safety above and beyond allowances for statistical error."

Petitioners' assertions with respect to inadequate experimental bases contained in Contentions 2 and 3 simply raise the same basic challenge to the adequacy of the experimental data base which underlies the Commission's Acceptance Criteria which was raised by CNI in RM-50-1 and was disposed of by the Opinion of the Commission.

Petitioners do not provide the basis and support for such a challenge to the requirements of the Commission's regulations (cf. 10 CFR § 2.758).

Contention 4 -- Contention 4 asserts that the Three Mile Island ECCS system does not have a manual shutdown capability. Petitioners assert that, without such capability, in the event that the ECCS does not function and core meltdown ensues, additional water could cause steam zirconium reactions and hydrogen gas explosions. Petitioners do not even allege that such capability is part of the systems needed to assure that the ECCS will perform satisfactorily and in conformance with the requirements of 10 CFR Part 50; rather, it is alleged to be of "critical importance" in the event that the ECCS fails to perform its function.

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This assertion of the need for still another system -- to work in the event that the ECCS fails -- challenges the basic Commission determination in RM-50-1, that a properly designed ECCS system conforming to the Commission's reliability requirements and conforming to the performance requirements of the Acceptance Criteria, provides required reasonable assurance of public health and safety. The petition provides no support for such a challenge.

Moreover, we do not believe that the added manual shutdown capability covered by this contention, has a sufficient relationship to the scope of the Order to be considered germane to the Order. The additional shutdown capability covered by Contention 4 does not arise as a "direct consequence or necessary implication" ^{8/} of the action covered by the Order. The manual shutdown capability

^{8/} See Vermont Yankee Nuclear Power Corporation (Vermont Yankee Nuclear Power Station) ALAB-245, November 27, 1974, RAI-74-11, 873. The Appeal Board, in a proceeding involving the issuance of an amendment to an operating license, noticed in accordance with 10 CFR § 2.105, held that the right to intervene is not limited to those who oppose the change itself, but extends to those who raise "contentions which arise as a direct consequence or necessary implication of the proposal." (RAI-74-11, 875). In that proceeding, the petitioners asserted that an existing license specification had been predicated on certain fuel characteristics which were being improved by the proposed amendment. The Appeal Board indicated that it could not tell on the record before it whether such connection in fact existed. The matter is still pending on remand.

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raised by Contention 4, is quite different from the protection provided by a properly functioning ECCS system. It is alleged to be of importance when the ECCS fails to perform its function. This is wholly different from the purpose and scope of the Order which imposed additional requirements for assuring conformance with the requirements of the Commission's Acceptance Criteria--requirements which were established to assure that the ECCS would not fail to perform its function.

Contention 5 -- Contention 5 contends that the ECCS system is inadequate in the event of pressure vessel failure. The subject of pressure vessel failure was specifically not encompassed within the scope of the Commission's Rulemaking with respect to Acceptance Criteria for ECCS performance (RAI-73-12 @ 1087). The Commission clearly pointed out that these subjects are covered by other Commission rules and could, in various licensing proceedings, be raised by proper showing. The petition makes no showing at all of special circumstances associated with the Peach Bottom pressure vessels. See Memorandum and Order of the Commission, dated October 26, 1972 In the Matter of Consolidated Edison Company of New York (Indian Point Unit 2). TID-26300, p. 20.

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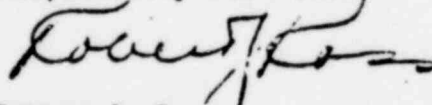
Contention 6 -- Contention 6 is simply an assertion that, because of the Price-Anderson Act, the Peach Bottom facilities should be shut-down immediately until the issues raised on Contentions 2, 3 and 5 have been "unequivocally experimentally demonstrated." This paragraph has no additional substance over that contained in Contentions 2, 3 and 5 and consequently suffers from the same basic defects discussed above.

Conclusion

While the Petition is defective, as discussed above, more importantly it is defective as a whole in that it seeks to raise fundamental challenges to the Commission's regulations and to raise issues beyond the matter of conformance with the Commission's Acceptance Criteria within the framework of a limited Order imposed to assure that the facilities will comply with the requirements of 10 CFR § 50.46.

For the foregoing reasons, we believe that the Petition should be denied.

Respectfully submitted,

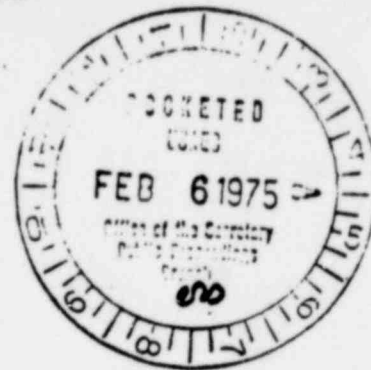


Robert J. Ross
Counsel for NRC Staff

Dated at Bethesda, Maryland,
this 6th day of February, 1975.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION



BEFORE THE COMMISSION

In the Matter of.

METROPOLITAN EDISON COMPANY

(Three Mile Island Nuclear Station,
Unit 1)

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Docket No. 50-289
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CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO PETITION TO INTERVENE IN CONNECTION WITH USAEC ORDER OF MODIFICATION OF LICENSE DATED DECEMBER 27, 1974", in the above-captioned matter, have been served on the following by deposit in the United States mail, first class or airmail, this 6th day of February, 1975:

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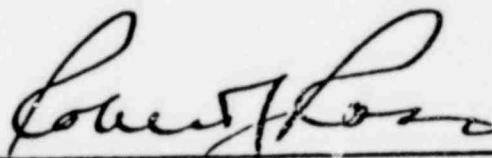
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1566 049

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