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

AUG 16 1979

NOTE TO: Guy H. Cunningham, III, Acting Deputy Chief Hearing Counsel

FROM: Roger J. Mattson, Director, TMI-2 Lessons Learned Task Force

SUBJECT: BOARD QUESTION CONCERNING CLASS 9 ACCIDENTS

In response to your request of July 27, 1979, I have attached our response to the Salem spent fuel pool Board question on Class 9 accidents.

Roger J. Mattson

Roger J. Mattson, Director
TMI-2 Lessons Learned Task Force

Enclosure: As Stated

cc: Barry Smith
Janice Moore
Gary Zech
Walt Pasedag
Robert Tedesco
John Voglewede
John Guibert
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QUESTION*

The proposed Annex to Appendix D, 10 CFR Part 50, appears to define a Class 9 accident as a sequence of failures which are more severe than those which the safety features of the plant are designed to prevent. The sequences of failures at Three Mile Island produced a breach of the containment and a release of radiation which could not be prevented by the safety features. Was the occurrence at Three Mile Island therefore a Class 9 accident? Was the risk to the health and safety and the environment "remote in probability" or "extremely low" at Three Mile Island, as those terms are used in the Annex?

RESPONSE

The proposed Annex (1) to Appendix D, 10 CFR Part 50, states "the occurrences in Class 9 involve sequences of postulated successive failures more severe than those postulated for the design basis for the protective systems and engineered safety features of the plant." The accident at Three Mile Island Unit 2 involved a sequence (3) of successive failures (i.e. small-break loss-of-coolant accident and failure of the emergency core cooling system) more severe than those postulated for the design basis of the plant. Therefore, we conclude that the accident at Three Mile Island was a Class 9 event. However, at no time during the TMI-2 accident were the radiological consequences to the public more severe than those calculated for the design basis of the plant.

The common definition of Class 9 accidents are those events whose consequences are severe but whose probability of occurrence is extremely low. The accident at Three Mile Island did occur, yet the release of radioactive material to the offsite

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*Atomic Safety and Licensing Board in the matter of
Public Service Electric and Gas Company
Salem Nuclear Generating Station Unit 1 Spent Fuel Pool Expansion
Docket 50-272 July 10, 1979

population was very small. We conclude that the accident at TMI-2 can only be considered a Class 9 event from the standpoint of possible, rather than actual, radiological consequences of the given sequence of failures.

In response to the final question of the risk to health and safety and the environment being "remote in probability" or "extremely low" at Three Mile Island, we conclude that the radioactive material released during the TMI-2 accident "represents minimal risks (that is, a very small number) of additional health effects to the offsite population." (4)

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1. Proposed Annex to Appendix D, 10 CFR 50. Originally published in the Federal Register on December 1, 1971 (36 FR 22851). Although the Annex was never adopted as part of the Code, it is currently carried as Appendix I to Regulatory Guide 4.2 (listed below).

2. Regulatory Guide 4.2, Revision 2, "Preparation of Environmental Reports for Nuclear Power Stations," NUREG-0099, July 1976.

3. "Investigation into the March 28, 1979 Three Mile Island Accident," NRC Office of Inspection and Enforcement, NUREG-0600, August 1977.

4. "Population Dose and Health Impact of the Accident at the Three Mile Island Nuclear Station," Preliminary Estimate Prepared by the Ad Hoc Interagency Dose Assessment Group, NUREG-0558, May 1979.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket No. 50-272
PUBLIC SERVICE ELECTRIC & GAS COMPANY	)	Proposed Issuance of Amendment to Facility Operating License
	)	No. DPR-70
(Salem Nuclear Generating Station, Unit No. 1)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO BOARD QUESTION NO. 4 REGARDING THE OCCURRENCE OF A CLASS 9 ACCIDENT AT THREE MILE ISLAND" and "BOARD QUESTIONS CONCERNING CLASS 9 ACCIDENTS" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 24th day of August, 1979.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
CONSUMERS POWER COMPANY	)	Docket No. 50-155
	)	
(Big Rock Point Nuclear Power Station)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of NRC STAFF RESPONSE TO CONTENTIONS OF CHRISTA-MARIA AND CONTENTIONS OF JOHN P. O'NEILL, II, in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 29th day of November, 1979.

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