

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

8/24/79

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

PUBLIC SERVICE ELECTRIC &
GAS COMPANY

(Salem Nuclear Generating
Station, Unit No. 1)

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Docket No. 50-272
Proposed Issuance of Amendment
to Facility Operating License
No. DPR-70

NRC STAFF RESPONSE TO BOARD QUESTION NO. 4
REGARDING THE OCCURRENCE OF A CLASS 9 ACCIDENT AT
THREE MILE ISLAND

During the course of the present proceeding, the Board made inquiry of the Staff as to whether the accident at the Three Mile Island facility was a Class 9 accident. Specifically, the Board directed that the Staff respond to the following series of questions regarding this occurrence:

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 sequence 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?

The Staff has now completed its response to the Board's inquiry, and submits its views herein.

DISCUSSION

1. In seeking to respond to the Board's initial question as to whether "the occurrence at Three Mile Island ... [was] a Class 9 accident," it is first necessary to determine a workable definition of a Class 9 accident -- a task not without considerable difficulty. For there exists no express definition of a Class 9 accident, and as the Appeal Board observed in Offshore Power Systems (Floating Nuclear Power Plant), 8 NRC 194, 209 (August 1978), the phrase "Class 9 accident" is essentially a "term of art."

The proposed Annex to Appendix D^{1/} gives interim guidance on how the environmental risk of a spectrum of accidents should be addressed. However, no specific definition is offered as to what constitutes a Class 9 accident. All that is set forth in the Annex is a description of what would have to take place in order to have a Class 9 accident -- essentially that:

The occurrences ... involve sequences of postulated successive failures more severe than those postulated for the design basis for protective systems and engineered safety features.

The definition does not designate a specific accident as a Class 9 accident as it does for the other accidents, e.g., Radwaste System failures. However, the courts and the Appeal Boards have usually referred to "breach of containment" and "core melt" accidents as reflective of those in the Class 9 category.

Carolina Environmental Study Group v. U.S., 519 F.2d 796, 798, 799 (D.C. Cir. 1975), FNP, supra, at 209. In discussing this type of Class 9 accident, the

^{1/} 36 F.R. 22851.

courts and Appeal Boards have generally concluded, in language similar to that contained in the Annex, that such an accident would necessarily involve "simultaneous failures of all safety systems" or "simultaneous malfunctions of numerous safety systems designed and built into the nuclear facility," Carolina Study Group v. U.S., supra, at 798-99; ENP, supra, at 209.

In considering the facts now available regarding the accident at Three Mile Island, the Staff has concluded that the Three Mile Island accident "involved a sequence of successive failures (i.e., small-break loss of coolant accident and failure of the emergency core cooling system) more severe than those postulated on the design basis of the plant." Staff Response, at p. 1. Applying this information to the description of a Class 9 accident contained in the Annex to Appendix D, the Staff has concluded that the occurrence at Three Mile Island was a Class 9 accident.^{2/}

2. The Board also inquired as to whether "the risk to the health and safety and the environment [was] 'remote in probability' or 'extremely low' at Three Mile Island" The Staff has concluded that, while the terms "risk" and "probability" carry with them special meaning when used as part of an environmental assessment, the literal response to what we believe to be the Board's inquiry (what is the health impact) is that the "radioactive material released during the TMI-2 accident 'represents minimal risks (that is, a very small

^{2/} Although the Staff concluded that consequences of the Three Mile Island accident were less severe than those calculated for the design basis of the plant (Staff Response at p. 2), this does not, we believe, remove the accident from a Class 9 category. For while the definition of a Class 9 accident contained in this Annex states that the consequences of such an occurrence "could be severe," it does not specify in any respect what the consequences of such an accident would be. Therefore, the actual consequences of an accident do not appear to be the controlling factor in determining whether an occurrence falls within the Class 9 category. See ENP, supra, at 213-14.

number) of additional health effects to the offsite population.'" Staff's Response at p. 2.

CONCLUSION

Thus, while the release of radioactive material to the offsite population was very small, the Staff nonetheless concludes that the accident at Three Mile Island was a Class 9 accident.

Respectfully submitted,

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Dated at Bethesda, Maryland
this 24th day of August, 1979.