

8/21/79



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 CO.	:	Proposed Issuance of Amendment to Facility Operating License
(Salem Nuclear Generating Station, Unit #1)	:	No. DPR-70
	:	

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INTERVENORS', COLEMAN, RESPONSE TO BOARD QUESTION NUMBER FOUR: WAS TMI A CLASS NINE ACCIDENT?

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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 CONTAIN-  
MENT 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?

The Nuclear Regulatory Commission in proposed Annex A to Appendix  
D to 10 C.F.R. Part 50 has defined Class Nine accidents as:

"successive failures more severe than  
those postulated for the design  
basis for protective systems and  
engineered safety features. Their  
consequences could be severe."  
36 F.R. 22852.

Beyond this brief description, the Annex definition provides no qualitative  
measure for determining the magnitude of environmental consequences which  
are deemed likely to flow from a Class Nine accident. It would appear,  
therefore, that the gravamen of the Class Nine Event is the magnitude of  
equipment and/or human failures which exceed the reactor's defense in  
depth safety systems. Most simply put, the difference between a Class  
Eight and Nine Accident is found in the proposition that in all 'credible'  
hypothetical accident ("Class Eight") scenarios, the plant's redundant  
safety systems activate as designed to ensure sufficient cooling water flow  
to the reactor at all times. Postulated accidents more severe than the  
engineered safety features in PWRs prior to March 28, 1979 were deemed so  
remote in probability that the NRC could license these plants for operations  
consistent with its statutory mandate to "provide adequate protection to the  
health and safety of the public." 42 U.S.C. § 2332(a). No more than a  
cursory familiarity with the Commission's response to the Three Mile Island

accident is needed, however, to know that the NRC has begun a substantial upgrading of PWR safety features to prevent another uncontrolled LOCA caused by loss of the main feedwater supply. See e.g. NUREG-0578, TMI-2 Lessons Learned Task Force, Status Report and Short-Term Recommendations. This latter regulatory action, when coupled with the moratorium on the issuance of operating licenses pending adoption of these Lessons Learned, demonstrates quite convincingly that the events at Three Mile Island constituted a Class Nine accident. Roger Mattson's earlier comments to the Commission aptly summarize the Staff's conclusions that the TMI-2 accident surpassed the engineered safety features at this nuclear power reactor:

"We saw failure modes, the likes of which have never been analyzed."  
Mattson, Nucleonics Week, April 26, 1979 p. 10; Transcript March 30, 1979 Commission Meeting.

WAS THE RISK TO 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 risk was real. It was of an undetermined magnitude and may well be continuing as efforts are initiated to undertake the most sensitive and extensive nuclear plant decontamination in history. The reality of the TMI risk to the public's health and safety was recognized by the Nuclear Regulatory Commission and the State of Pennsylvania. NRC Chairman Hendrie told Governor Thornburgh that it might become necessary to evacuate the general population residing as far as twenty miles from the reactor site. House of Representatives Report No. 96-413, Emergency Planning Around U.S. Nuclear Powerplants: Nuclear Regulatory Commission Oversight, p.2 August 8, 1979. Subsequently, the Governor recommended that pregnant women and families with children five years and younger in age, living within five miles of the plant leave this area. Again, Roger Mattson,

Director, Systems Safety Division succinctly articulated the Staff's view of the TMI danger when he reported to the Commission on the unfolding events during the accident:

"The latest burst didn't hurt many people. I'm not sure why your not moving people. Got to say it. I have been saying it down here. I don't know what we are protecting at this point. I think we ought to be moving people. Mattson, Nucleonics Week, April 30, 1979 p. 2 Transcript. March 30, 1979 Commission Meeting.

However, while Mr. Mattson sought to reassure the Commission that up to that time few people had been injured, the needed data base to support this opinion was non-existent. The House Committee on Government Operations, Nuclear Regulatory Commission Oversight Report of August 8, 1979 cites the June 21, 1979 Commission meeting at which it received a "Briefing on Facts of TMI Radiological Sequence" to conclude:

'Most of the radioactive material released during the accident was discharged from the plant's stack. The Radiation monitor in that stack, however, was designed to register only the normal low level radiation releases associated with routine operation. During the accident the instrument was off-scale, or 'pegged.'<sup>14</sup> Thus, emergency response officials could not be advised during the accident of how much radioactive material was being released into the environment. In fact, it will never be known how much radioactive material the people around Three Mile Island were exposed to.<sup>15</sup> (emphasis added, Report p. 22).

merely

While Footnote 14/cites testimony presented to the Subcommittee on Environment, Energy and Natural Resources, Footnote 15 states in part:

"The problem caused by the inadequate monitoring capability was compounded by the fact that the first charcoal and particulate filters . . . were lost and never analyzed. . . . The stacks monitor was by no means the only inadequate measuring device. For example,

unfiltered radioactive steam was vented totally unmonitored. Off-gasing from water on the floor of the diesel generator building was exhausted through the building ventilation system totally unfiltered and unmonitored. Radioactive water leaked into the plant's industrial waste treatment system from pumps in the turbine building, the diesel generator building and the service building. The radioactivity which leaked into the system was thus exhausted unfiltered and with inadequate monitoring into the Susquehanna River. In fact, Al Gibson, the NRC official who is leading the radiological effects portion of the Commission investigation stated 'most of the radiation monitors in the plant were unreliable' during the early part of the accident. (Citations to hearing transcript omitted)

Previous confident assertions that the populace of Pennsylvania had been exposed to no more than the equivalent of several chest x-rays were apparently based upon dose meter reading set up around the vicinity of the plant after the on-set of the accident. Mr. Gibson in his briefing to the Commission noted the inappropriateness of reliance upon such instantaneous dose meters which do not provide cumulative exposure measurements, nor the period of exposure. See June 21, 1979 transcript at p. 75. Even more surprising in light of the health reassurances provided by former H.E.W. Secretary Califano as to the increase in cancer rate around Harrisburg, Pennsylvania, the NRC Summary of the Office of Inspection and Enforcement Report states that:

"during a five and one-half hour period from 1700 hrs. to 2238 on March 28 and a two-hour period from 0340 to 0540 on March 29, no offsite surveys were performed in the plume. Both of these periods of time were within the interval when the majority of the noble gases were released and when a plume was well defined because of sufficient wind speed and almost constant direction.

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These data supported the conclusion that radioactive noble gases released to the atmosphere were the principal cause of exposure for individuals in the plant environs." NRC News Release Volume 5, Number 28, August 7, 1979 p. 7.

The continuing nature of the TMI risk is demonstrated by harrowing testimony recently presented to President's Kemeny Commission by Thomas Gerusky, Pennsylvania's top radiation protection official. Mr. Gerusky stated that there exists "an imminent possibility" which will continue for at least four years that an evacuation of persons living nearby the crippled reactor will be necessary. The Pennsylvania official cited as contributing factors to the continuing hazards at TMI:

"'millions of gallons' of water to treat, there is krypton in 'megacurie quantities' above the water in the containment and that defense in depth 'would be gone' when the reactor vessel is opened to remove damaged fuel."

Gerusky further observed that:

"containment and the reactor vessel must be opened for such an operation, and that the last defense, fuel cladding, isn't present on much of the fuel." (Gerusky, Testimony as reported in Nucleonic Week, p. 2, August 9, 1979.)

It is now believed that the radiation levels above the containment floor range from 1-5 rem/hr. and levels in the water below the floor may be as high as the hundreds of rem/hr. Nucleonic Week p. 1, July 12, 1979. In light of the NRC regulations on worker exposure, the delicate decontamination procedures will entail use of relay teams working inside containment for extremely short time periods. The TMI cleanup program relying upon worker substitution procedures with each person given a couple of minutes to perform highly complicated tasks can only increase the risks of further radiation release during this phase of the TMI accident recovery.

CONCLUSION

For all the foregoing reasons, it is respectfully requested that the Board pursue its stated objective of thoroughly exploring all relevant safety issues pertaining to the commercial use of nuclear energy at Salem One in conjunction with the operation of a spent fuel pool eighty feet from this reactor.

Respectfully Submitted,

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BY:

  
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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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& GAS CO. :  
(Salem Generating Station :  
Unit #1) :

CERTIFICATE OF SERVICE

I hereby certify that the Colemans' response to the Board Question #4 in the above captioned matter have been served upon the service list by deposit in the United States mail at the post office in Trenton, NJ, with proper postage thereon, this 21th day of August, 1979.

A handwritten signature in cursive script, reading 'Keith A. Onsdorff', written over a horizontal line.

KEITH A. ONSDORFF  
Assistant Deputy Public Advocate

Dated: August 21, 1979

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