

GENERAL ELECTRIC

NUCLEAR ENERGY
PROJECTS DIVISION

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August 3, 1979

MFN-199-79

U. S. Nuclear Regulatory Commission
Office of Nuclear Regulation
Washington, D.C. 20555

Attention: Harold R. Denton, Director

SUBJECT: INERTING OF BWR MARK I & II CONTAINMENTS

Gentlemen:

This letter is to appeal the proposed ruling for inerting BWR Mark I and II containments contained in the NRC Lessons Learned Task Force, NUREG-0578. We believe that inerting will not add to the safety of the Mark I and II containments.

General Electric recognizes the NRC must take action to reduce and remove the uncertainties related to the TMI accident; however, we believe that the proposed ruling on inerting in the BWR Mark I and II is counter productive to safety, and does not logically follow from the observations of the TMI incident. The reasons for our appeal are as follow:

- o The sequence of events at TMI, including operator action, led to a cessation of core flow. This apparently caused stagnant voiding of the core, elevated zirconium temperatures, and hydrogen was generated by the chemical reaction between zirconium and steam. For the operating BWR's there is no known sequence of events, including operator actions, that can cause a cessation of core flow when water inventory is available. Core flow is greatest in the jet-pump type of BWR, but even in the BWR 2, core flow is more than adequate to prevent fuel damage. This was demonstrated during the Oyster Creek transient of May 2, 1979. Therefore, the probability of core damage of the magnitude of TMI is highly unlikely for any of our BWR's.

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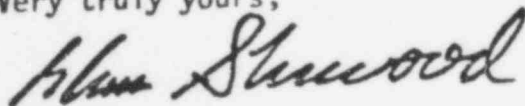
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- o Even if a TMI event were postulated for the BWR, no significant hydrogen would be released because of the inherent BWR hydraulic characteristics resulting in the core remaining covered with water. Studies show that if hydrogen up to 12% by volume were burned inside the containment, the design pressure would not be exceeded.
- o The impact on utilities of inerting are substantial including limiting containment accessibility, and probably most important, increasing personnel hazard. Utilities have shown that plant reliability is improved if containment access is available for periodic checks and maintenance.
- o The proposed NRC rule is premature because the NRC staff has not considered GE and licensee arguments in making a recommendation for inerting. Moreover, the NRC and industry will review the hydrogen generation issue as part of ANS 56.1; therefore, NRC actions should await these recommendations.

In summary, we believe that both analyses and tests (as well as operating plant events) have shown that inerting is not necessary, and there is substantial margin in BWR Mark I and Mark II containments. As we stated above, the two most important factors which argue against inerting BWR containments are: (a) superior BWR core protection which assures no significant hydrogen release for an event similar to TMI, and (b) inerting cannot be justified on a risk-benefit basis. If inerting is required, all light water containments should be included. The proposed ruling, because of these arguments, appears discriminatory to the BWR.

We recommend that the NRC not propose inerting of Mark I and Mark II containments since this does not provide a benefit equivalent to the cost and human hazard to operators, and does not change the risk to the public. We would be pleased to elaborate on the details and our reasoning at your convenience.

Very truly yours,



Glenn G. Sherwood, Manager
Safety and Licensing Operation

ljb

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