

**BOSTON EDISON COMPANY**  
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SENIOR VICE PRESIDENT  
NUCLEAR

February 27, 1985  
BECO 85-040

Mr. Domenic B. Vassallo, Chief  
Operating Reactors Branch #2  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

License DPR-35  
Docket 50-293

NUREG 0737, Item II.F.1.(6), II.B.3  
Request for Relief

- References:
1. General Electric Co. NEDO-22155, "Generation and Mitigation of Combustible Gas Mixture in Inerted BWR Mark I Containments", June 1982
  2. General Electric Co. AE-65-0684, "Applicability to Individual BWRs of NUSCO Analyses of Coolant Impurities Effect on Radiolysis", June 1984
  3. Northeast Utilities Service Co. NUSCO-131, "Analysis of Post-Accident Combustible Gas Control at Millstone Unit 1", October 1983
  4. PNPS FSAR Section 5.4.6

Dear Sir:

Boston Edison herein requests relief from the NUREG-0737 criteria that the post accident sampling of containment atmosphere be achievable within 30 minutes after safety injection.

We believe that information developed since the publication of II.F.1.(6) and II.B.3 supports our request. This information demonstrates that there is no reason to sample the PNPS drywell atmosphere immediately following a design basis accident, assuming that the initial drywell atmosphere contains less than 4% oxygen by volume, because a combustible mixture of oxygen and hydrogen will not be established. Sampling is not required until containment venting is desired, and venting cannot begin for at least 80 hours following a loss of coolant accident (LOCA).

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Reference 1 documents a detailed analysis which has been performed to determine the amount of oxygen that will be generated inside of an inerted Mark I containment following a design basis LOCA. The analysis demonstrates that for all BWR plants with inerted Mark I containments, peak containment oxygen concentration is at all times maintained below the 5% combustible gas limit of Regulatory Guide 1.7 without requiring containment venting or hydrogen recombiners.

PNPS has a Containment Atmosphere Dilution (CAD) system, which is capable of pressurizing the drywell with nitrogen. The results from Reference 1 show that repressurization to 30 psig will ensure oxygen concentrations which are always well below Regulatory Guide 1.7 allowable limits without the need for venting.

General Electric (GE) and Northeast Utilities Service Company (NUSCO) performed studies to address the NRC concern over the adverse effect of iodine impurity on radiolysis. The results of the NUSCO analysis (Reference 3) show that, for Millstone Unit 1, the predicted post accident primary coolant iodine concentration, using conservative Appendix K models, is well below the iodine concentration at which radiolysis becomes a concern for combustible gas generation. Reference 2 demonstrates that for all Mark I containments there is a substantial margin between the calculated iodine release due to a LOCA, and the iodine release which would cause radiolysis to be a concern.

Since it has been clearly established that sufficient levels of oxygen will not be produced inside a Mark I containment to create the potential for hydrogen/oxygen combustion, sampling of the containment atmosphere would not be necessary until it is desirable and allowable to vent the containment. For PNPS this is a period greater than 80 hours following a LOCA (Reference 4).

This request is made to expedite sampling system operability, which has been delayed until June 30, 1985 because of the discovery of chloride induced cracks in essential system lines. A recent study indicates that replacement of all affected lines would compel further delay in making the system operable.

However, certain sections of the lines need not be replaced if the temperature of these lines was kept below 150°F. Our original design requires heat tracing these lines to 240°F. We have determined that temperature levels ranging between 150°F and 240°F create an environment for continued chloride induced cracking in those lines/sections which already have been contaminated with chlorides. Temperatures below 150°F would not induce cracking.

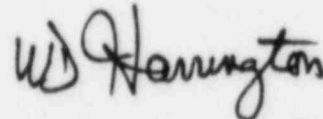
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If samples are taken later, heat tracing at temperatures above 150°F is not necessary. Therefore, exemption from the "30 minutes after safety injection" requirement would allow us to reduce heat tracing, removing an essential contributor to chloride cracking. This would reduce the replacement of line segments, and allow the earlier achievement of containment gaseous sampling system operability

BECo requests an expeditious response to this relief request. BECo is currently in the process of repairing these lines and the extent of rework necessary depends on receiving relief. We currently have a Confirmatory Order which requires that all corrective work be complete, and the system operable by June 30, 1985. Our ability to meet this, or the need to request a further extension, is dependent on your response to this request.

Very truly yours,



PMK/kmc