

From: Goutam Bagchi , *N RR*
To: Glenn Kelly
Date: Friday, June 30, 2000 11:00 AM
Subject: Decommissioning: Input for Staff Technical Report

Glenn,
Attached is a file containing an insert on Page 24. I shall make copies of those pages that contain markups.

Thank you,
Goutam
301-415-3305

CC: Gene Imbro, George Hubbard, Jack Strosnider, Ni...

2/192

INSERT Page 24

Using a HCLPF value of 0.5 g PGA, Dr. Kennedy's study indicates (see Table 3) that the annual frequency of seismically induced failure of spent fuel pool structures varies from 1.3×10^{-6} to 13.6×10^{-6} . We assume that the seismic induced failure of the spent fuel pool structure directly leads to the uncovering of the fuel and radioactive release. In the draft recommendation the staff proposed to use 3×10^{-6} as the annual frequency of seismic failure and equivalently the frequency of radioactive release. However, comments from the Advisory Committee on Reactor Safeguards and other stake holders indicated that the proposed approach of using HCLPF values of 3XSSE for Eastern and Central US and 2XSSE for the Western US is too conservative. Also, the proposed approach contained two tiers of assessments for the Eastern and the Western United States and was complicated by the fact that seismic fragility information for ground motion levels beyond 0.5 g is not readily available from a peer reviewed data base. Given that the original staff recommendation was based on several areas of conservatism and given large uncertainties in the estimates, we reexamined the results of Table 3. Our review indicates that only two operating eastern plants have frequencies significantly greater than 3×10^{-6} . All other plants, which exceed 3×10^{-6} , lie within the range of 3×10^{-6} to 4.5×10^{-6} . The conservatism and uncertainties cited earlier blur the distinction between these values; therefore, it should not be used as a sole decision criterion. Therefore, the staff recommends that only those plants which significantly exceed 3×10^{-6} value should be required to conduct plant-specific analysis beyond the confirmation of the checklist. This process results in identification of four sites in the Eastern US, only two of which are operating reactor sites - Pilgrim and H. B. Robinson sites. In the Western US the Diablo Canyon and San Onofre sites are also beyond the scope of a simple screening evaluation. Based on the NRC sponsored study, Seismic Failure and Cask Drop Analyses of the Spent Fuel Pools at Two Representative Nuclear power Plants, NUREG/CR 5176, January 1989, the seismic HCLPF capacity of the H. B. Robinson spent fuel pool has been estimated to be 0.65 g. For the Pilgrim, Diablo Canyon and San Onofre sites, it may be necessary to conduct a detailed site specific seismic risk evaluation, or to delay decommissioning until such time that a zirconium fire risk is minimal. To summarize the staff recommendation for seismic vulnerability of spent fuel pools, (1) all sites must conduct an assessment of the spent fuel pool structures using the revised seismic check list in order to identify any structural degradation, potential for seismic interaction from superstructures and over head cranes, and to verify that they have a seismic HCLPF value of 0.5 g, (2) those sites that cannot demonstrate that a seismic HCLPF value exists, may either under take some remedial action or conduct site specific seismic risk assessment and (3) Pilgrim, H. B. Robinson, Diablo Canyon and San Onofre sites must use the seismic check list to identify any structural degradation or other anomalies and then conduct a site specific seismic risk assessment.