

From: Wang, Alan
Sent: Wednesday, July 28, 2010 1:21 PM
To: Baldwin, Thomas (DCPP); Parker, Larry M
Cc: Burkhardt, Janet
Subject: Request for Additional Information Regarding Integrated Head Assembly (ME4056 and ME4057)

Tom and Larry,

By letter dated June 14, 2010 (Agencywide Documents Access & Management System (ADAMS) Accession No. ML101666003), Pacific Gas and Gas and Electric Company (PG&E), the licensee for Diablo Canyon Power Plant, Unit Nos 1 and 2 (DCPP), requested a change to allow a revision of its Final Safety Analysis Report Update (FSARU), to include damping values for the seismic design and analysis of the integrated head assembly (IHA) on the replacement reactor vessel head that are consistent with the provisions of Regulatory Guide (RG) 1.61, "Damping Values for Seismic Design of Nuclear Power Plants," Revision 1.

The US Nuclear Regulatory Commission (NRC) staff has determined that the following additional information is needed to complete its review of the subject topical report. This request was discussed with Larry Parker of your staff on July 28, 2010, and it was agreed that a response would be provided within 14 days of receipt of this email. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

REQUEST FOR ADDITIONAL INFORMATION

- 1) In Section 3 of enclosure 1 (page 2, System Description) to PG&E letter dated June 14, 2010, the licensee stated that the IHA is a new structure that does not have an existing equivalent design, and the IHA incorporates the functions of the former Control Rod Drive Mechanism (CRDM) seismic support structure, the CRDM ventilation cooling system, and the head lift rig. The licensee stated that the duct work forms part of the IHA structure and is not traditional round or rectangular sheet steel ducts. Provide a description of the geometric shape or cross section of the duct work.
- 2) In Section 3 of Enclosure 1 (page 5, IHA Seismic Analysis) to PG&E letter dated June 14, 2010, the licensee discusses the finite element structural analysis of the IHA, and notes that the seismic response of the various components of the IHA were obtained using the response spectrum analysis method or the time history modal superposition method in some selected cases. Please clarify the type of the time history analysis method used, whether it is the linear elastic time history method or the non-linear elastic time history, or nonlinear inelastic time history method. In addition, provide a summary table of the analysis method (e.g., response spectrum, linear elastic time history, non-linear elastic time history) used for the IHA seismic analysis for DE, DDE, and HE seismic events.
- 3) In Section 3 of Enclosure 1 (page 6, IHA Seismic Analysis) to PG&E letter dated June 14, 2010, the licensee states that the resulting IHA loads and stresses for DE, DDE, and HE were evaluated for acceptance using the ASME Boiler and Pressure Vessel Code, Section III, Division 1, Subsection NF, "Component Supports," 2001 Edition through 2003 Addenda.

Please provide clarification of the specific ASME classification, that is Class 1, 2, or 3, of the Subsection NF component supports.

4) In Enclosure 1 to PG&E letter dated June 14, 2010, Tables 1 through 5 (Pages 12-21) provide a summary of the maximum stress ratios for the various IHA components and connections, along with the controlling load combinations. Please provide the following additional information:

(a) Provide notes to the tables to identify what the symbols, such as, DL, P, M1, T, ML represent.

(b) Clarify if Design Class 1 and Design Class II refer to ASME Subsection NF class 1, and class 2.

(c) Identify the material of the component or connection in Tables 1 through 5.

(d) In some of the controlling load combinations listed in Tables 1, 2, and 5, the Loss-of-Coolant Accident (LOCA) term is present. Provide information summarizing the type of analysis and damping values used for the LOCA analysis of the IHA.

5) In Enclosure 2 (Table 2, Page 13 of 14) to PG&E letter dated June 14, 2010, for connection number 43, the quantity (QTY) is not listed. Please clarify how many of these bolted connections are to be listed in the QTY column. If this is in fact an omission, then clarify if the total number of connections is different from the quantity of 185 connections and either recompute or justify the weighted average damping value for OBE (DE) and SSE (DDE & HE) used in the IHA analysis.

If you have any questions, please contact me at (301) 415-1445.

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