From: Peter Tam
To: Clyde Mackaman; Dennis Vandeputte; John Dosa; Joseph Thuotte
Date: 8/5/04 1:37PM
Subject: NMP1: Evaluation of Upper Shelf Fracture Toughness **(TAC MC2487)**

John:

We have completed our preliminary review of your 3/22/04 submittal on this subject. Our reviewers, Ganesh Cheruvenki and Simon Sheng, plan to hold a conference call with you to discuss the following issues:

(1) The licensee stated that the evaluation of upper shelf energy fracture toughness for the NMP1 was based on the requirements specified in the American Society of Mechanical Engineers (ASME) Section XI, Code Case N-512, "Assessment of Reactor Vessel with Low Upper Shelf Charpy Impact Energy Levels Section XI, Division 1." Although Code Case N-512 is technically acceptable, it does not provide information on the selection of transients and material properties that are used in the evaluation. Regulatory Guide (RG) 1.161, "Evaluation of Reactor Pressure Vessels with Charpy Upper Shelf Energy Less than 50 Foot-Pounds", delineates the methodology for evaluating materials that do not meet the end-of-license 50 foot-pound upper shelf energy requirement specified in Appendix G to 10 CFR 50. RG 1.161 provides specific information on the selection of transients and material properties for this analysis.

(2) The licensee's submittal does not address the requirements specified in paragraph 4300 of ASME Code Case N-512, which addresses the flaw stability evaluation for the service loadings A and B. The staff requests that the licensee address the stability evaluation.

(3) The licensee states in paragraph 2.0 of the submittal that the evaluation of allowable upper shelf energy values is bounded by the analysis using Service Level A and B loadings. Provide justification for not performing an evaluation consistent with the analysis of Service Level C and loadings.

(4) Table 4.3 in the submittal indicates that the beltline plate material with heat number G-307-4 has the lowest projected upper shelf energy of 37.2 foot-pounds at 54 effective full-power-years of operation. Provide the J0.1 (i.e., the material's J-resistance curve value at 0.1 inch crack extension) value that corresponds to this projected upper shelf energy value of 37.2 foot-pounds. This J0.1 value should be the bounding value for all the beltline materials.

Please call me to set up the conference call. **The sole purpose of this e-mail is to prepare you and others for the proposed conference call. It does not formally state an NRC staff position, nor does it formally request for additional information.**

Peter S. Tam, Senior Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

e-mail: pst@nrc.gov Tel.: 301-415-1451

CC: Chia-Fu Sheng; Ganesh Cheruvenki

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