COVER PAGE FOR

NUCLEAR ENERGY INSTITUTE

OCTOBER 24, 2008

NUCLEAR ENERGY INSTITUTE

James H. Riley
DIRECTOR
ENGINEERING
NUCLEAR GENERATION DIVISION

September 12, 2008

Mr. Joseph G. Giitter
Director, Division of Operating Reactor Licensing
U.S. Nuclear Regulatory Commission
Mail Stop E2C52
Washington, DC 20555

Subject: H*/B* Expert Panel Technical Evaluation - Re-assessment of Coefficient of Thermal Expansion Data for SA-508 Steel and Alloy 600.

Project Number: 689

Dear Mr. Giitter:

Industry representatives are currently working towards resolving the NRC comments on the H*/B* alternate repair criteria. The purpose of this letter is to provide statistical evaluations of the coefficient of thermal expansion (CTE) data for SA-508 Grade 2 and Alloy-600, including the new laboratory data, which results in a recommended statistical distribution of the data.

The ASME B&PV Code (Section II) provides material properties for use in design and analysis of pressure vessels and other components, including thermo-physical properties such as thermal expansion, thermal conductivity, and thermal diffusivity. Variability in these properties is recognized, and the Code states that these properties are considered typical, and should be considered to have an associated uncertainty of ±10%. However, the meaning of this uncertainty range is not defined in statistical terms. Furthermore, recent testing of the coefficient of thermal expansion (CTE) of a low alloy steel forging (SA-508 Grade 2) and of Alloy-600 by two independent laboratories have reported data that lie outside of the ±10% range for SA-508 Grade 2.

Enclosure 1 provides a statistical evaluation of CTE data for SA-508 Grade 2 and Alloy 600 material, including reassessed laboratory data, which results in a recommended statistical distribution of the data.

1776 I Street, NW I Suite 400 I Washington, DC I 20006-3708 I P: 202.739.8137 I F: 202. 533.0193 I jhr@nei.org I www.nei.org

Enclosure 2 provides new CTE data for A-508 and A-600 materials recently tested at ANTER laboratory as part of the Westinghouse H* program review. These results are superimposed on CTE data provided in Enclosure 1. Note that the March 28th letter report does not include the new ANTER data reported in the second enclosure; however we are in the process of updating the report to include the new data.

Overall results indicate that it is reasonable and conservative to continue to use the ASME curves as a baseline for H* analyses, since use of higher CTE for SA-508 and lower CTE for A-600 material tend to increase the gap between the steam generator tube and tube sheet. Details of the analyses are provided in the attached reports.

If you have any questions, please contact me at 202.739.8137; jhr@nei.org or Mike Melton at 202.739.8049;mam@nei.org.

Sincerely,

James H. Riley

Enclosures