NUCLEAR ENERGY INSTITUTE

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

Subject: Evaluation of the Statistical Variability in Coefficient of Thermal Expansion Properties of SA-508 Steel and Alloy 600.

Project Number: 689

Dear Mr. Giitter:

The purpose of this letter is to provide the enclosed final report on the statistical evaluation of the coefficient of thermal expansion (CTE) data for SA-508 Grade 2 and Alloy-600. This report was generated to support the technical justification for re-defining the primary pressure boundary from the tube end weld to the hydraulic expansion joint in Westinghouse designed steam generators with hydraulically expanded tubing.

Data was obtained from a number of sources and are included in the evaluation, including literature sources as well as new laboratory CTE data developed specifically for this purpose. The evaluation results in recommended statistical distributions of this property for the two materials. Since this technical justification relies significantly on the differential thermal expansion between the tube and the tube sheet, and regulatory acceptance criteria are stated in terms of probabilities, it is necessary to establish the mean and probabilistic variability of the CTE. Details of the analyses and conclusions are provided in the final report.

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

Enclosure

c: Ms. Tanya M. Mensah, NRR/ADRO/DPR/PSP, NRC
Document Control Desk