February 6, 2008

Mr. Robert E. Brown
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy Americas LLC
P. O. Box 780, M/C A-30
Wilmington, NC 28401

SUBJECT: DATA REQUEST TO SUPPORT U.S. NUCLEAR REGULATORY COMMISSION (NRC) STAFF CONFIRMATORY MAXIMUM EXTENDED LOAD LINE LIMIT ANALYSIS PLUS (MELLLA+) ANTICIPATED TRANSIENT WITHOUT SCRAM (ATWS) CALCULATIONS

Dear Mr. Brown:

The NRC staff has reviewed and approved the General Electric -Hitachi Nuclear Energy Americas, LLC (GEH) Licensing Topical Report (LTR) NEDC-33006P, Revision 2, "Maximum Extended Load Line Limit Analysis Plus (MELLLA+)," which provides the process and analysis scope required for boiling water reactors (BWRs) (BWR3 through 6) to expand their reactor operating domain up to 120 percent of the originally licensed thermal power for core flow as low as 80 percent of the rated value. The Advisory Committee on Reactor Safeguards (ACRS) met on June 6-8, 2007, and concurred with the NRC staff's conclusions.

BWR operation in the MELLLA+ domain increases the operating rod line (i.e., steady state power-to-flow ratio) which poses increased technical challenges in several areas. One area of concern is the ATWS. The NRC staff needs confirmatory ATWS calculations to support the review of plant-specific MELLLA+ applications. It is anticipated that ACRS expects to have the opportunity to review these confirmatory calculations at the time of the plant-specific application.

The purpose of this effort is to provide the confirmatory calculations for the GEH calculations supporting the approval of the MELLLA+ LTR. The two significant ATWS conditions of interest are:

1. Non-isolation ATWS (i.e., turbine trip with bypass (TTWB)) that leads to large amplitude core instability (ATWS instability), and

2. Isolation ATWS (i.e., main steam isolation valve closure (MSIVC)) that leads to emergency depressurization once the heat capacity temperature limit (HCTL) is exceeded (ATWS depressurization).

To provide a valid comparison, the NRC needs to assume as closely as possible, the analysis parameter values and conditions assumed in the GEH calculations. The NRC staff requests from GEH, the information listed below to support its confirmatory calculations.

1. GE14 bundle and core design data corresponding to MELLLA+ operation. The information will be used to generate cross section(s).

2. Core nodal exposure and void history information corresponding to the statepoints used for the ATWS analyses supporting NEDC-33006P, Revision 2 (LTR and GEH responses to NRC staff requests for additional information (RAI)). This information

will allow the NRC staff to ensure that our initial conditions are as close as possible to those assumed by GEH in its analyses of the events.

3. Isolation ATWS (MSIVC) design inputs for a large BWR (764 bundle core) used for the GEH analysis which will contain system actuation setpoints and timing information, and operator action timing information (safety relief valve (SRV) setpoints, standby liquid control system (SLCS) timing, water level control).

4. Boron mixing assumptions.

5. Non-isolation ATWS (TTWB) design inputs for a large BWR (764 bundle core) used for the GEH analysis which will contain system actuation setpoints and timing information, and operator action timing information (SRV setpoints, SLCS timing, water level control).

6. TRACG deck used for GEH ATWS calculations.

7. Design Record File sections discussing the GEH ATWS calculations for NEDC-33006P, Revision 2 (LTR and RAI Responses), to be made available at local GEH office.

If you have any questions regarding this activity, please contact Tony Nakanishi at 301-415-3211.

Sincerely,

/RA/

Michelle C. Honcharik, Senior Project Manager
Special Projects Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 710

cc: See next page

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Michelle C. Honcharik, Senior Project Manager
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ADAMS ACCESSION NO.: ML080290011 **NRR-043**

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NAME	**DBaxley**	**MHoncharik**	**GCranston**	**SRosenberg**
DATE	**1/30/08**	**1/31/08**	**1/31/08**	**2/6/08**

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