

**Enclosure 1**

**MFN 09-075**

**Response to Portion of NRC Request for  
Additional Information Letter No. 253  
Related to ESBWR Design Certification Application**

**Licensing Topical Report (LTR) NEDO-33337  
Initial Core Transient and Accident Analysis**

**RAI Number 15.2-48**

**NRC RAI 15.2-48:**

*Explain the difference in scram credit between the DCD and NEDO-33337. DCD, Tier 2, Rev 5, Chapter 15, it is stated that scram is credited, but in Table 2.4-2 of NEDO-33337 and Table 15.3-2 of the DCD, it is stated that scram is not initiated. Explain why scram is or is not credited.*

**GEH Response:**

Table 15.1-6 of DCD, Tier 2, Rev 5, identifies the required automatic instrument trips for the events evaluated in the ESBWR safety analysis. For the case of Loss of Feed Water Heating (LOFWH) with failure of the Selected Control Rod Run-In and Select Rod Insertion (SCRR/SRI), an Average Power Range Monitor (APRM) High Simulated Thermal Power (STPT) scram is credited.

For the case of LOFWH with failure of SCRR/SRI presented in Table 2.4-2 of NEDO-33337, Revision 0, the analysis input condition is an instantaneous feedwater temperature drop of 100 °F. The event did not credit scram and the reactor reached steady state conditions above the STPT scram setting of 115% simulated core power. This was performed for analysis purposes only, and is an unnecessary conservatism.

For the case of LOFWH with failure of SCRR/SRI presented in Table 15.3-2 of DCD, Tier 2, Revision 5, Chapter 15, the analysis input condition is an instantaneous feedwater temperature drop of approximately 72 °F. This feedwater temperature drop was chosen to result in a transient that achieves steady state at a simulated core power level slightly above the STPT scram point. Again, for analysis purposes only, the STPT scram was not initiated in order to permit the transient to reach steady state conditions near the STPT scram setting. This transient bounds the LOFWH with failure of SCRR/SRI analysis as any actual feedwater temperature drop greater than approximately 72 °F will result in a STPT scram and termination of the event. Therefore, scram is effectively credited in the DCD Revision 5, Chapter 15 case.

In summary, although scram is expected for both core loading patterns, no credit for scram was taken in the analysis in NEDO-33337, Revision 0.

**DCD or LTR Impact:**

No DCD changes will be made in response to this RAI.

No changes to LTR NEDO-33337 will be made in response to this RAI.