From: Kalyanam, Kaly
Sent: Monday, January 24, 2011 1:08 PM
To: wsteelm@entergy.com
Cc: Lent, Susan; Burkhardt, Janet
Subject: RAI on the Similarity Qualification Test Report On Solenoid Valve

Plant: Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No.: 50-382
Subject: Request for Additional Information on the LAR to Revise TS 3.4-1, Isolation Valve Addition
TAC Nos.: ME3421
SUNSI Review Done: Yes. Publicly Available, Normal Release, Non-sensitive,
From: N. Kalyanam
Affiliation: NRC/NRR/DORL/LPL4
To: W. Steelman
Affiliation: Entergy Operations, Inc.

Billy,

By letter dated February 22, 2010, as supplemented by letters dated June 8, August 12, 2010, and January 4, 2011, Entergy Operations, Inc. (Entergy) made application to amend the Technical Specifications (TS) of the Waterford Steam Electric Station, Unit 3. The proposed amendment adds valve SI-4052A (Reactor Coolant Loop 2, Shutdown Cooling Suction, Inside Containment Bypass Isolation) and valve SI-4052B ((Reactor Coolant Loop 1, Shutdown Cooling Suction, Inside Containment Bypass Isolation) to Technical Specification Table 3.4-1. The purpose of this line is to equalize the shutdown cooling system pressure down stream of valve SI-405A (Reactor Coolant Loop 2, Shutdown Cooling Suction Inside Containment Isolation) and valve SI-405B ((Reactor Coolant Loop 1, Shutdown Cooling Suction Inside Containment Isolation). By an electronic mail (e-mail) dated January 19, 2011, Entergy forwarded the Similarity Qualification Test Report On Solenoid Valve.

The staff reviewed the Similarity Qualification Test Report on Solenoid Valve Model V526-6040-22 submitted by Entergy for Waterford 3 by e-mail dated Jan 13, 2011, and requires the following clarifications and additional information to complete our review. In view of the short turn-around time available for this LAR, please provide the response to these RAIs as soon as possible along with the similarity report mentioned above on the docket, under oath and affirmation.

Thanks

Kaly

<u>REQUEST FOR ADDITIONAL INFORMATION</u>

<u>ENTERGY OPERATIONS, INC.</u>

WATERFORD STEAM ELECTRIC STATION UNIT 3

DOCKET NO. 50-382

1. The Code Compliance for Waterford Unit 3 (WF3) (Referring to drawing V526-6040-22 in Similarity Report and Regulatory Commitment in the license amendment request (LAR) Dated 2/22/2010) indicates ASME Sect. III Class 1, while the tested Parent valves V526-6180-1 and V526-6042-1A are of ASME Sect III Class 2. Please explain how the Class 1 requirement for WF3 valve V526-6040-22 for application in WF3 is similar to the Class 2 certification for the Parent valves.
2. The WF3 valve specification (Drawing for valve V526-6040-22) fluid is borated water whereas the Parent valve V526-6180-1 is for water (not borated). Explain if this is the reason for similarity analysis performed with a different parent valve such as V526-6042-1A suitable for borated water for LOCA testing.
3. It is noted that the Seal (Body to Bonnet) is “seal-weld” for the loss of coolant accident (LOCA) test valve but the seal for WF3 valve is a “K-seal”. Please explain how these seals are similar.
4. Table III of the Similarity Report shows that Zener Diode and Rectifier are used in the Parent valve V526-6042-1A and Zener Diode is used for Parent valve V526-6180-1, but are not applicable for WF3 valve V526-6040-22. Explain why this combination is not required for WF3 valve.
5. The parent valve V526-6180-1 is indicated as stem-vertical mounting. Provide mounting/orientation details for the WF3 valve and the LOCA Testing Parent valve V526-6042-1A, and show how the test configurations are similar.
6. Sheet 6 of Similarity Report indicates that the Quick Disconnect Switch (QDC) for leadwire has been qualified to IEEE Standard 323-1983. This version of IEEE Standard 323 is not endorsed for use by NRC regulations. It is, however, noted that other tests are per IEEE-323-1974 elsewhere in the Similarity Report. Explain how this Quick Disconnect Switch meets the qualification requirements of IEEE 323-1974 which is endorsed by NRC regulations.
7. With respect to the LOCA Temperature vs. Time, LOCA Pressure vs. Time, and Parent Valve LOCA curves, provide explanation of the curves and demonstrate how the margins required by IEEE Standard 323-1974 (temperature, pressure, etc.) have been accounted for.
8. It is noted that the WF3 valve is different from the Parent valves in size (3/4” vs. 2”, 1”), flow capacity, position configuration (such as normally closed for WF3 vs. normally open for Parent valve), number of reed switches (4 position for WF3 vs. 2 position for Parent valves), and lead conductors to the solenoids. Please

explain how these differences will not adversely impact the WF3 valve from performing its safety function in its proposed application, location, configuration (packaging, mounting, and type of connections), and environment (service condition). Also show how the type of technology used to design and manufacture the valves is similar.