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10 CFR 50.55a

ATTN: Document Control Desk
United States Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT:
Perry Nuclear Power Plant
Docket No. 50-440, License No. NPF-58
Response to Request for Additional Information Regarding Relief Request IR-056, Revision 0 (TAC No. MD8198)

In a letter dated July 31, 2008, the Nuclear Regulatory Commission (NRC) staff requested additional information related to Relief Request IR-056, Revision 0, which is a request for the Perry Nuclear Power Plant for relief from certain Inservice Inspection requirements associated with the implementation of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. The Attachment provides the response to the Staff's questions related to Relief Request IR-056, Revision 0.

There are no regulatory commitments contained in this letter. If there are any questions, or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 761-6071.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 28, 2008.

Sincerely,

Kurt Krueger

for Mark B. Bezilla

A047
NRR

Attachment:
Response to Request for Additional Information Related to Relief Request IR-056

cc: NRC Region III Administrator
NRC Resident Inspector
NRR Project Manager
Utility Radiological Safety Board

The following supplemental information is provided to respond to a Request for Additional Information (RAI) that was provided on July 31, 2008. The NRC questions are repeated below, in bold, and are followed by the FirstEnergy Nuclear Operating Company (FENOC) responses for the Perry Nuclear Power Plant (PNPP).

Section 4.1 item 5 of the BWRVIP-100-A report, "Updated Assessment of the Fracture Toughness of Irradiated Stainless Steel for BWR Core Shrouds," dated August 2006, states that fracture toughness values of stainless steel materials that are exposed to neutron fluence values greater than 1 X 10^{21} n/cm^2 (E > 1 MeV) are lower than those used in Appendix C of the BWRVIP-76 report, "BWR Core Shroud Inspection and Flaw Evaluation Guidelines." Discuss the following:

(1) Confirm that your planned inspections of the PNPP core shroud and/or core shroud repair hardware for the second 10-year ISI interval are consistent with both BWRVIP-76 and BWRVIP-100-A;

Response to Request 1: PNPP's core shroud is an un-repaired core shroud and in accordance with Boiling Water Reactor Vessel and Internals Project (BWRVIP) report BWRVIP-76, it is categorized as a Category B Shroud. As such, full volumetric (ultrasonic) and/or two-sided surface examination of the H3, H4, H6A and H7 horizontal welds are required. These welds have already been ultrasonically examined twice during the second 10-year Inservice Inspection (ISI) interval: in RFO7 (1999) and in RFO10 (2005). The RFO7 examinations were performed before BWRVIP-100 (Reference 1) was published in December 2001. Given the coverages achieved in RFO7 and in accordance with BWRVIP-76 requirements, the shroud was scheduled for re-inspection in RFO10. Prior to RFO10, the BWRVIP-100 requirements were considered and an evaluation of the shroud fluence at the end of Cycle 10 (EOC10) was performed. The results of the evaluation are documented in Report GE-NE-0000-0025-6721-R0 (Reference 2). The peak fluence for weld H4 was predicted to be 1.21 x 10^{21} n/cm^2. The peak fluence for the other welds was predicted to be below 1 x 10^{21} n/cm^2. With the fluence for weld H4 exceeding 1 x 10^{21} n/cm^2, the requirements of BWRVIP-100 would have been applied if there was a need to perform flaw evaluations. However, when H4 was examined during RFO10, the coverage achieved was 99% and no flaws were identified, so no flaw evaluations were required. Given the improved coverages achieved in RFO10, the re-inspection interval for the core shroud welds is ten years (RFO15), which will be in the third 10-year interval and is beyond the scope of IR-056, Rev. 0. In conclusion, the inspections completed for the core shroud are consistent with the guidelines of BWRVIP-76 and BWRVIP-100, and based on the RFO10 examination results, no further core shroud inspections are scheduled for the second 10-year interval.

(2) Identify components that will be inspected to BWRVIP guidelines and have a neutron fluence greater than 1 X 10^{21} n/cm^2 (E > 1 MeV);

Response to Request 2: As stated in the response to Request 1, the neutron fluence for weld H4 was predicted per BWRVIP guidance to be greater than 1 x 10^{21} n/cm^2 and based on the RFO10 examination results, no further core shroud inspections are scheduled for the second 10-year interval.

(3) For components with neutron fluence greater than 1 X 10^{21} n/cm^2 (E > 1 MeV), identify the fracture toughness to be used to determine the inspection requirements for the core shroud. Explain how the fracture toughness is used to determine the inspection requirements in accordance with BWRVIP-76.

Response to Request 3: As discussed in the response to Request 1, the fluence for weld H4 exceeded 1 x 10^{21} n/cm^2 and the peak fluence for the other welds was predicted to be below 1 x 10^{21} n/cm^2. H4 was examined during RFO10, and the coverage achieved was 99% with no flaws identified. Therefore, no flaw evaluations were required for weld H4 and fracture toughness considerations are not applicable. In accordance with Figure 2-2 of BWRVIP-76, for Category B shroud welds where the cracking is less than 10% of the inspected length of the weld, and the inspected length of the weld is greater than 50% of the length of the weld, the inspection requirements are taken directly from Table 2-1.

References:

1. EPRI Report 1003016, BWRVIP-100: BWR Vessel and Internals Project, Updated Assessment of the Fracture Toughness of Irradiated Stainless Steel for BWR Core Shrouds, December 2001

2. GE-NE-0000-0025-6721-R0, Perry 1 Shroud Fluence Evaluation for EOC10, May 2004