



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 8, 2009

Mr. Peter P. Sena III  
Site Vice President  
FirstEnergy Nuclear Operating Company  
Beaver Valley Power Station  
Mail Stop A-BV-SEB1  
P.O. Box 4, Route 168  
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NO. 2 - REQUEST FOR  
ADDITIONAL INFORMATION RE: ALTERNATIVE REPAIR METHODS FOR  
REACTOR VESSEL HEAD PENETRATIONS & J-GROOVE WELDS RELIEF  
REQUEST (TAC NO. MD9970)

Dear Mr. Sena:

By letter dated October 9, 2008, FirstEnergy Nuclear Operating Company submitted a relief request for approval of a proposed alternative to certain requirements associated with reactor vessel weld repairs to be used during the remainder of the current Beaver Valley Power Station, Unit No. 2 10-year inservice inspection interval, which ends August 28, 2018.

The Nuclear Regulatory Commission (NRC) staff is reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). The NRC staff is requesting a response to the RAI within 45 days of receipt.

If you have any questions regarding this issue, please contact me at (301) 415-1016.

Sincerely,

A handwritten signature in black ink, appearing to read "Nadiyah S. Morgan", is written over a horizontal line.

Nadiyah S. Morgan, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-412

Enclosure:  
RAI

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
RELIEF REQUEST REGARDING PROPOSED ALTERNATIVE REPAIR METHODS  
FOR REACTOR VESSEL HEAD PENETRATIONS AND J-GROOVE WELDS  
FIRSTENERGY NUCLEAR OPERATING COMPANY  
BEAVER VALLEY POWER STATION, UNIT NO. 2  
DOCKET NO. 50-412

By letter dated October 9, 2008, (Agencywide Document Access and Management System (ADAMS) Accession No. ML083080296), FirstEnergy Nuclear Operating Company (licensee) submitted a relief request for approval of a proposed alternative to certain requirements associated with reactor vessel weld repairs to be used during the remainder of the current Beaver Valley Power Station, Unit No. 2 (BVPS-2) 10-year inservice inspection interval, which ends August 28, 2018. In order to complete the review of the document listed above, the Nuclear Regulatory Commission staff needs the following additional information:

1. In Section 5.1 of Enclosure A, it was stated that the depth of the excavated cavity of an inside diameter (ID) axial flaw repair will be no greater than 0.125-inch. This is different than the requirements of WCAP-15987, Revision 2-A, Section 2.2.1, on which this repair process is based.
  - a. Justify the change in cavity depth from the requirement of WCAP-15987.
  - b. How many layers of weld overlay will be applied to a 0.125-inch deep cavity?
  - c. How will the ID be restored?
  - d. Discuss the expected chemistry of the weld overlay surface, if overlay layers are applied in a 0.125-inch depth cavity and the surface is restored to maintain the desired ID.
2. The repair of an outside diameter circumferential flaw below the J-groove weld was specifically excluded from the embedded flaw repair process, as discussed in Section 2.1 of WCAP-15987. If this repair is to be included, please describe the repair procedure, nondestructive examination, and acceptance criteria.
3. Describe how far the J-groove weld overlay will extend onto the penetration tube, as discussed in Section 5.2.2 and 5.2.3 of Enclosure A of the licensee's submittal.
4. As discussed in Section 5.2.6 of Enclosure A of the licensee's submittal, justify the change in the number of layers of weld overlay applied to base metal locations from that specified in Section 2.1 of WCAP-15987.
5. Discuss whether there is a potential for hot cracking due to high sulfur content ( $>0.01\%$ ) of the 308 stainless steel cladding when Alloy 52 weld overlay is applied.

Enclosure

6. In Section 5.3 of Enclosure A of the licensee's submittal, it is stated that, "The residual stresses produced by the embedded flaw technique have been measured and found to be relatively low..." Please provide information on the measurement technique used and measurement data.
7. In Section 5.3 of Enclosure A of the licensee's submittal, it is also stated that, "the post-repair examinations...will be performed in accordance with those described in the Westinghouse Electric Company letter to the NRC dated October 1, 2003 (Reference 8)." ... "Future inspections of reactor vessel head penetrations and J-groove welds repaired utilizing the embedded flaw repair process, along with submission of any necessary reports, will be in accordance with 10 CFR 50.55a(g)(6)(ii)(D), which requires implementation of Code Case N-729-1 with certain conditions." Will post repair examination inspection be performed using the requirements of Code Case N-729-1 with conditions prior to return of service?

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/ra/

Nadiyah S. Morgan, Project Manager  
Plant Licensing Branch I-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-412

Enclosure:

RAI

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\*Input received. No substantial changes made.

\*\*Concurred by email

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