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Fax: 724-643-8069December 19, 2008
L-08-376

10 CFR 54

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:

Beaver Valley Power Station, Unit Nos. 1 and 2
BV-1 Docket No. 50-334, License No. DPR-66
BV-2 Docket No. 50-412, License No. NPF-73
Supplemental Information for the Review of the Beaver Valley Power Station Units 1 and 2 License Renewal Application (TAC Nos. MD6593 and MD6594) and License Renewal Application Amendment No. 32

The Reference provided the FirstEnergy Nuclear Operating Company (FENOC) License Renewal Application (LRA) for the Beaver Valley Power Station (BVPS). The attached supplemental information related to LRA Section 3.1.2.2 provides additional detail. In addition, a typographical error in Table A.5-1 of the LRA is corrected. This letter provides the supplemental information and Amendment No. 32 to the LRA.

The Attachment provides the supplemental information. The Enclosure provides Amendment No. 32 to the BVPS LRA.

There are no regulatory commitments contained in this letter. If there are any questions or if additional information is required, please contact Mr. Clifford I. Custer, Fleet License Renewal Project Manager, at 724-682-7139.

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 19, 2008.

Sincerely,



Peter P. Sena III

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NRR

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References:

FENOC Letter L-07-113, "License Renewal Application," August 27, 2007.

Attachment:

Supplemental Information Regarding Beaver Valley Power Station, Units 1 and 2,
License Renewal Application, Section 3.1.2.2

Enclosures:

Amendment No. 32 to the BVPS License Renewal Application

cc: Mr. K. L. Howard, NRC DLR Project Manager
Mr. S. J. Collins, NRC Region I Administrator

cc: w/o Attachment or Enclosure
Mr. B. E. Holian, NRC DLR Director
Mr. D. L. Werkheiser, NRC Senior Resident Inspector
Ms. N. S. Morgan, NRC DORL Project Manager
Mr. D. J. Allard, PA BRP/DEP Director
Mr. L. E. Ryan, PA BRP/DEP

ATTACHMENT
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Supplemental Information Regarding
Beaver Valley Power Station, Units 1 and 2,
License Renewal Application,
Section 3.1.2.2
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Section 3.1.2.2.2.4

FENOC is providing clarification on how the additional inspection procedures for the BVPS Unit 2 steam generator shell-to-transition cone welds address the NRC's ultrasonic testing, non-destructive evaluation recommendations in NRC Information Notice (IN) 90-04.

CLARIFICATION 3.1.2.2.2.4

Augmented examinations of the Unit 2 steam generator upper shell to transition girth welds were performed using ultrasonic testing (UT) methods in response to NRC IN 90-04, with no degradation identified. In order to distinguish innocuous reflectors from cracks, qualified NDE level II or III inspectors used 0 degree straight beam and 45 and 60 degree shear wave angles, at gain settings ranging from a minimum of +6 dB to as much as +20 dB above a reference level established using side-drilled holes in the calibration block. The steam generators at BVPS Unit 2 are the original generators installed intact, with factory welds at the upper shell to transition cone. The physical configuration of the welds (ground flush both inside and outside) was such that there were no surface ripples or other geometric features associated with the welds that would produce UT reflectors.

Section 3.1.2.2.14

FENOC did not clarify in LRA Section 3.1.2.2.14 whether loss of material due to flow-accelerated corrosion (FAC) is anticipated to occur in the steam generator (SG) feedrings or supports, or if it is, whether the progression of FAC in the components would only occur at an extremely slow growth rate. FENOC is providing additional justification for crediting the One-Time Inspection Program as the aging management basis in lieu of proposing to use a periodic condition monitoring program for aging management of loss of material due to FAC.

CLARIFICATION 3.1.2.2.14

Erosion/corrosion or Flow-Accelerated Corrosion (FAC) is not expected to occur in the Beaver Valley Power Station (BVPS) Unit 1 or BVPS Unit 2 steam generator feedwater

rings, based on previous inspections. FENOC assigned the One-time Inspection program to confirm that degradation is not occurring.

Loss of material of the feedwater rings is represented by three rows in LRA Table 3.1.2-3 (rows 178, 179, and 180), with three aging management programs (AMPs) assigned.

- The Steam Generator Tube Integrity program manages loss of material due to general, pitting, and crevice corrosion. Table 3.1.2-3, row number 179 is aligned to NUREG-1801 (GALL) row IV.D1-9 (RP-16).
- The Water Chemistry program is credited with mitigating the effects of aging through controlling feedwater chemistry. Table 3.1.2-3, row number 180, is also aligned to GALL row IV.D1-9 (RP-16).
- The One-Time Inspection program verifies that loss of material due to FAC is not occurring. Table 3.1.2-3, row number 178 is aligned to GALL row IV.D1-26 (R-51).

GALL row IV.D1-26 (R-51) specifies a plant-specific AMP for aging management and references NRC Information Notice (IN) 91-19, "Steam Generator Feedwater Distribution Piping Damage." IN 91-19 identified a potential concern resulting from degradation of feedwater distribution piping due to thermal stress, cracking, erosion and corrosion.

In response to IN 91-19, results of inspections of the BVPS Unit 1 feedwater rings in all three steam generators (conducted during the Unit 1 eighth refueling outage) were reviewed. The results were:

- No damage to the feedwater rings or supports were noted.
- Feedwater ring wall thickness readings had been taken in a prior outage. FAC effects in the feedwater ring itself were negligible.
- BVPS Unit 2 feedwater ring inspections were deemed to be unnecessary at the time because of the similarity of design between the Units.

Based on these findings, FAC is not expected to occur in the BVPS feedwater rings. However, to confirm the absence of aging effects, FENOC assigned the One-Time Inspection program to the feedwater rings in the BVPS LRA.

See the Enclosure to this letter for the revision to the BVPS LRA.

ENCLOSURE

Beaver Valley Power Station (BVPS), Unit Nos. 1 and 2

Letter L-08-376

**Amendment No. 32 to the
BVPS License Renewal Application**

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**License Renewal Application
Sections Affected**

Section 3.1.2.2.4

Section 3.1.2.2.14

The Enclosure identifies the correction by Affected License Renewal Application (LRA) Section, LRA Page No., and Affected Paragraph and Sentence. The count for the affected paragraph, sentence, bullet, etc. starts at the beginning of the affected Section or at the top of the affected page, as appropriate. Below each section the reason for the change is identified, and the sentence affected is printed in *italics* with deleted text *lined-out* and added text underlined.

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Section 3.1.2.2.2.4	Page 3.1-7	3 rd Paragraph (on page 3.1-8)

FirstEnergy Nuclear Operating Company (FENOC) is providing additional clarification on how the additional inspection procedures for the BVPS Unit 2 steam generator shell-to-transition cone welds address the NRC's ultrasonic testing, non-destructive evaluation recommendations in NRC Information Notice (IN) 90-04. The third paragraph of Section 3.1.2.2.2.4 is revised to read:

The replacement steam generators in use at BVPS for Unit 1 are Model 54F generators; Unit 2 has Model 51 generators. Additional inspection requirements have been incorporated into the ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD Program (Section B.2.2) to detect general and pitting corrosion and the resulting corrosion-fatigue cracking in the Unit 2 Model 51 steam generators. Augmented examinations of the Unit 2 steam generator upper shell to transition girth welds were performed using ultrasonic testing (UT) methods in response to NRC IN 90-04, with no degradation identified. In order to distinguish innocuous reflectors from cracks, qualified NDE level II or III inspectors used 0 degree straight beam and 45 and 60 degree shear wave angles, at gain settings ranging from a minimum of +6 dB to as much as +20 dB above a reference level established using side-drilled holes in the calibration block. The steam generators at BVPS Unit 2 are the original generators installed intact, with factory welds at the upper shell to transition cone. The physical configuration of the welds (ground flush both inside and outside) was such that there were no surface ripples or other geometric features associated with the welds that would produce UT reflectors.

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Section 3.1.2.2.14	Page 3.1-12	2nd Paragraph (top of page 3.1-13)

FENOC is providing additional justification for crediting the One-Time Inspection Program as the aging management basis in lieu of proposing to use a periodic condition monitoring program for aging management of loss of material due to flow-accelerated corrosion (FAC). The second paragraph of Section 3.1.2.2.14 is revised to read:

BVPS uses the One-Time Inspection Program (Section B.2.30) to manage loss of material due to flow-accelerated corrosion of the steam generator feedwater rings. In response to IN 91-19, results of inspections of the BVPS Unit 1 feedwater rings in all three steam generators (conducted during the Unit 1 eighth refueling outage) were reviewed. The results were:

- No damage to the feedwater rings or supports were noted.*
- Feedwater ring wall thickness readings had been taken in a prior outage. FAC effects in the feedwater ring itself were negligible.*
- BVPS Unit 2 feedwater ring inspections were deemed to be unnecessary at the time because of the similarity of design between the Units.*

Based on these findings, flow-accelerated corrosion is not expected to occur in the BVPS feedwater rings. However, to confirm the absence of aging effects, FENOC assigned the One-Time Inspection program to the feedwater rings in the BVPS LRA.

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Table A.5-1	Page A.5-9	Commitment No. 27 (as amended by FENOC Letters L-08-209 and L-08-212)

The original Commitment No. 27 in Table A.5-1 of the BVPS LRA was deleted in FENOC Letter L-08-209. A new Commitment No. 27 was added in FENOC Letter L-08-212. During a recent review a typographical error was discovered by FENOC in Commitment No. 27. Table A.5-1, Commitment No. 27 is amended to read as follows:

Item No.	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
27	<i>With the exception of underground GeoFlex® fuel oil piping, prior to the period of extended operation, FENOC will perform repetitive maintenance tasks to replace, or to test and replace on condition, mechanical system elastomeric polymer components that would otherwise be subject to aging management review. Subsequent frequencies of the repetitive tests/replacements will be based on manufacturer recommendations and applicable operating experience.</i>	May 27, 2027	<i>FENOC Letter L-08-212 and FENOC Letter L-08-376</i>	None