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September 2, 2009
L-09-242

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. 40

Reference 1 provided the FirstEnergy Nuclear Operating Company (FENOC) License Renewal Application (LRA) for the Beaver Valley Power Station (BVPS). Reference 2 provided Amendment No. 39 to Reference 1. This letter clarifies and expands information provided in Reference 2 as discussed in a September 1, 2009 telephone conference call between FENOC and the U. S. Nuclear Regulatory Commission (NRC).

The Attachment provides the clarification and expanded information. The Enclosure provides Amendment 40 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 September 2, 2009.

Sincerely,



Peter P. Sena III

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WRR

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References:

1. FENOC Letter L-07-113, "License Renewal Application," August 27, 2007.
2. FENOC Letter L-09-205, "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. 39," July 28, 2009.

Attachment:

Supplemental Information Regarding Beaver Valley Power Station, Units 1 and 2, License Renewal Application, Section B.2.3

Enclosure:

Amendment No. 40 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 B.2.3

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1. Describe the failure criteria for volumetric (UT) examination which will trigger the UT scanning at additional locations. In establishing the criteria, distinguish between the criteria used; (1) if the metal thinning is attributed to degradation on the inside surface of the liner, and (2) if the metal thinning is attributable to the exterior surface (in contact with the containment concrete) of the liner.

Metal thinning attributed to degradation on the inside surface of the liner will be managed in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI, Subsection IWE Program. The statistical sampling program is not applicable to degradation of the inside surface of the liner.

The statistical sample failure criteria for volumetric (ultrasonic testing (UT)) examinations of the concrete to liner interface is defined as greater than 10% loss of material from the nominal thickness that is characterized through engineering evaluation as pitting corrosion degradation indicative of foreign material. Industry and site specific operating experience (OE) has demonstrated that pitting corrosion degradation due to foreign material manifests with pits that have measurable breadth and shape. Locations with identified loss of material less than 10% but with a breadth and shape that potentially indicates the presence of foreign material will be entered into the corrective action program and tracked as a point of interest for monitoring during subsequent outages until dispositioned by trending.

FENOC intends to characterize locations with greater than 10% loss of material and displaying breadth and shape as statistical failures unless through engineering evaluation it is determined that indications are attributed to fabrication/erection practices. Samples with greater than 10% loss of material would be entered into the corrective action program and re-examined during subsequent outages until dispositioned by trending.

Unit 1 inspections for the initial sample lot of a minimum of 75 random samples will be completed in the next three refueling outages, beginning with the next Unit 1 refueling outage in 2010. Results will be available for on-site review and included in the summary report letter as described in Question 3.

2. Describe how you intend to statistically analyze the results of the UT examinations of the random and non-random samples (e.g., Kriging analysis or similar method) to determine the general state of the liner. Provide justification that your approach will adequately characterize the general state of the liner.

The purpose of the random sampling plan is to make valid characterizations about the general state of the containment liner. The random sampling plan includes 100% UT of a minimum of seventy-five (75) 1-ft x 1-ft square areas randomly selected on the accessible ultrasonically untested portion of the containment liner per unit. The completion of the random sampling is designed to provide a confidence level of 95% that 95% of the ultrasonically untested containment liner is not experiencing localized pitting corrosion degradation that would challenge the integrity of the containment liner.

FENOC will evaluate if an appropriate/applicable statistical method exists to gain additional insight into potential liner degradation. Data gathered will be evaluated and used to determine the general state of the liner.

3. Discuss your plans to submit the results of the UT examinations, and any associated analyses, to the NRC.

The results (data and analysis) of random sample testing and non-random sample testing, will be maintained as program/plant records. Data or evaluations that constitute failed acceptance criteria will be documented in the corrective action program. FENOC will provide a summary of the UT testing results as docketed information after each completed outage where sampling has been performed.

Unit 1 inspections for the initial sample lot of 75 random samples will be completed in the next three refueling outages, beginning with the next Unit 1 refueling outage in 2010. Results will be available for on-site review.

4. Provide additional details on the criteria for selecting the locations of the minimum of 8 non-random samples, e.g., the location of the through-wall hole identified in April 2009, areas that have required coating, and areas where the wood spacers are likely to have been placed during construction based on a review of construction drawings. Provide justification for the adequacy of using 8 samples.

The initial non-random sample population will be a minimum of 8 selected locations as determined by engineering judgment. These locations will be selected from locations that are in UT accessible locations and are not previously ultrasonically tested locations. Additionally, site-specific and industry OE is to be used to determine locations that are susceptible to localized foreign material induced corrosion.

The following criteria will be considered for selection of the Unit 1 non-random sample population:

1. Locations that have required re-painting more than once. These are areas where the inside liner topcoat has required rework. The primer coat was intact at these locations.
2. Locations that have irregular contour.
3. The area approximately five feet below the lower one-third of the 2006 Steam Generator Replacement construction opening. This area was exposed to water from hydro-demolition of the exterior concrete.
4. The containment liner surface between Elevations 725' and 735' (final grade level). External surface of the concrete in this area has a greater potential for exposure to moisture. The liner surface area with adjoining buildings will not be considered for non-random sampling.
5. An area approximately 4.5-square feet horizontal to the 2009 through wall location on either side.

The following criteria will be considered for selection of the Unit 2 non-random sample population:

1. Locations that have required re-painting more than once. These are areas where the inside liner topcoat has required rework. The primer coat was intact at these locations.
2. Locations that have irregular contour.
3. The containment liner surface between Elevations 725' and 735' (final grade level). External surface of the concrete in this area has a greater potential for exposure to moisture. The liner surface area with adjoining buildings will not be considered for non-random sampling.

5. Describe your plans to share your results and findings with Electric Power Research Institute and other industry groups.

FENOC plans to share the results of the containment liner sampling plan with the industry through contact with industry groups. The FENOC contact person would normally be the program owner.

ENCLOSURE

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

Letter L-09-242

Amendment No. 40 to the
BVPS License Renewal Application

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License Renewal Application Sections Affected

Table A.4-1

Table A.5-1

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*.

Affected LRA Section **LRA Page No.** **Affected Paragraph and Sentence**

Table A.4-1 **Page A.4-9** **New Item No. 34**

LRA Table A.4-1, "Unit 1 License Renewal Commitments," is amended to add new Item No. 34, regarding examinations of the containment liner, as follows:

Item Number	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
<u>34</u>	<u><i>A summary of results for each phase of volumetric testing (described in Unit 1 Commitments No. 32 and No. 33 in LRA Amendment No. 39) will be documented in a letter to the NRC.</i></u>	<u><i>January 29, 2016</i></u>	<u><i>FENOC Letter L-09-242</i></u>	<u><i>None</i></u>

Affected LRA Section **LRA Page No.** **Affected Paragraph and Sentence**

Table A.4-1 **Page A.4-9** **New Item No. 35**

LRA Table A.4-1, "Unit 1 License Renewal Commitments," is amended to add new Item No. 35, regarding examinations of the containment liner, as follows:

Item Number	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
<u>35</u>	<u><i>FENOC will evaluate if an appropriate/applicable statistical method exists to gain additional insight into potential liner degradation. Data gathered will be evaluated and used to determine the general state of the liner.</i></u>	<u><i>January 29, 2016</i></u>	<u><i>FENOC Letter L-09-242</i></u>	<u><i>None</i></u>

Affected LRA Section **LRA Page No.** **Affected Paragraph and Sentence**

Table A.4-1 **Page A.4-9** **Item No. 32**

Commitment No. 32 in LRA Table A.4-1, "Unit 1 License Renewal Commitments," is revised as follows:

Item Number	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
32	Supplemental volumetric examinations will be performed on the Unit 1 containment liner prior to the period of extended operation. Seventy-five (one foot square) randomly selected (as described in FENOC Letter L-09-205) sample locations will be examined (as described in FENOC Letter L-09-242). If degradation is identified, it will be addressed through the corrective action program.	<i>Examinations will commence by the end of the Unit 1 Refueling Outage in 2010. Unit 1 inspections for the initial sample lot of 75 random ultrasonic examinations will be completed in the next three refueling outages, beginning with the Unit 1 refueling outage in 2010. Examinations will be completed by January 29, 2016</i>	FENOC Letter L-09-205 <i>and</i> FENOC Letter L-09-242	None

Affected LRA Section **LRA Page No.** **Affected Paragraph and Sentence**

Table A.5-1 **Page A.5-10** **New Item No. 35**

LRA Table A.5-1, "Unit 2 License Renewal Commitments," is amended to add new Item No. 35, regarding examinations of the containment liner, as follows:

Item Number	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
<u>35</u>	<u>A summary of results for each phase of volumetric testing (described in Unit 2 Commitments No. 33 and No. 34 in LRA Amendment No. 39) will be documented in a letter to the NRC.</u>	<u>May 27, 2027</u>	<u>FENOC Letter L-09-242</u>	<u>None</u>

Affected LRA Section **LRA Page No.** **Affected Paragraph and Sentence**

Table A.5-1 **Page A.5-10** **New Item No. 36**

LRA Table A.5-1, "Unit 2 License Renewal Commitments," is amended to add new Item No. 36, regarding examinations of the containment liner, as follows:

Item Number	Commitment	Implementation Schedule	Source	Related LRA Section No./ Comments
<u>36</u>	<u>FENOC will evaluate if an appropriate/applicable statistical method exists to gain additional insight into potential liner degradation. Data gathered will be evaluated and used to determine the general state of the liner.</u>	<u>May 27, 2027</u>	<u>FENOC Letter L-09-242</u>	<u>None</u>