



FirstEnergy Nuclear Operating Company

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June 9, 2008
L-08-189

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

Reply to Request for Additional Information for the Review of the Beaver Valley Power Station, Units 1 and 2, License Renewal Application (TAC Nos. MD6593 and MD6594), License Renewal Application Amendment No. 11, and Revised License Renewal Boundary Drawings

Reference 1 provided the FirstEnergy Nuclear Operating Company (FENOC) License Renewal Application (LRA) for the Beaver Valley Power Station (BVPS). Reference 2 provided LRA Boundary Drawings. Reference 3 requested additional information from FENOC regarding BVPS license renewal scoping in Sections 2.2, 2.3.3.22, 2.3.3.25, 2.3.3.26, 2.3.3.27, 2.3.3.29, 2.3.3.30, 2.3.3.31, 2.3.3.32, 2.3.4.1, 2.3.4.6, 2.3.4.7 and 2.3.4.9 of the BVPS LRA.

The Attachment provides the FENOC reply to the U.S. Nuclear Regulatory Commission request for additional information. Enclosure A provides Amendment No. 11 to the BVPS License Renewal Application. Enclosure B provides revised BVPS LRA Boundary Drawings.

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.

AL108
NRR

I declare under penalty of perjury that the foregoing is true and correct. Executed on June 9, 2008.

Sincerely,



Peter P. Sena III

References:

1. FENOC Letter L-07-113, "License Renewal Application," August 27, 2007.
2. FENOC Letter L-07-118, "License Renewal Application Boundary Drawings," August 27, 2007.
3. NRC Letter, "Request for Additional Information for the Review of the Beaver Valley Power Station, Units 1 and 2, License Renewal Application (TAC Nos. MD6593 and MD6594)," May 8, 2008.

Attachment:

Reply to Request for Additional Information Regarding Beaver Valley Power Station, Units 1 and 2, License Renewal Application, Sections 2.2, 2.3.3.22, 2.3.3.25, 2.3.3.26, 2.3.3.27, 2.3.3.29, 2.3.3.30, 2.3.3.31, 2.3.3.32, 2.3.4.1, 2.3.4.6, 2.3.4.7 and 2.3.4.9

Enclosures:

- A. Amendment No. 11 to the BVPS License Renewal Application
- B. Revised BVPS License Renewal Application Boundary Drawings

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

cc: w/o Attachment or Enclosures
Dr. S. S. Lee, NRC DLR Acting Director
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ATTACHMENT
L-08-189

Reply to Request for Additional Information Regarding
Beaver Valley Power Station, Units 1 and 2,
License Renewal Application,
Sections 2.2, 2.3.3.22, 2.3.3.25, 2.3.3.26, 2.3.3.27, 2.3.3.29,
2.3.3.30, 2.3.3.31, 2.3.3.32, 2.3.4.1, 2.3.4.6, 2.3.4.7 and 2.3.4.9
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Question RAI 2.2-3

In license renewal application (LRA) Table 2.2-5, Structures Not Within Scope of License Renewal, the applicant identifies those structures that are not within the scope of license renewal (LR) in accordance with 10 CFR 54.4. In this table, the applicant identifies that the North Pipe Trench is not within the scope of LR. However, LR drawing, License Renewal Structures, identifies that the North Pipe Trench is adjacent to the Valve Pit structure, which is within the scope of LR. In LRA Section 2.4.32, the applicant describes the Unit 2 Valve Pit as a safety-related, seismic Category I structure that houses safety-related equipment in a reinforced concrete, subsurface structure. There was no mention of preventative measures (e.g., shake space) that would separate the Valve Pit structure from the nonsafety-related adjacent North Pipe Trench.

- a) Verify that there are appropriate measures to prevent interaction between the North Pipe Trench and the Valve Pit structure, or include the North Pipe Trench in scope for LR.**
- b) Verify whether there is any piping between the North Pipe Trench and the Valve Pit structure that should be included in scope for LR.**

RESPONSE RAI 2.2-3

The North Pipe Trench has been added to the scope of License Renewal (see FirstEnergy Nuclear Operating Company (FENOC) Letter L-08-150 dated May 8, 2008, ML081410416) because the scoping endpoint of a nonsafety-related pipe directly attached to safety-related piping in the Beaver Valley Power Station (BVPS), Unit 2, Valve Pit, was determined to be located within the North Pipe Trench.

- a) The safety-related BVPS Unit 2 Valve Pit is isolated from interaction with the nonsafety-related North Pipe Trench by a 4-inch shake space.
- b) There is only one pipe that runs between the safety-related Unit 2 Valve Pit and the nonsafety-related North Pipe Trench, and the pipe is within scope for leakage boundary and structural integrity (attached) within the Valve Pit. The final support credited for the equivalent anchor associated with this pipe is located within the North Pipe Trench.

Background:

The North Pipe Trench provides connections between the units for various nonsafety-related systems, such as water treatment, turbine lube oil, and auxiliary steam. The adjacent Unit 2 Valve Pit is associated with the connections between the nonsafety-related Standby Service Water and the safety-related Service Water systems. The piping and components within the valve pits are in-scope. The Valve Pit is a separate structure, and is unrelated to the North Pipe Trench.

The pipe that runs between the North Pipe Trench and the Unit 2 Valve Pit is a retired 3-inch chlorination pipeline that cross-connects between Unit 1 downstream of valve 1WT-389 (see LR Drawing 1-32-6, non-highlighted pipe in location D-10), and Unit 2 between motor-operated valves 2SWS-MOV562 & 563 (see LR Drawing 2-30-1 (Revision 4, provided by FENOC Letter L-08-150), location B-6). The scoping endpoint of this pipe is within the North Pipe Trench. LR Drawing LR-Structures (Revision 2, provided by FENOC Letter L-08-150) shows the North Pipe Trench within scope. BVPS License Renewal Application (LRA) Tables 2.2-4 and 2.2-5 (revisions provided in FENOC Letter L-08-150) identify the North Pipe Trench as an in-scope structure. The North Pipe Trench description is included in LRA Section 2.4.19 (Pipe Tunnel) (revision provided in FENOC Letter L-08-150) with a 10 CFR 54.4(a)(2) function. No changes to the AMR tables in LRA Section 3 are needed to address the addition. The Structures Monitoring Program is credited with aging management of the North Pipe Trench, presented in LRA Table 3.5.2-19.

Section 2.3.3.22 Post-Accident Sample System

Question RAI 2.3.3.22-1 (Unit 1)

In LRA Section 2.3.3.22, the applicant states that the Unit 1 post-accident sample system contains components with a nonsafety-related function in accordance with 10 CFR 54.4(a)(2) and contains components relied upon to demonstrate compliance with the environmental qualification regulation in accordance with 10 CFR 54.4(a)(3). On LR drawing 1-14C-1, the applicant highlights components of the post-accident sample system as being within the scope of LR. In this LRA section, the applicant states that the post-accident sample system is no longer credited by the current licensing basis (CLB) for its sampling function. In contrast, in Unit 1 updated final safety analysis report (UFSAR) Sections 11.3.3.3.27, 11.3.3.3.28, and 11.3.3.3.29, the applicant describes the operation and functions of the post-accident sample subsystems, which include the sampling function.

Justify the exclusion of the post-accident sample system sampling function from the Unit 1 CLB and from the scope of LR.

RESPONSE RAI 2.3.3.22-1 (Unit 1)

The Post Accident Sampling System (PASS) is not credited with any sampling function at either unit.

BVPS Unit 1 License Amendment 245 and Unit 2 Amendment 123 (ADAMS Accession Number ML012730012) eliminated the requirement to have and maintain the Post Accident Sampling System. The system is no longer credited with sampling functions, but the system components have not been physically removed. Unit 1 Updated Final Safety Analysis Report (UFSAR), Section 11.3.3.3 does not describe the PASS, but describes the Radiation Monitoring System. The radiation monitors described in UFSAR Sections 11.3.3.3.27, 11.3.3.3.28, and 11.3.3.3.29 are associated with the PASS, and their descriptions have not been changed in the UFSAR because the system has not been physically removed from the plant.

Section 2.3.3.25 Radiation Monitoring System

Question RAI 2.3.3.25-1 (Unit 2)

On LR drawing 2-43-18, the applicant shows the following detectors: 2HVS-RQ-109B, 2HVS-RQ-109C, 2HVS-RQ-101A, and 2HVS-RQ-101B. The drawing indicates that these detectors are in shielded enclosures. In Unit 2, UFSAR Section 11.5.2.3.2, the applicant states that an adequate amount of shielding is provided around each detector to reduce the background radiation to a level that will not interfere with detector sensitivity. Only the shielding for detector 2HVS-RQ-101A is highlighted, indicating that it is within the scope of LR and subject to aging management.

In LRA Table 2.0-1, the applicant identifies that the intended function of radiation shielding (SHD) is to reduce neutron or gamma radiation fluence. In LRA Table 2.3.3-25, Radiation Monitoring System Components Subject to Aging Management Review (AMR), the applicant only identifies the component type "radiation monitor" with intended functions of leakage boundary (spatial) and pressure boundary.

Justify the exclusion of the shielded enclosures for radiation detectors 2HVS-RQ-109B, 2HVS-RQ-109C, and 2HVS-RQ-101B from the scope of LR with an intended function of SHD.

RESPONSE RAI 2.3.3.25-1 (Unit 2)

Where radiation monitor shielding performs a function that supports the accurate detection and indication/alarm of radiation, it is considered to be an integral part of the active detector assembly, and not subject to aging management review per 10 CFR 54.21(a)(1)(i).

Degradation of shielding could result in increases in monitor indication, and would be identified during instrument calibrations. Since degradation of shielding would result in immediate changes in radiation monitor indication, the influence of shielding upon the function of the monitor is equivalent to that of the active electronic portion of the instrument.

The highlighting shown on LR Drawing 2-43-18 for 2HVS-RQ101A is intended to show the radiation monitor flowpath pressure boundary, and is not intended to imply that the shielding is subject to aging management review. 2HVS-RQ101A is a particulate detector, and the housing is highlighted as a pressure boundary. The drawing note "shielded enclosure" points to the housing. The other monitors referenced in this question are gas monitors, which have the shielded enclosure depicted separately on the drawing.

Section 2.3.3.26 Reactor Plant Sample System

Question RAI 2.3.3.26-1 (Unit 1)

On LR drawing 1-14A-1 at location G-6 for the sampling system, the applicant highlights radiation monitor RM ISS-100 as being within the scope of LR for 10 CFR 54.4(a)(2) for spatial concerns, (e.g., leakage, spray, pipe whip).

In LRA Table 2.3.3-26, the applicant identifies the component types that are subject to an AMR for the reactor plant sample system; however, the applicant does not identify "radiation monitor" as a component type. Radiation monitors should be included within the scope of LR and subject to an AMR for 10 CFR 54.4(a)(2) spatial concerns because they have an intended function of leakage boundary (spatial).

Justify the exclusion of the radiation monitor as a component type requiring an AMR with an intended function of leakage boundary (spatial) from LRA Tables 2.3.3-26 and 3.3.2-26.

RESPONSE RAI 2.3.3.26-1 (Unit 1)

Radiation monitor RM-1SS-100, appearing on LR Drawing 1-14A-1, grid G-6, should have been shown with system boundaries to place the monitor within the Radiation Monitoring System.

All in-scope radiation monitors are evaluated with the Radiation Monitoring System in LRA section 2.3.3.25 with AMR results summarized in LRA Table 3.3.2-25. LR Drawing 1-14A-1 is revised to show the system boundaries at RM-1SS-100. Additionally, the following LR Drawings are revised to ensure consistent presentation of this issue:

- LR Drawing 2-15-1 is revised to depict radiation monitor 2CCP-RQ100 within the Radiation Monitoring System, and to show the demineralized water flush line boundary to system 32 (Water Treatment).
- LR Drawings 2-27A-2 and 2-15-6 are revised to depict radiation monitor 2CNA-RQ100 and its sample cooler within the Radiation Monitoring System, and to show the demineralized water flush line boundary to system 32 (Water Treatment).
- LR Drawing 2-14A-1 is revised to depict radiation monitor 2SSR-RQ100 within the Radiation Monitoring System.

The lists of applicable license renewal drawings in LRA Section 2.3.3.25, "Radiation Monitoring System," and Section 2.3.4.10, "Water Treatment System," are revised to include these drawings.

Other radiation monitors that perform a pressure boundary or leakage boundary function for License Renewal are depicted within the Radiation Monitoring System.

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

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Section 2.3.3.27 Reactor Plant Vents and Drains System

Question RAI 2.3.3.27-1 (Unit 2)

On LR drawing 2-09-3, at various locations identified below, the applicant does not highlight ten tanks (shown as sumps) that house the sump pumps. The sump identification numbers and their drawing locations are as follows:

<u>Component</u>	<u>Location</u>
North Safeguards Area - 2DAS-TK201	B-1/2

Fuel Building - 2DAS-TK202	E/F-4/5
Northeast Auxiliary Building - 2DAS-TK203A	B6/7
Southeast Auxiliary Building - 2DAS-TK203B	C-8-10
West Auxiliary Building - 2DAS-TK203C	E-9/10
North West Auxiliary Building - 2DAS-TK203D	G-6/7
Tunnel 2DAS-TK206	D-4/5
Decontamination Building 2DAS-TK207	E/F-1/2
South Safeguards Area 2DAS-TK208	D-1/2
Gaseous Waste Storage Vault 2DAS-TK221	E/F-3

In LRA Table 2.3.3-27, the applicant identifies the component type “tank” as subject to an AMR with an intended function of leakage boundary (spatial). Justify the exclusion of the above tanks (sumps) from the scope of LR.

RESPONSE RAI 2.3.3.27-1 (Unit 2)

The tanks listed in the question are all building sumps and are all within the scope of License Renewal. However, one additional row is added to LRA Table 3.5.2-36 as a result of this question.

Sumps are evaluated as structural components, and are not highlighted on mechanical scoping drawings. Stainless steel sump liners are evaluated as a single bulk commodity for all sumps. The sumps are addressed in the following LRA tables:

<u>Sump</u>	<u>Unit 2 Structure</u>	<u>LRA Table / Row</u>
2DAS-TK201	Safeguards	3.5.2-25 / row 23
2DAS-TK202	Fuel Building	3.5.2-14 / row 31
2DAS-TK203A	Auxiliary Building	3.5.2-2 / row 30
2DAS-TK203B	Auxiliary Building	3.5.2-2 / row 30
2DAS-TK203C	Auxiliary Building	3.5.2-2 / row 30
2DAS-TK203D	Auxiliary Building	3.5.2-2 / row 30
2DAS-TK206	Main Steam Cable Vault	3.5.2-18 / row 30
2DAS-TK207	Decontamination Building	3.5.2-8 / row 10
2DAS-TK208	Safeguards	3.5.2-25 / row 23
2DAS-TK221	Gaseous Waste Storage Vault	3.5.2-15 / row 7
Sump liners (all)	Bulk commodities (all in-scope sumps)	3.5.2-36 / row 168

During review of the LRA for this question, it was noted that Table 3.5.2-36 only addressed the "Protected from weather" environment for sump liners. LRA Table 3.5.2-36 is revised to include an additional row to address the "Raw water" environment for sump liners.

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

Section 2.3.3.29 Security Diesel Generator System (Common)

Question RAI 2.3.3.29-1 (Common)

In LRA Section 2.3.3.29, the applicant states that the security diesel generator system's intended function is to provide power to station blackout and safe shutdown outdoor security perimeter lighting used for outdoor access/egress paths for Unit 1 and Unit 2. Therefore, the security diesel generator system is included within the scope of LR. On LR drawing 1-45F-1 for the security diesel generator system, the applicant highlights the security diesel generator fuel oil tank, NHS-TK-1, and the security diesel generator fuel oil day tank, NHS-TK-2, as being within the scope of LR for performing an intended function as defined in 10 CFR 54.4(a)(3). However, the applicant does not highlight the fuel oil tank fill line, vent line and flame arrestor; and the day tank vent line, at locations D4, D5, and C6, respectively. The vent lines and the flame arrestor support proper functioning of the fuel oil tanks and operation of the security diesel generator. The security diesel generator operability is necessary in order to meet its intended function for station blackout and fire protection.

Justify the exclusion of the above mentioned components from the scope of LR.

RESPONSE RAI 2.3.3.29-1 (Common)

The Security Diesel Generator System fuel oil tank fill line is not in scope because its failure would not result in leakage of fuel oil or loss of any function.

FENOC originally did not show the Security Diesel Generator System tank vents in scope because the vent lines are not expected to contain fluid, and piping integrity is not required to provide a vent. However, for consistency with the presentation for other fuel oil tanks, the Security Diesel Generator System vent piping and flame arrestor are added to license renewal scope.

Additionally, the vent piping and flame arrestors for the Emergency Response Facility (ERF) diesel generator fuel tanks are added to license renewal scope for consistency.

These additions result in the following LRA and LRA Boundary Drawing changes:

- LRA Tables 2.3.3-17 (ERF diesel generator) and 2.3.3-29 (Security diesel generator) are revised to include component type "Flame arrestor" with intended function "Flame suppression."
- LRA Tables 3.3.2-17 (ERF diesel generator) and 3.3.2-29 (Security diesel generator) are revised to add two rows to address the flame arrestors. No changes were necessary to address the vent piping.
- LR Drawings 1-45F-1 and 1-58E-1 are revised to include the fuel tank vent lines and flame arrestors.

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

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Section 2.3.3.30 Service Water System

Question RAI 2.3.3.30-1 (Unit 2)

On LR drawing 2-30-1 for the service water pumps 2SWS-P21A, P21B, and P21C, and on LR drawing 2-30-1A for the standby service water pumps 2SWE-P21A and P21B, the applicant highlights the motors, the pumps, a 3/4-inch line to a pump seal, and a 1-inch pipe entering and leaving the motors. The applicant highlights the components for performing an intended function as defined in 10 CFR 54.4(a)(1), (a)(2), or (a)(3). In LRA Table 2.3.3-30, the applicant includes the component type "pump casing" and "piping" as subject to an AMR. However, in LRA Table 2.3.3-30, the applicant does not include the component type motor housing or other highlighted component types (e.g., heat exchanger and pump seal cooler). These components supply cooling water to the service water pump motors/seals and should be within the scope of LR with an intended function of "leakage boundary (spatial)."

Justify the exclusion of "motor housing" and other applicable component types serviced by this cooling water from LRA Table 2.3.3-30 as subject to an AMR.

RESPONSE RAI 2.3.3.30-1 (Unit 2)

The Unit 2 service water and standby service water pump motor housings are highlighted to indicate that they contain fluid-retaining components needed to support intended functions. However, the internal motor components that provide the fluid pressure boundary and heat transfer functions are not long-lived and not subject to aging management review per 10 CFR 54.21(a)(1)(ii).

The Unit 2 safety-related service water pumps and nonsafety-related standby service water pumps (2SWS-P21A, B & C and 2SWE-P21A & B, respectively), shown on LR Drawings 2-30-1 and 2-30-1A, have motors with oil coolers that are supplied with cooling water. However, each cooler is replaced periodically at either a 10- or 15-year frequency based on plant operating experience. Replacement is scheduled by maintenance plans within the site maintenance planning program. Therefore, the motor oil coolers are not long lived, and are not subject to aging management review. There are no heat exchangers or other passive internal components associated with the seal/bearing water supply.

Section 2.3.3.31 Solid Waste Disposal System

Question RAI 2.3.3.31-1 (Unit 1)

On LR drawing 1-18-1, the applicant includes the note “functional locations tagged as boundary per TER 13287.”

In order to complete its review, the staff requests that the applicant describe and summarize TER 13287 with respect to its relationship to LR boundary drawings and LR scoping in accordance with 10 CFR 54.4.

RESPONSE RAI 2.3.3.31-1 (Unit 1)

Technical Evaluation Report (TER) 13287 documents the formal retirement of selected equipment within the Solid Waste System. The non-highlighted equipment shown on LR Drawing 1-18-1 and within the boundaries tagged per TER 13287 has been formally retired. The equipment has been isolated and drained, and the boundary valves are administratively controlled to maintain isolation. The equipment within the boundaries tagged for TER 13287 does not perform any function credited by the current licensing basis, and does not represent a potential source of fluid or energy interaction with any safety-related components. Therefore, the components within the boundaries tagged for TER 13287 are not within the scope of License Renewal.

Section 2.3.3.32 Supplementary Leak Collection and Release System

Question RAI 2.3.3.32-1 (Unit 2)

On LR drawing 2-16-2, the applicant highlights the following flow elements: 2HVS-FE-22 (E-8), 2HVS-FE-27 (8-4), 2HVS-FE-26 (C-4), 2HVS-FE-25 (E-4), and 2HVS-FE-24 (F-4). However, in LRA Table 2.3.3-32, the applicant does not list

component types such as “orifice,” which would include flow elements that are subject to an AMR.

Justify the exclusion of the component type “orifice” in LRA Table 2.3.3-32, from the scope of LR and subject to an AMR.

RESPONSE RAI 2.3.3.32-1 (Unit 2)

The flow elements in the Supplementary Leak Collection and Release System are not orifice-type components. Ventilation flow elements in the Supplementary Leak Collection and Release System do not function by causing a flow restriction that produces a differential pressure between the upstream and downstream flow. Rather, these components are essentially a section of ductwork that supports instrument piping connections for two sensing lines, one of which is exposed to total (impact) pressure by aligning the open end into the flow stream, and the other is exposed to static pressure by aligning the open end parallel to the ventilation flow stream, similar to an airplane’s pitot/static system. As such, the flow element is evaluated for License Renewal as “Duct,” with a pressure boundary function.

Section 2.3.4.1 Auxiliary Feedwater System

Question RAI 2.3.4.1-1 (Unit 1)

On LR drawing 1-24-2, the applicant does not highlight the following components as within the scope of LR and subject to an AMR: piping and valve body up to valve 351 for PI 1FW-155 (location E-7); piping and valve body up to valve 364 for PI 1FW-156B (location F-5); piping and valve body up to valve 628 (location E-6). These components are in the same flow paths as other components, that are highlighted as within scope and perform a similar function to those listed in LRA Table 2.3.4-1 (i.e., bolting, piping, tubing, and valve body) that are subject to an AMR with an intended function of pressure boundary.

Justify the exclusion of these components from the scope of LR with an intended function of pressure boundary.

RESPONSE RAI 2.3.4.1-1 (Unit 1)

Highlighting for these components was inadvertently omitted from the original drawing. LR Drawing 1-24-2 is revised to include highlighting for piping and valve body up to valve 1FW-351 (grid E-7, for PI 1FW-155), piping and valve body up to 1FW-364 (grid F-5; for PI-1FW-156B), and piping and valve body up to 1FW-628 (grid E-6). The

additional highlighting on the LR Drawing does not affect any aging management review results, and does not result in any changes to the LRA.

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Question RAI 2.3.4.1-2 (Unit 1)

In LRA Section 2.3.4.1, the applicant states that a separate dedicated auxiliary feedwater (AFW) pump FW-P-4 provides an alternate shutdown subsystem to the normal AFW system in the event of a fire in the AFW pump area. On license LR 1-24-3, the applicant highlights the flow path from turbine plant demineralized water tank WT-TK-11 to where the 4-inch dedicated AFW pump line ties into the 26-inch main feedwater line at location D-9 as within the scope of LR. On drawing 1-24-3, the applicant does not highlight components upstream of the piping connection at location D-9 (e.g., main feedwater piping, feedwater pump check valves, and first point feedwater heaters).

In order for the dedicated Unit 1 AFW system to meet its intended function of providing water to the steam generators in the event of a fire, that disables the primary AFW system pumps, the flow path must be capable of delivering the water to the steam. If there is a rupture of main feedwater piping between the main feedwater check valves (FW-001 and FW-002) and the piping junction of the four-inch dedicated AFW pump line, flow cannot be delivered to the steam generators. Hence, in the event of a failure of this piping the system intended function in accordance with 10 CFR 54.4(a)(3) for fire protection will not be met. Additionally, on Figure 4-4 of the Beaver Valley Power Station, Unit 1, Appendix R Report, the applicant shows the feedwater system Appendix R safe shutdown flow path. On Figure 4-4, the main feedwater pump check valves (FW-001 and FW-002) are shown as providing isolation for the dedicated AFW pump flow path to the steam generators.

Justify the exclusion of the main feedwater piping and components between the dedicated AFW pump pipe line to main feedwater line connection up to and including the main feedwater pump check valves (FW-001 and FW-002) from the scope of LR.

RESPONSE RAI 2.3.4.1-2 (Unit 1)

FENOC included in license renewal scope only the flowpath required for the 10 CFR 54.4(a)(3) function associated with the dedicated auxiliary feedwater pump. However, FENOC is expanding the scope for this (a)(3) function to include branch lines up to and including the first isolation valve from the flowpath, and upstream from the

main feedwater header to the main feedwater pump discharge check valves. LR Drawings are revised to highlight these branch lines in red for 10 CFR 54.4(a)(3).

Based on this change in LR scope, LR Drawings 1-22-1 , 1-24-1 , 1-24-3 , and 1-32-7 are revised. LR Drawing 1-24-1, Revision 6, however, has already incorporated the drawing changes for this request for additional information (RAI) response; Revision 6 was submitted to the NRC in FENOC letter L-08-123, dated April 3, 2008, in response to license renewal RAI 2.1-1. The remaining LR Drawings listed are included in an enclosure to this letter.

Additionally, the scope expansion detailed in this response results in the addition of the first point feedwater heaters to scope. "Heat exchanger (tube)", "Heat exchanger (channel)" and "Heat exchanger (tubesheet)" component types are added to scope for the Main Feedwater System as pressure boundary components (heat transfer function not required). LRA tables 2.3.4-6 and 3.4.2-6 are revised to include new rows for these heat exchanger components. This scope expansion does not affect other LRA Sections.

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

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Section 2.3.4.6 Main Feedwater System

Question RAI 2.3.4.6-1 (Unit 2)

On LR drawing 2-24-2A, the applicant shows the main feedwater regulating valves and bypass valves highlighted in blue, indicating that these valves are within scope of LR in accordance with 10 CFR 54.4(a)(2). In LRA Section 2.3.4.6, the applicant states that feedwater isolation valves, control valves, and control valve bypass valves will automatically close on receipt of a feedwater isolation signal to isolate main feedwater flow to the steam generators. In UFSAR, Section 15, the applicant states that the main feedwater control and bypass valves are required to close, following a main steam line break. In LRA Section 2.0, the applicant states, "The BVPS license renewal review methods are consistent with the approach recommended in Nuclear Energy Institute document NEI 95-10, *Industry Guidelines for Implementing the Requirements of 10 CFR 54 - The License Renewal Rule*, Revision 6." In accordance with NEI 95-10, these valves provide an isolation function and perform a safety-related function; therefore, these valves should be included within the scope of LR in accordance with 10 CFR 54.4(a)(1).

Include the main feedwater regulating valves and bypass valves within the scope for LR in accordance with 10 CFR 54.4(a)(1) or justify their exclusion. Evaluate

attached piping and supports, along with surrounding components, for inclusion in scope in accordance with 10 CFR 54.4(a)(2).

RESPONSE RAI 2.3.4.6-1 (Unit 2)

The Unit 2 main and bypass feedwater regulating valves (FRVs) are classified as safety-related in the plant equipment database and are in scope for license renewal in accordance with 10 CFR 54.4(a)(1); LR Drawing 2-24-2A is revised to highlight the valves in red. The piping on either side of the valves is not safety-related and is in scope for 10 CFR 54.4(a)(2) only.

The Unit 2 UFSAR identifies three safety-related functions of the system in Section 10.4.7.3. The FRVs are not credited for two of these functions. The feedwater isolation function is described in Section 10.4.7.3 as follows:

“Automatically isolate main feedwater flow to the steam generators following a feedwater isolation signal (Section 7.3). Redundant valves are provided for this function. The feedwater isolation valves are located in the main steam valve area with Seismic Category I supports and are designed to function with the environmental effects of a nonmechanistic pipe rupture. Valve closure time is described in Table 6.2-60. The feedwater control valves and bypass control valves, located in the service building, are located in NNS class lines. The feedwater control valve’s closure time plus the ESF signal will be ≤ 7 seconds. These lines and their supports are designed for seismic loads. Failure of these lines will not prevent feedwater isolation.”

All of the seismically-supported, nonsafety-related feedwater piping and supports within the Service Building are within the scope of License Renewal. Since failure of the feedwater lines will not prevent the active feedwater isolation function, and since the FRVs do not perform any other safety-related function, failure of directly connected piping or nonseismic supports in the Turbine Building will not prevent satisfactory accomplishment of any safety-related function. No directly-connected piping has been added to scope for 10 CFR 54.4(a)(2) related to the FRVs.

The scoping method FENOC applied included liquid and steam retaining components in safety-related structures within the scope of License Renewal. The Unit 2 Service Building is a safety-related structure, and all liquid and steam retaining components in the building are within scope. No components were added to scope for 10 CFR 54.4(a)(2) due to the evaluation of the FRVs as safety-related components.

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Question RAI 2.3.4.6-2 (Unit 1)

On license LR 1-24-1, the applicant shows the main feedwater regulating valves and bypass valves highlighted in red, which corresponds to components that are credited by the CLB for performing an intended function as defined in 10CFR 54.4 (a)(1), (a)(2), or (a)(3). This flow path is coincidental with an (a)(3) flow path.

Verify these valves are in scope for 10 CFR 54.4(a)(1).

RESPONSE RAI 2.3.4.6-2 (Unit 1)

The Unit 1 main and bypass feedwater regulating valves are classified as safety-related in the plant equipment database, and are in scope for license renewal in accordance with 10 CFR 54.4(a)(1). The piping on either side of the valves, however, is not safety-related, and is in scope for regulated event flowpath only. LR Drawing 1-24-1 has been revised to clearly depict the safety-related boundaries at these valves, and to show the (a)(2) directly-connected scoping boundaries (equivalent anchor locations) associated with the safety / nonsafety transitions. The equivalent anchor evaluation did not result in additional piping being added to scope beyond the piping that is credited with a pressure boundary function.

Revised LR drawing 1-24-1 (Revision 6) was submitted to the NRC in FENOC letter L-08-123, dated April 3, 2008, in response to license renewal RAI 2.1-1.

Section 2.3.4.7 Main Steam System

Question RAI 2.3.4.7-1 (Unit 1)

On LR drawing 1-21-1, at locations F-9, D-9, and B-9, the applicant highlights the 32-inch main steam headers in the Service Building up to an equivalent anchor location that appears to be short of the Service Building/Turbine Building boundary. In LRA Section 2.4.26, the applicant states that the Unit 1 Service Building is included within the scope of LR for 10 CFR 54.4(a)(1). In LRA Section 2.1.1.2.3, the applicant states that fluid-retaining, such as water, steam, oil or hydraulic liquids, for nonsafety-related systems and components that are located inside safety-related structures are included within the scope of LR for potential spatial interaction under criterion 10 CFR 54.4(a)(2). Since the Unit 1 Service Building is safety-related, the whole length of the 32-inch main steam headers in the Service Building should be within the scope of LR and subject to an AMR for potential spatial interaction under criterion 10 CFR 54.4(a)(2).

Verify that the whole 32-inch main steam piping is highlighted in the Service Building and included within the scope of LR, or justify its exclusion from the scope of LR and subject to an AMR.

RESPONSE RAI 2.3.4.7-1 (Unit 1)

The entire length of main steam piping within the Service Building is within the scope of License Renewal.

LR drawing 1-21-1 is revised to more clearly depict the scoping endpoint at the Service Building boundary.

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

Section 2.3.4.9 Steam Generator Blowdown System

Question RAI 2.3.4.9-1 (Unit 1)

In LRA Section 2.3.4.9, the applicant states that an intended function of the steam generator blowdown system is that it contains components relied upon in the safety analyses or plant evaluations to demonstrate compliance with environmental qualification (EQ) regulations. In the Unit 1 UFSAR Section 10.3.8.3, the applicant identifies the following feature, “Reducing orifices (RO-BD-109A, B, and C) limit the energy release in those areas without ambient monitors so the environmental qualification envelope in those areas with vital equipment is maintained.”

In LRA Table 2.3.4-9, the applicant identifies the component type “orifice” as being subject to an AMR with an intended function of leakage boundary (spatial). However, on LR drawing 1-25-1, at locations A-6 and B-6, these orifices are not highlighted as being included within the scope of LR for performing a function as defined in 10 CFR 54.4(a)(3), which would include the above identified function.

Justify the exclusion of these orifices from the scope of LR.

RESPONSE RAI 2.3.4.9-1 (Unit 1)

FENOC did not originally include restricting orifices RO-BD-109A, -109B, and -109C within the scope of License Renewal. Unit 1 UFSAR Section 10.3.8.3 identifies these orifices as performing a function associated with Environmental Qualification (EQ). These orifices are added to scope for 10 CFR 50.54(a)(3) with a component intended function of “Flow restriction.”

LR drawing 1-25-1 is revised to show RO-BD-109A, -109B, and -109C highlighted in red. The component function "Flow restriction" is added to the orifice component in LRA Table 2.3.4-9. These components are located on the roof of the Service Building (outside), and five new rows are added to LRA Table 3.4.2-9 to account for these components. Additionally, the "Air-outdoor" environment is added to the list of environments for the Steam Generator Blowdown System in LRA section 3.4.2.1.9.

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

See Enclosure B to this letter for copies of revised LRA Boundary Drawings.

ENCLOSURE A

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

Letter L-08-189

**Amendment No. 11 to the
BVPS License Renewal Application**

Page 1 of 16

Sections Affected

Table 2.3.3-17

Section 2.3.3.25

Table 2.3.3-29

Table 2.3.4-6

Table 2.3.4-9

Section 2.3.4.10

Table 3.3.2-17

Table 3.3.2-29

Section 3.4.2.1.9

Table 3.4.2-6

Table 3.4.2-9

Table 3.5.2-36

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 top of the affected page or at the start of the affected section, as applicable. 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>
Table 2.3.3-17	Page 2.3-85	New Row

A new Component Type, "Flame arrestor" is added to Table 2.3.3-17, "Emergency Response Facility Substation System (Common) Components Subject to Aging Management Review," to address the aging management of the Emergency Response Facility (ERF) diesel generator fuel tank flame arrestor, with an Intended Function of "Flame suppression". LRA Table 2.3.3-17 is revised to include:

<i>Component Type</i>	<i>Intended Function</i>
<i><u>Flame arrestor</u></i>	<i><u>Flame suppression</u></i>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Section 2.3.3.25	Page 2.3-108	License Renewal Drawings Table

License Renewal (LR) Drawings that are revised to provide a consistent depiction of Radiation Monitoring System boundaries are not listed in LRA Section 2.3.3.25, "Radiation Monitoring System," on the License Renewal Drawings Table. The License Renewal Drawings Table in LRA Section 2.3.3.25 is revised to read:

License Renewal Drawings

Additional details for components subject to aging management review are provided in the following license renewal drawings. Parent system drawings are shown in bold.

<i>BVPS Unit 1 License Renewal Drawings</i>	<i>BVPS Unit 1 License Renewal Drawings</i>
LR 1-07-1	LR 2-12-1
<u>LR 1-14A-1</u>	<u>LR 2-14A-1</u>
LR 1-16-1	<u>LR 2-15-1</u>
LR 1-17-1	<u>LR 2-15-6</u>
LR 1-19-1	LR 2-16-2
LR 1-43-2	LR 2-25-4
LR 1-43-3	<u>LR 2-27A-2</u>
LR 1-43-5	LR 2-30-3
--	LR 2-43-16
--	LR 2-43-18
--	LR 2-43-21
--	LR 2-43-22

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Table 2.3.3-29	Page 2.3-120	New Row
A new Component Type, "Flame arrestor" is added to Table 2.3.3-29, "Security Diesel Generator System (Common) Components Subject to Aging Management Review," to address the aging management of the security diesel generator fuel tank flame arrestor, with an Intended Function of "Flame suppression". LRA Table 2.3.3-29 is revised to include:		

<i>Component Type</i>	<i>Intended Function</i>
<u>Flame arrestor</u>	<u>Flame suppression</u>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Table 2.3.4-6	Page 2.3-145	New Row

A new Component Type, "Heat exchanger" is added to Table 2.3.4-6, "Main Feedwater System Components Subject to Aging Management Review," to address the aging management of the first point feedwater heaters, with an Intended Function of "Pressure boundary". LRA Table 2.3.4-6 is revised to include:

<i>Component Type</i>	<i>Intended Function</i>
<u>Heat exchanger</u>	<u>Pressure boundary</u>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Table 2.3.4-9	Page 2.3-155	5th Row

Restricting orifices RO-BD-109A, -109B, and -109C are added to license renewal scope. Table 2.3.4-9, "Steam Generator Blowdown System Components Subject to Aging Management Review," contains Component Type "orifice" with a "Leakage boundary (spatial)" Intended Function. A new Intended Function, "Flow restriction", is added to the "orifice" Component Type to address the aging management of restricting orifices RO-BD-109A, -109B, and -109C. LRA Table 2.3.4-9, fifth row, is revised to include:

<i>Component Type</i>	<i>Intended Function</i>
<i>Orifice</i>	<u><i>Flow restriction</i></u> <i>Leakage boundary (spatial)</i>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Section 2.3.4.10	Page 2.3-157	License Renewal Drawings Table

License Renewal (LR) Drawings that are revised to provide a consistent depiction of Radiation Monitoring System boundaries are not listed in LRA Section 2.3.4.10, "Water Treatment System," on the License Renewal Drawings Table. The License Renewal Drawings Table in LRA Section 2.3.4.10 is revised to read:

License Renewal Drawings

Additional details for components subject to aging management review are provided in the following license renewal drawings. Parent system drawings are shown in bold.

<i>BVPS Unit 1 License Renewal Drawings</i>	<i>BVPS Unit 1 License Renewal Drawings</i>
<i>LR 1-32-2</i>	<u><i>LR 2-15-1</i></u>
<i>LR 1-32-8</i>	<u><i>LR 2-15-6</i></u>
<i>LR 1-32-9</i>	<i>LR 2-24-3</i>
--	<u><i>LR 2-27A-2</i></u>
--	<i>LR 2-30-3</i>
--	<i>LR 2-32-1</i>
--	<i>LR 2-32-2</i>
--	<i>LR 2-36-4A</i>
--	<i>LR 2-36-4B</i>
--	<i>LR 2-43-22</i>

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

Table 3.3.2-17 **Page 3.3-423** **2 New Rows**

A new Component Type, "Flame arrestor" is added to Table 3.3.2-17, "Auxiliary Systems – Emergency Response Facility Substation System (Common) – Summary of Aging Management Evaluation," resulting in two new rows to address the aging management of the Emergency Response Facility (ERF) diesel generator fuel tank flame arrestor, with an Intended Function of "Flame suppression". LRA Table 3.3.2-17 is revised to include:

<i>Component Type</i>	<i>Intended Function</i>	<i>Material</i>	<i>Environment</i>	<i>Aging Effect Requiring Management</i>	<i>Aging Management Program</i>	<i>NUREG-1801 Volume 2 Item</i>	<i>Table 1 Item</i>	<i>Notes</i>
<u>Flame arrestor</u>	<u>Flame suppression</u>	<u>Aluminum</u>	<u>Air - indoor uncontrolled</u>	<u>None</u>	<u>None</u>	<u>V.F-2 (EP-3)</u>	<u>3.2.1-50</u>	<u>A</u>
<u>Flame arrestor</u>	<u>Flame suppression</u>	<u>Aluminum</u>	<u>Air - outdoor - EXT</u>	<u>None</u>	<u>None</u>	<u>N/A</u>	<u>N/A</u>	<u>G</u>

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

Table 3.3.2-29 **Page 3.3-676** **2 New Rows**

A new Component Type, "Flame arrestor" is added to Table 3.3.2-29, "Auxiliary Systems – Security Diesel Generator System (Common) – Summary of Aging Management Evaluation," resulting in two new rows to address the aging management of the security diesel generator fuel tank flame arrestor, with an Intended Function of "Flame suppression". LRA Table 3.3.2-29 is revised to include:

<i>Component Type</i>	<i>Intended Function</i>	<i>Material</i>	<i>Environment</i>	<i>Aging Effect Requiring Management</i>	<i>Aging Management Program</i>	<i>NUREG-1801 Volume 2 Item</i>	<i>Table 1 Item</i>	<i>Notes</i>
<u>Flame arrestor</u>	<u>Flame suppression</u>	<u>Steel</u>	<u>Air - indoor uncontrolled</u>	<u>Loss of material</u>	<u>Inspection of Internal Surfaces in Miscellaneous Piping and Ducting Components</u>	<u>V.A-19 (E-29)</u>	<u>3.2.1-32</u>	<u>A</u>
<u>Flame arrestor</u>	<u>Flame suppression</u>	<u>Steel</u>	<u>Air - outdoor - EXT</u>	<u>Loss of material</u>	<u>External Surfaces Monitoring</u>	<u>VII.I-9 (A-78)</u>	<u>3.3.1-58</u>	<u>A</u>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
Section 3.4.2.1.9	Page 3.4-12	Environment, New Sub-bullet A new environment, "Air-outdoor", for components added to license renewal scope needs to be included in the "Environment" list of LRA Section 3.4.2.1.9, "Steam Generator Blowdown System." LRA Section 3.4.2.1.9, Environment list, is revised to read:

Steam Generator Blowdown System components are exposed to the following environments.

- *Air-indoor uncontrolled*
- *Air-outdoor*
- *Closed cycle cooling water*
- *Condensation*
- *Treated water*
- *Treated water >250°C (>482°F)*
- *Treated water >60°C (>140°F)*

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

Table 3.4.2-6 **Page 3.4-113** **19 New Rows**

New Component Types, "Heat exchanger (channel)", "Heat exchanger (tube)", and "Heat exchanger (tubesheet)", consisting of 19 new rows, are added to Table 3.4.2-6, "Steam and Power Conversion Systems – Main Feedwater System – Summary of Aging Management Evaluation," to address the aging management of the first point feedwater heaters, with an Intended Function of "Pressure boundary". LRA Table 3.4.2-6 is revised to include:

<u>Component Type</u>	<u>Intended Function</u>	<u>Material</u>	<u>Environment</u>	<u>Aging Effect Requiring Management</u>	<u>Aging Management Program</u>	<u>NUREG-1801 Volume 2 Item</u>	<u>Table 1 Item</u>	<u>Notes</u>
<u>Heat exchanger (channel)</u>	<u>Pressure boundary</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>Flow-Accelerated Corrosion</u>	<u>VIII.D1-9 (S-16)</u>	<u>3.4.1-29</u>	<u>C</u>
<u>Heat exchanger (channel)</u>	<u>Pressure boundary</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.D1-8 (S-10)</u>	<u>3.4.1-4</u>	<u>C</u>
<u>Heat exchanger (channel)</u>	<u>Pressure boundary</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.D1-8 (S-10)</u>	<u>3.4.1-4</u>	<u>C</u>
<u>Heat exchanger (channel)</u>	<u>Pressure boundary</u>	<u>Steel</u>	<u>Air - indoor uncontrolled - EXT</u>	<u>Loss of material</u>	<u>External Surfaces Monitoring</u>	<u>VIII.H-7 (S-29)</u>	<u>3.4.1-28</u>	<u>A</u>

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)</u>	<u>Cracking</u>	<u>One-Time Inspection</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)</u>	<u>Cracking</u>	<u>Water Chemistry</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)-EXT</u>	<u>Cracking</u>	<u>One-Time Inspection</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)-EXT</u>	<u>Cracking</u>	<u>Water Chemistry</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)-EXT</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>
<u>Heat exchanger (tube)</u>	<u>Pressure boundary</u>	<u>Stainless steel</u>	<u>Treated water >60°C (>140°F)-EXT</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water >60°C (>140°F)</u>	<u>Cracking</u>	<u>One-Time Inspection</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water >60°C (>140°F)</u>	<u>Cracking</u>	<u>Water Chemistry</u>	<u>VIII.D1-5 (SP-17)</u>	<u>3.4.1-14</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water >60°C (>140°F)</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water >60°C (>140°F)</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.D1-4 (SP-16)</u>	<u>3.4.1-16</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water-EXT</u>	<u>Loss of material</u>	<u>Flow-Accelerated Corrosion</u>	<u>VIII.D1-9 (S-16)</u>	<u>3.4.1-29</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water-EXT</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.D1-8 (S-10)</u>	<u>3.4.1-4</u>	<u>C</u>
<u>Heat exchanger (tubesheet)</u>	<u>Pressure boundary</u>	<u>Steel with stainless steel cladding</u>	<u>Treated water-EXT</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.D1-8 (S-10)</u>	<u>3.4.1-4</u>	<u>C</u>

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

Table 3.4.2-9 **Page 3.4-164** **5 New Rows**

Restricting orifices RO-BD-109A, -109B, and -109C are added to license renewal scope with an Intended Function of "Flow restriction". Table 3.4.2-9, "Steam and Power Conversion Systems – Steam Generator Blowdown System – Summary of Aging Management Evaluation," requires the addition of five new rows to address the aging management of these restricting orifices. LRA Table 3.4.2-9 is revised to include:

<u>Component Type</u>	<u>Intended Function</u>	<u>Material</u>	<u>Environment</u>	<u>Aging Effect Requiring Management</u>	<u>Aging Management Program</u>	<u>NUREG-1801 Volume 2 Item</u>	<u>Table 1 Item</u>	<u>Notes</u>
<u>Orifice</u>	<u>Flow restriction</u>	<u>Steel</u>	<u>Treated water</u>	<u>Cumulative fatigue damage</u>	<u>TLAA</u>	<u>VIII.D1-7 (S-11)</u>	<u>3.4.1-1</u>	<u>A</u>
<u>Orifice</u>	<u>Flow restriction</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>Flow-Accelerated Corrosion</u>	<u>VIII.F-26 (S-16)</u>	<u>3.4.1-29</u>	<u>A</u>
<u>Orifice</u>	<u>Flow restriction</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>One-Time Inspection</u>	<u>VIII.F-25 (S-10)</u>	<u>3.4.1-4</u>	<u>A</u>
<u>Orifice</u>	<u>Flow restriction</u>	<u>Steel</u>	<u>Treated water</u>	<u>Loss of material</u>	<u>Water Chemistry</u>	<u>VIII.F-25 (S-10)</u>	<u>3.4.1-4</u>	<u>A</u>

<i>Component Type</i>	<i>Intended Function</i>	<i>Material</i>	<i>Environment</i>	<i>Aging Effect Requiring Management</i>	<i>Aging Management Program</i>	<i>NUREG-1801 Volume 2 Item</i>	<i>Table 1 Item</i>	<i>Notes</i>
<u>Orifice</u>	<u>Flow restriction</u>	<u>Steel</u>	<u>Air - outdoor-EXT</u>	<u>Loss of material</u>	<u>External Surfaces Monitoring</u>	<u>VIII.H-8 (S-41)</u>	<u>3.4.1-28</u>	<u>A</u>

<u>Affected LRA Section</u>	<u>LRA Page No.</u>	<u>Affected Paragraph and Sentence</u>
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Table 3.5.2-36	Page 3.5-190	New Row
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Table 3.5.2-36, "Containments, Structures, and Component Supports – Bulk Structural Commodities – Summary of Aging Management Evaluation," only addressed the "Protected from weather" environment for sump liners. LRA Table 3.5.2-36 requires a change to include an additional row to address the "Raw water" environment for sump liners. LRA Table 3.5.2-36 is revised to include:

<i>Component Type</i>	<i>Intended Function</i>	<i>Material</i>	<i>Environment</i>	<i>Aging Effect Requiring Management</i>	<i>Aging Management Program</i>	<i>NUREG-1801 Volume 2 Item</i>	<i>Table 1 Item</i>	<i>Notes</i>
<u>Sump liners</u>	<u>EN, SNS, SRE, SSR</u>	<u>Stainless steel</u>	<u>Exposed to raw water</u>	<u>Loss of material</u>	<u>Structures Monitoring</u>	<u>VII.C3-7 (A-53)</u>	<u>3.3.1-78</u>	<u>E, 530</u>

ENCLOSURE B

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

Letter L-08-189

Revised License Renewal Application Boundary Drawings

The following License Renewal Application Boundary Drawings
are revised and are enclosed:

LR Drawing 1-14A-1	Revision 8
LR Drawing 1-21-1	Revision 6
LR Drawing 1-22-1	Revision 4
LR Drawing 1-24-2	Revision 5
LR Drawing 1-24-3	Revision 4
LR Drawing 1-25-1	Revision 5
LR Drawing 1-32-7	Revision 4
LR Drawing 1-45F-1	Revision 5
LR Drawing 1-58E-1	Revision 5
LR Drawing 2-14A-1	Revision 6
LR Drawing 2-15-1	Revision 5
LR Drawing 2-15-6	Revision 5
LR Drawing 2-24-2A	Revision 4
LR Drawing 2-27A-2	Revision 4

The subsequently 14 listed drawings/figures were individually added to ADAMS, which are available for viewing in ADAMS.