



FirstEnergy Nuclear Operating Company

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November 20, 2017
L-17-262

10 CFR 50.71(e)
10 CFR 50.54(a)
10 CFR 54.37(b)

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

SUBJECT:

Beaver Valley Power Station, Unit No. 2
Docket No. 50-412, License No. NPF-73
Submittal of the Updated Final Safety Analysis Report, Revision 23

In accordance with the requirements of 10 CFR 50.71(e), the FirstEnergy Nuclear Operating Company (FENOC) is hereby submitting to the Nuclear Regulatory Commission (NRC) the Beaver Valley Power Station, Unit No. 2 (BVPS-2), Updated Final Safety Analysis Report (UFSAR) Revision 23 in CD-ROM format. This submittal reflects facility and procedure changes implemented between October 30, 2015 (the end of Refueling Outage 18), and May 21, 2017 (the end of Refueling Outage 19), along with several changes implemented after Refueling Outage 19.

In accordance with 10 CFR 50.4(b)(6), the BVPS- 2, UFSAR, Revision 23, is being submitted electronically on a total replacement basis. As required by NRC guidance for electronic submissions to the Commission, Attachments 1 and 2 provide a listing of the document components that make up the two enclosed CD-ROMs.

The first enclosed CD-ROM includes the BVPS-2 UFSAR and the following documents.

- BVPS-2, Licensing Requirements Manual (LRM), Revision 90
- Technical Specification (TS) Bases, Revision 34, submitted to satisfy TS 5.5.10.d, which requires submittal of TS Bases changes implemented without prior NRC approval
- FENOC Quality Assurance Program Manual (QAPM), Revision 21, submitted in accordance with 10 CFR 50.54(a)

The second enclosed CD-ROM includes the BVPS-2 UFSAR, LRM, TS Bases and QAPM with information identified in accordance with NRC Regulatory Issue Summary (RIS) 2015-17, "Review and Submission of Updates to Final Safety Analysis Reports, Emergency Preparedness Documents, and Fire Protection Documents," removed.

A053
A045
A006
NRK

Attachment 3 includes a summary of information removed from the BVPS-2 UFSAR in accordance with Appendix A to Nuclear Energy Institute (NEI) 98-03, Revision 1, "Guidelines for Updating Final Safety Analysis Reports," as endorsed by Regulatory Guide 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)."

FENOC conducted a review of BVPS-2 plant changes implemented between October 30, 2015 and May 21, 2017 for 10 CFR 54.37(b) applicability. No components were determined to meet the criteria for newly identified components as clarified by RIS 2007-16, Revision 1, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses." However, corrections to the previous review provided with BVPS-2 UFSAR, Revision 22 (ADAMS Accession No. ML16134A150), were identified. A corrected copy of the review is provided in Attachment 4 of this letter with changes indicated by a revision bar.

There are no regulatory commitment changes to be submitted in accordance with Nuclear Energy Institute, NEI 99-04, "Guidelines for Managing NRC Commitment Changes," Revision 0, as endorsed by RIS 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff."

This certifies, to the best of my judgment and belief, that Revision 23 of the BVPS-2 UFSAR accurately presents changes made since the previous submittal that are necessary to reflect information and analysis submitted to the Commission or pursuant to Commission requirements.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at 330-315-6810.

Sincerely,



Richard D. Bologna

Attachments:

1. List of Document Components on CD-ROM 1
2. List of Document Components on CD-ROM 2 (Information Identified Per RIS 2015-17 Removed)
3. Information Removed from BVPS, Unit No. 2 UFSAR
4. Review of Plant Changes for 10 CFR 54.37(b) Applicability

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Enclosures:

- A. Beaver Valley Power Station, Unit No. 2 UFSAR, Licensing Requirements Manual, Technical Specification Bases, and QAPM (on CD-ROM 1)
- B. Beaver Valley Power Station, Unit No. 2 UFSAR With Information Identified Per RIS 2015-17 Removed (on CD-ROM 2)

cc: NRC Region I Administrator
NRC Resident Inspector
NRC Project Manager
Director BRP/DEP
Site BRP/DEP Representative

Information Removed from BVPS, Unit No. 2 UFSAR
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In accordance with Nuclear Energy Institute (NEI) 98-03, Revision 1, "Guidelines for Updating Final Safety Analysis Reports," licensees periodically report a brief description of information removed from the Updated Final Safety Analysis Report (UFSAR) and the basis for its removal. The following provides a summary of the information removed from the UFSAR and the basis for removal.

1. Removed excessive detail in the description of the reactor vessel stud tensioner from Section 9.1.4.2.3.8. The reactor vessel stud tensioners are tools used to disassemble and reassemble the reactor vessel and head, and its design has no design bases or safety analyses. Parameters used to ensure the structures, systems, and components (SSCs) are left in the proper condition remain valid and unchanged, regardless of tensioner style. The removed information has no impact on the ability of plant SSCs described in the UFSAR to perform their design basis functions and has no impact on plant operations.

In addition, per Regulatory Guide 1.70 Revision 3, Volume 2, Section 9.1.4, "Fuel Handling System," reactor vessel stud tensioner detail is not required. This section requires a description of the fuel handling system, including all components for transporting and handling fuel from the time it reaches the plant until it leaves the plant. The stud tensioner is not used to transport or handle fuel.

Attachment 1
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List of Document Components on CD-ROM 1
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<u>File Name</u>	<u>Size</u>
001 UFSAR List of Effective Pages Rev 23.pdf	118 KB
002 UFSAR Section 1.pdf	1,055 KB
003 UFSAR Section 2 Part 1 of 2.pdf	12,639 KB
004 UFSAR Section 2 Part 2 of 2.pdf	27,119 KB
005 UFSAR Section 3 Part 1 of 2.pdf	25,517 KB
006 UFSAR Section 3 Part 2 of 2.pdf	13,519 KB
007 UFSAR Section 4.pdf	3,503 KB
008 UFSAR Section 5.pdf	1,638 KB
009 UFSAR Section 6.pdf	4,315 KB
010 UFSAR Section 7.pdf	8,723 KB
011 UFSAR Section 8.pdf	1,029 KB
012 UFSAR Section 9.pdf	3,159 KB
013 UFSAR Section 10.pdf	1,822 KB
014 UFSAR Section 11.pdf	1,113 KB
015 UFSAR Section 12.pdf	13,718 KB
016 UFSAR Section 13.pdf	523 KB
017 UFSAR Section 14.pdf	424 KB
018 UFSAR Section 15.pdf	2,407 KB
019 UFSAR Section 16.pdf	35 KB
020 UFSAR Section 17.pdf	56 KB
021 UFSAR Section 18.pdf	26 KB
022 UFSAR Section 19.pdf	412 KB
023 BVPS-2 LRM Rev 90.pdf	1,251 KB
024 BVPS TS Bases Rev 34.pdf	2,452 KB
025 FENOC QAPM Rev 21.pdf	3,018 KB

Attachment 2
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List of Document Components on CD-ROM 2
(Information Identified Per RIS 2015-17 Removed)
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<u>File Name</u>	<u>Size</u>
001 UFSAR List of Effective Pages Rev 23.pdf	118 KB
002 UFSAR Section 1.pdf	967 KB
003 UFSAR Section 2 Part 1 of 2.pdf	11,551 KB
004 UFSAR Section 2 Part 2 of 2.pdf	27,084 KB
005 UFSAR Section 3 Part 1 of 2.pdf	25,516 KB
006 UFSAR Section 3 Part 2 of 2.pdf	3,931 KB
007 UFSAR Section 4.pdf	3,504 KB
008 UFSAR Section 5.pdf	1,638 KB
009 UFSAR Section 6.pdf	4,269 KB
010 UFSAR Section 7.pdf	8,689 KB
011 UFSAR Section 8.pdf	1,030 KB
012 UFSAR Section 9.pdf	2,824 KB
013 UFSAR Section 10.pdf	1,823 KB
014 UFSAR Section 11.pdf	1,112 KB
015 UFSAR Section 12.pdf	9,571 KB
016 UFSAR Section 13.pdf	523 KB
017 UFSAR Section 14.pdf	424 KB
018 UFSAR Section 15.pdf	2,407 KB
019 UFSAR Section 16.pdf	35 KB
020 UFSAR Section 17.pdf	56 KB
021 UFSAR Section 18.pdf	26 KB
022 UFSAR Section 19.pdf	413 KB
023 BVPS-2 LRM Rev 90.pdf	1,251 KB
024 BVPS TS Bases Rev 34.pdf	2,452 KB
025 FENOC QAPM Rev 21.pdf	3,018 KB

Review of Plant Changes for 10 CFR 54.37(b) Applicability
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During review of plant changes for 10 CFR 54.37(b) applicability, the carbon dioxide fire suppression system in the Emergency Response Facility Substation (ERFS), including the Emergency Response Facility Diesel Generator Building (ERFDGB) was determined to meet the criteria for newly identified components, as clarified in NRC Regulatory Information Summary (RIS) 2007-16, Revision 1, "Implementation of the Requirements of 10 CFR 54.37(b) for Holders of Renewed Licenses."

A recently approved Updated Final Safety Analysis Report (UFSAR) change now credits the fire suppression system in the ERFS, including the ERFDGB, as being within the scope of 10 CFR 50.48, "Fire Protection." Therefore, this system meets the license renewal scoping criteria of 10 CFR 54.4(a)(3) as described in NUREG-1800, Revision 2, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (December 2010)," section 2.1.3.1.3. License renewal application (LRA) section 2.1.1.3.1 described the scoping of systems and structures relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the fire protection criterion. If the LRA were being prepared today, it would now include the fire suppression system in the ERFS and ERFDGB. This fire suppression system is within the scope of the Beaver Valley Power Station Fire Protection Program.

The results of an aging management review for the fire suppression system in the ERFS, including the ERFDGB, is provided in the table below. The table and the corresponding aging management program descriptions contained in Section 19 of the Updated Final Safety Analysis Report already describe how the effects of aging will be managed for the newly identified components, as required by 10 CFR 54.37(b). Other newly added components in the fire suppression system in the ERFS, including the ERFDGB, requiring aging management review (that is, the associated piping and component supports) were already addressed in the LRA and associated Aging Management Program (that is, the Structures Monitoring Program).

AGING MANAGEMENT REVIEW

Component Type	Intended Function(s)	Material	Environment	Aging Effect Requiring Management	Aging Management Program
Bolting	Pressure Boundary	Steel	Air - indoor uncontrolled	Loss of Material	Bolting Integrity
Bolting	Pressure Boundary	Steel	Air - outdoor	Loss of Material	Bolting Integrity
Nozzle (CO ₂)	Direct Flow	Stainless steel	Air - indoor uncontrolled	None*	Fire Protection
Piping (CO ₂)	Pressure Boundary	Steel	Air - indoor uncontrolled	Loss of Material	External Surfaces Monitoring

Component Type	Intended Function(s)	Material	Environment	Aging Effect Requiring Management	Aging Management Program
Piping (CO2)	Pressure Boundary	Steel	Air - outdoor	Loss of Material	External Surfaces Monitoring
Piping (CO2)	Pressure Boundary	Steel	Gas	None	None
Piping (CO2)	Pressure Boundary	Steel	Air- indoor uncontrolled	Loss of Material	Internal Surfaces
Piping (CO2 fittings)	Pressure Boundary	Steel	Air - indoor uncontrolled	Loss of Material	External Surfaces Monitoring
Piping (CO2 fittings)	Pressure Boundary	Steel	Air - outdoor	Loss of Material	External Surfaces Monitoring
Piping (CO2 fittings)	Pressure Boundary	Steel	Gas	None	None
Piping (CO2 fittings)	Pressure Boundary	Steel	Air - indoor uncontrolled	Loss of Material	Internal Surfaces
Tank Insulated (CO2)	Pressure Boundary	Steel	Air - Outdoor	Loss of Material	Fire Protection
Tank (CO2)	Pressure Boundary	Steel	Gas	None	None
Valve body (CO2 / Halon)	Pressure Boundary	Steel	Air - outdoor	Loss of Material	External Surfaces Monitoring
Valve body (CO2 / Halon)	Pressure Boundary	Steel	Gas	None	None
Valve body (CO2 / Halon)	Pressure Boundary	Steel	Air – indoor uncontrolled	Loss of Material	Internal Surfaces

*Note: Inspection frequency will be changed to every 6 months, to satisfy UFSAR, Table 19-1, "Unit 2 License Renewal Commitments," Item No. 8, commitment to enhance the Fire Protection Program.

In summary, FENOC conducted a review of BVPS, Unit No. 2 plant changes implemented between May 23, 2014 and October 30, 2015 for 10 CFR 54.37(b) applicability. The fire suppression system in the ERFS, including the ERFDGB, was determined to meet the criteria for newly identified components as clarified by RIS 2007-16.

The fire suppression system in the ERFS, including the ERFDGB was not previously credited for aging management at BVPS. This condition has been entered into the FENOC corrective action program to ensure the newly identified components are included in appropriate aging management programs.

It has been determined that the effects of aging will be managed for the newly identified components such that the intended functions will be effectively maintained during the period of extended operation by the aging management programs described in UFSAR Sections 19.1.6, "Bolting Integrity Program," 19.1.15, "External Surfaces Monitoring Program," 19.1.16, "Fire Protection Program," 19.1.22, "Inspection of Internal Surfaces Program," and 19.1.39, "Structures Monitoring Program," as applicable. Therefore, no UFSAR changes were determined to be necessary.