



FirstEnergy Nuclear Operating Company

Beaver Valley Power Station
P.O. Box 4
Shippingport, PA 15077

Marty L. Richey
Site Vice President

724-682-5234
Fax: 724-643-8069

February 22, 2017
L-17-053

10 CFR 50.55a

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

SUBJECT:

Beaver Valley Power Station, Unit Nos. 1 and 2
Unit 1 Docket No. 50-334, License No. DPR-66
Unit 2 Docket No. 50-412, License No. NPF-73
Response to Request for Additional Information Regarding 10 CFR 50.55a Request
Numbers PR6 and PR7 (CAC Nos. MF8340, MF8341, MF8342 and MF8343)

By letter dated August 31, 2016 (Accession Number ML16245A320) FirstEnergy Nuclear Operating Company (FENOC) requested approval of proposed alternatives and relief requests associated with the fifth and fourth 10-year intervals of the Beaver Valley Power Station, Unit No. 1 and Unit No. 2 inservice testing program for pumps and valves, respectively.

The Nuclear Regulatory Commission (NRC) staff requested additional information to complete its review of 10 CFR 50.55a request numbers PR6 and PR7 in a letter dated February 3, 2017 (Accession Number ML17031A036). FENOC's response to the NRC staff's request for additional information is attached to this letter.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 315-6810.

Sincerely, <

Marty L. Richey

Attachment:
Response to February 3, 2017 Request for Additional Information

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

ATTACHMENT
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The NRC staff's request for additional information (RAI) is provided in bold text followed by the FENOC response.

RAI PR6-1

In Section 3, "Applicable Code Requirement," of the submittal, Table ISTB-3000-1, "Inservice Test Parameters," identifies flow rate as a test parameter, and Note 1 of the table states, in part, that: "...differential pressure or flow rate shall be measured or determined." Note 1 in Table ISTB-3000-1 is applicable to Group B tests. The boric acid transfer pumps are Group A pumps. Explain why Note 1 is referenced in Section 3, if it is not applicable to Group A pumps.

Response:

The Beaver Valley Power Station, Unit No. 1 (BVPS-1), boric acid transfer pumps (1CH-P-2A and B) are Group A pumps, and therefore, Note 1 was cited in error. To correct this condition, the second paragraph of PR6 request Section 3, "Applicable Code Requirement," regarding Table ISTB-3000-1, is hereby changed to read as follows:

Table ISTB-3000-1, "Inservice Test Parameters," identifies flow rate as a test parameter.

The Beaver Valley Power Station, Unit No. 2 (BVPS-2) request PR6 does not propose an alternative to ISTB 3000-1. Therefore, this RAI is not applicable to the BVPS-2 request.

RAI PR6-2

Section 6, "Proposed Alternative and Basis for Use," of the submittal states, "separate vibration reference and acceptance criteria values will be used for the different test conditions of the recirculation and full flow tests." Please provide the vibration reference and acceptance criteria values.

Response:

Reference and acceptance criteria vibration limits for BVPS-1 pumps 1CH-P-2A and 1CH-P-2B at recirculation flow and at full flow conditions are provided below in inches per second (in/sec).

1CH-P-2A Reference Value and Vibration Limits at Recirculation Flow

Pump Bearing Locations¹	Reference (in/sec)	Accept Limit² (in/sec)	Alert Limit² (in/sec)
Inboard Axial	0.0477	≤ 0.125	≤ 0.300
Inboard Horizontal	0.0420	≤ 0.125	≤ 0.300
Inboard Vertical	0.0423	≤ 0.125	≤ 0.300
Outboard Horizontal	0.0425	≤ 0.125	≤ 0.300
Outboard Vertical	0.0341	≤ 0.125	≤ 0.300

1CH-P-2A Reference Value and Vibration Limits at Full Flow

Pump Bearing Locations¹	Reference (in/sec)	Accept Limit² (in/sec)	Alert Limit² (in/sec)
Inboard Axial	0.0470	≤ 0.125	≤ 0.300
Inboard Horizontal	0.0418	≤ 0.125	≤ 0.300
Inboard Vertical	0.0362	≤ 0.125	≤ 0.300
Outboard Horizontal	0.0323	≤ 0.125	≤ 0.300
Outboard Vertical	0.0310	≤ 0.125	≤ 0.300

1CH-P-2B Reference Value and Vibration Limits at Recirculation Flow

Pump Bearing Locations¹	Reference (in/sec)	Accept Limit² (in/sec)	Alert Limit² (in/sec)
Inboard Axial	0.0423	≤ 0.125	≤ 0.300
Inboard Horizontal	0.0435	≤ 0.125	≤ 0.300
Inboard Vertical	0.0629	≤ 0.157	≤ 0.377
Outboard Horizontal	0.0263	≤ 0.125	≤ 0.300
Outboard Vertical	0.0560	≤ 0.140	≤ 0.336

1CH-P-2B Reference Value and Vibration Limits at Full Flow

Pump Bearing Locations¹	Reference (in/sec)	Accept Limit² (in/sec)	Alert Limit² (in/sec)
Inboard Axial	0.0412	≤ 0.125	≤ 0.300
Inboard Horizontal	0.0398	≤ 0.125	≤ 0.300
Inboard Vertical	0.0522	≤ 0.130	≤ 0.313
Outboard Horizontal	0.0253	≤ 0.125	≤ 0.300
Outboard Vertical	0.0420	≤ 0.125	≤ 0.300

Notes:

1. The pump outboard axial location is not accessible.
2. BVPS-1 pump request number PR8 for the next 10-year interval would permit maximum vibration values of 0.125 in/sec for the acceptable limit and 0.300 in/sec for the alert limit when the reference vibration is 0.05 inches per second or less. Other vibration limits would be based on Table ISTB-5121-1, "Centrifugal Pump Test Acceptance Criteria."

BVPS-2 request PR6 does not require separate vibration reference and acceptance criteria values. Therefore, this RAI is not applicable to the BVPS-2 request.

RAI PR7-1:

In Section 1, "ASME Code Components Affected," of the submittal, the residual heat removal pumps are listed as ASME Class 2 pumps. In Alternative Request Number PR8, the residual heat removal pumps are listed as ASME Class 3 pumps. Please state which classification is correct.

Response:

BVPS-1 residual heat removal pumps are American Society of Mechanical Engineers (ASME) Class 2 pumps. Alternative request PR8 indicates that these pumps are ASME Class 3 pumps in error. Therefore, the entry in alternative request PR8, Section 1, "ASME Code Components Affected," for the residual heat removal pumps is hereby corrected to read as follows:

1RH-P-1A and B, Residual Heat Removal Pumps, (Group A, Class 2).

BVPS-2 request PR7 does not involve residual heat removal pumps. Therefore, this RAI is not applicable to the BVPS-2 request.