



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

March 24, 2021

Mr. John J. Grabnar
Site Vice President
Energy Harbor Nuclear Corporation
Route 168
Shippingport, PA 15077

SUBJECT: BEAVER VALLEY POWER STATION, UNITS 1 AND 2 – BIENNIAL PROBLEM
IDENTIFICATION AND RESOLUTION INSPECTION REPORT
05000334/2021012 AND 05000412/2021012

Dear Mr. Grabnar:

On February 26, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution inspection at your Beaver Valley Power Station, Units 1 and 2 and discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspection team reviewed the station's corrective action program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for corrective action programs. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

The team also evaluated the station's processes for use of industry and NRC operating experience information and the effectiveness of the station's audits and self-assessments. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

Finally, the team reviewed the station's programs to establish and maintain a safety-conscious work environment, and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team's observations and the results of these interviews the team found no evidence of challenges to your organization's safety-conscious work environment. Your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

No findings or violations of more than minor significance were identified during this inspection.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

X /RA/

Signed by: Matthew R. Young
Matt R. Young, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos. 05000334 and 05000412
License Nos. DPR-66 and NPF-73

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: BEAVER VALLEY POWER STATION, UNITS 1 AND 2 – BIENNIAL PROBLEM
IDENTIFICATION AND RESOLUTION INSPECTION REPORT
05000334/2021012 AND 05000412/2021012 DATED MARCH 24, 2021

DISTRIBUTION:

DLew, RA (R1ORAMAIL Resource)
 RLorson, DRA (R1ORAMAIL Resource)
 DCollins, DRP (R1DRPMAIL Resource)
 BPham, DRP (R1DRPMAIL Resource)
 PKrohn, DRS (R1DRSMAIL Resource)
 MFerdas, DRS (R1DRSMAIL Resource)
 MYoung, DRP
 LCline, DRP
 KChambliss, DRP
 GEatmon, DRP, SRI
 RRolph, DRP, RI
 NESch, DRP, AA
 MHaire, RI OEDO
 RidsNrrPMBeverValley Resource
 RidsNrrDorLpl1 Resource
 ROPreports Resource

DOCUMENT NAME: <https://usnrc.sharepoint.com/teams/Region-I-Branch-5/Shared Documents/Inspection Reports/Beaver Valley/2021 Inspection Reports/BV PI&R Rpt 2021-012.docx>

ADAMS ACCESSION NUMBER: ML21083A102

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DRP	RI/DRP	RI/DRP		
NAME	LCline	RClagg	MYoung		
DATE	3/23/21	3/23/21	3/23/21		

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000334 and 05000412

License Numbers: DPR-66 and NPF-73

Report Numbers: 05000334/2021012 and 05000412/2021012

Enterprise Identifier: I-2021-012-0008

Licensee: Energy Harbor Nuclear Corporation

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Shippingport PA

Inspection Dates: February 8, 2021 to February 26, 2021

Inspectors: L. Cline, Senior Project Engineer
S. Monarque, Resident Inspector
R. Rolph, Resident Inspector
R. Vadella, Project Engineer

Approved By: Matt R. Young, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a biennial problem identification and resolution inspection at Beaver Valley Power Station, Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards. Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), inspectors were directed to begin telework. In addition, regional baseline inspections were evaluated to determine if all or portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

OTHER ACTIVITIES – BASELINE

71152B - Problem Identification and Resolution

Biennial Team Inspection (IP Section 02.04) (1 Sample)

- (1) The inspectors performed a biennial assessment of the licensee's problem identification and resolution performance in the following areas:
 - Corrective Action Program Effectiveness in problem identification, prioritization, evaluation, and corrective action, which also included a review of corrective actions for issues identified in the Unit 1 chemical volume control system, Unit 2 service water system, and the Unit 2 auxiliary feedwater system and aging management issues identified and evaluated in the last five years.
 - Use of Operating Experience.
 - Completed Self-Assessments and Audits.
 - Health of the Safety Conscious Work Environment.

INSPECTION RESULTS

Assessment	71152B
Corrective Action Program Effectiveness -	
<u>Problem Identification:</u> The inspectors determined that, in general, the licensee identified issues and entered them into the corrective action program at a low threshold.	
<u>Problem Prioritization and Evaluation:</u> Based on the samples reviewed, the inspectors determined that, in general, the licensee appropriately prioritized and evaluated issues commensurate with the safety significance of the identified problem. The licensee appropriately screened condition reports for operability and reportability, categorized condition reports by significance, and assigned actions to the appropriate department for	

evaluation and resolution. However, the inspectors identified one minor performance deficiency associated with condition report categorization/prioritization, that is documented in the applicable section below.

Corrective Actions: The inspectors determined that the overall corrective action program performance related to resolving problems was effective. In most cases, the licensee implemented corrective actions to resolve problems in a timely manner.

Assessment	71152B
<p>Use of Operating Experience -</p> <p>The team determined that the licensee appropriately evaluated industry operating experience for its relevance to the facility. The licensee appropriately incorporated both internal and external operating experience into plant procedures and processes.</p> <p>Self-Assessments and Audits -</p> <p>The team reviewed a sample of self-assessments and audits to assess whether the licensee was identifying and addressing performance trends. The team concluded that the licensee had an effective self-assessment and audit process.</p>	

Assessment	71152B
<p>Safety-Conscious Work Environment -</p> <p>The inspectors interviewed a total of 18 individuals using the questions included in Appendix A of Inspection Procedure 71152. The purpose of these interviews was to evaluate the willingness of licensee staff to raise nuclear safety issues and to evaluate the perceived effectiveness of the corrective action program at resolving identified problems. The personnel interviewed were selected from the Operations, Engineering, Maintenance, Security, and the Chemistry/Radiation Protection work groups. To supplement these discussions, the inspectors interviewed the Employee Concerns Program (ECP) representative and reviewed the ECP case log and selected case files. The inspectors also reviewed the licensee's programs for monitoring and maintaining a safety-conscious work environment. This included the results from the last employee safety-conscious work environment survey and the most recent semi-annual nuclear safety culture monitoring panel meetings and corrective actions to address the areas for improvement identified by these programs.</p> <p>All individuals interviewed by the inspectors indicated that they would raise nuclear safety concerns. Most individuals felt that their management was receptive to receiving safety concerns and generally addressed them promptly, commensurate with the significance of the concern. All interviewees were aware of the licensee's ECP. Most stated they would use the program if necessary and were confident that their identify would be protected. All others were neutral on the use of the ECP. The inspectors shared the results of the inspectors' interviews of site staff with the site's ECP representative.</p>	

Minor Performance Deficiency	71152B
<p>Minor Performance Deficiency: The inspectors identified a minor performance deficiency associated with the Mitigating Systems cornerstone because the licensee did not categorize the condition described in CR-2020-0718 in accordance with guidance provided in licensee procedure NOP-LP-2001, Corrective Action Process. CR-2020-0718 documented that on</p>	

September 16, 2020, NRC inspectors identified that the flood door between the A and B cubicles in the intake structure was open when it should have been shut (see NCV 05000334/2020004-01 and NCV 05000334/2020004-02). On October 21, 2020, after completing its evaluation of this condition, the licensee determined it had caused a loss of safety-related function for both trains of Unit 1 river water. Licensee procedure NOP-LP-2001, Attachment 1, provides a list of examples of significant conditions adverse to quality (SCAQs) to aid station management in determining proper categorization of identified conditions. The first example on that list of SCAQs is entry into unplanned standard Technical Specification Limiting Condition for Operation 3.0.3, or its equivalent, for the loss of safety-related function. Contrary to this guidance, the licensee did not categorize the condition as an SCAQ. The licensee entered this condition into the corrective action program as CR-2021-01329.

Screening: The inspectors determined the performance deficiency was minor. In accordance with Inspection Manual Chapter 0612, Appendix B, more-than-minor screening questions, it did not adversely affect the Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Adequate corrective actions were in progress to prevent recurrence of the loss of control of the service water cubicle flood door that was identified on September 16, 2020. Specifically, new signs were placed on the doors that clearly described the impact of leaving the doors open on the safety systems located in the affected rooms, the doors were locked, and the licensee had generated a long-term corrective action program action to track installation of permanent locks with unique keys that will be stored in the control room.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On February 26, 2021, the inspectors presented the biennial problem identification and resolution inspection results to Mr. John Grabnar, Site Vice President and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152B	Corrective Action Documents	CR-2019-01357 (AA)	NRC Green Finding Fourth Quarter 2018 Unit 2 B Safeguards Area Air Conditioning Unit	
		CR-2019-02895 (AA)	Missed ODCM (offsite dose calculation manual) surveillance	
		CR-2019-05844 (AA)	Question the effectiveness of a Beta scintillation detector installed into a gamma detector well as a result of ECP 18-0043	
		CR-2019-06200 (AA)	NRC Baseline Inspection 2019-410: Site Protection: Operations: NRC observed Main Gate Search	
		CR-2019-08565 (AA)	Aging - Insulation Fretting on Unit-1 Pressurizer 4" Spray Line	
		CR-2019-08793 (AA)	Indication Reported on Weld SI-72-8-S01	
		CR-2019-08793 (AA)	Aging - Indication Reported on Weld SI-72-8-S01	
		CR-2020-02845 (AR)	Cale came free from drum of Unit 2 Fuel Elevator (2FNT-EL21)	
		CR-2020-02857 (AA)	Validity of sample results from Unit 1 gas waste surge tank	
		CR-2020-05481 (AA)	1CT-P-1A (Cooling Tower Pump 1A) Lower Motor Guide Bearing Failure	
		CR-2020-06889 (AA)	NRC Baseline Inspection 2020: Site Protection: Operations: NRC Observed Main Gate Search	
		CR-2020-07218 (AA)	2020 DBAI flood door BV-1IS05-11 (A to B intake cubicle crosstie flood door) found open during DBAI walkdown	
		CR-2020-08313 (NC)	Personal Injury Occurred During Main Intake Bay Cleaning - OSHA	
		CRs	CR-2007-20026, CR-2013-10409, CR-2016-02973, CR-2016-11890, CR-2017-05550, CR-2017-10960, CR-2018-09111, CR-2019-00991, CR-2019-01259, CR-2019-01260, CR-2019-01267, CR-2019-01319, CR-2019-01326, CR-2019-01327, CR-2019-01329, CR-2019-01342, CR-2019-	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			01357, CR-2019-01436, CR-2019-01849, CR-2019-02006, CR-2019-02105, CR-2019-02312, CR-2019-02597, CR-2019-02598, CR-2019-02857, CR-2019-02895, CR-2019-02948, CR-2019-03037, CR-2019-03133, CR-2019-03414, CR-2019-03591, CR-2019-03723, CR-2019-03817, CR-2019-03949, CR-2019-04071, CR-2019-04414, CR-2019-04781, CR-2019-04815, CR-2019-04884, CR-2019-05522, CR-2019-05844, CR-2019-05973, CR-2019-07576, CR-2019-07583, CR-2019-07601, CR-2019-07663, CR-2019-08133, CR-2019-08565, CR-2019-08565, CR-2019-08595, CR-2019-08596, CR-2019-08793, CR-2019-08793, CR-2019-08919, CR-2019-09938, CR-2019-10253, CR-2019-10455, CR-2019-10621, CR-2019-12089, CR-2020-00580, CR-2020-01436, CR-2020-02101, CR-2020-02168, CR-2020-02857, CR-2020-03333, CR-2020-03418, CR-2020-03509, CR-2020-03575, CR-2020-03619, CR-2020-03936, CR-2020-03949, CR-2020-03964, CR-2020-04953, CR-2020-05330, CR-2020-05557, CR-2020-05557, CR-2020-05846, CR-2020-06003, CR-2020-06213, CR-2020-06214, CR-2020-06215, CR-2020-06497, CR-2020-06498, CR-2020-06567, CR-2020-06659, CR-2020-06838, CR-2020-06919, CR-2020-06928, CR-2020-07218, CR-2020-07218, CR-2020-07389, CR-2020-07509, CR-2020-07622, CR-2020-07622, CR-2020-07881, CR-2020-08194, CR-2020-08261, CR-2020-08313, CR-2020-08354, CR-2020-08739, CR-2020-08800, CR-2020-09081, CR-2020-09366, CR-2020-09398, CR-2020-09468, CR-2020-09578, CR-2021-00137, CR-2021-00349, CR-2021-00375, CR-2021-00501, CR-2021-00613, CR-2021-00985	
	Corrective Action Documents Resulting from Inspection		CR 2021-01126, CR 2021-01191, CR 2021-01326, CR 2021-01327, CR 2021-01329	
	Engineering Changes	ECP-08-0496-007	Temporary modification for Clamping 3 way valve HCV-1CH-244 in position to isolate from Volume Control Tank for	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Repair of 1CH-11	
		ECP-08-0496-008	Removal of Temporary Modification for Clamping 3 way valve HCV-1CH-244 in Position to Isolate from Volume Control Tank for Repair of 1CH-11	
	Engineering Evaluations	OE-2019-0122	IN1901, Inadequate Evaluation of Temporary Alterations	
		OE-2019-0238	June 3, 2019 NRC INFORMATION NOTICE 2019-02: EMERGENCY DIESEL GENERATOR EXCITATION SYSTEM DIODE FAILURES	
		OE-2019-0240	IN1903, Inadequate Implementation of Clearance Processes Results in Configuration Control Issues	
		OE-2019-0290	August 26, 2019 NRC INFORMATION NOTICE 2019-05: POTENTIAL OVER-PRESSURIZATION OF HIGH SPECIFIC-ACTIVITY ALPHA- EMITTING RADIOACTIVITY SOURCES	
		OE-2019-0363	October 8, 2019 NRC INFORMATION NOTICE 2019-08: FLOW-ACCELERATED CORROSION EVENTS	
		OE-2020-0272	IN 20-02, Flex Diesel Generator Operational Challenges	
		OE-2020-0375	IN20-03, Recall of Mechanical Rate of Rise and Fixed-Temperature Heat Detectors	
	Miscellaneous		Beaver Valley SCWE Survey Results for September 2020	October 2020
		Beaver Valley Unit 1 System Health Report 2020-2	System - 07 - Unit 1 Chemical and Volume Control System	02/01/2021
		Beaver Valley Unit 2 System Health Report 2020-2	System - 24B - Unit 2 Auxiliary Feedwater System	02/01/2021
		Beaver Valley Unit 2 System Health Report 2020-2	System - 30 - Unit 2 Service Water System	02/01/2021
		FORM 1/2-ADM-	Heat Exchanger Inspection Report (2EGS-E21B - 2R21)	04/23/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		2106.F01, Rev. 6		
		FORM 1/2-ADM-2106.F01, Rev. 6	Heat Exchanger Inspection Report (2EGS-E22B - 2R21)	04/14/2020
		FORM 1/2-ADM-2106.F01, Rev. 6	Heat Exchanger Inspection Report (2EGS-E21A - 2R21)	04/23/2020
		FORM 1/2-ADM-2106.F01, Rev. 6	Heat Exchanger Inspection Report (2EGS-E22A - 2R21)	04/23/2020
	Procedures	1/2-ENV-05.04	Radioactive Discharge Authorization - Liquid	Revision 4
		1/2-PMP-M-30-002	New Traveling Water Screen Inspection	Revision 2
		1/2OST-30.21A	Beaver Valley Power Station Unit 1/2 Group 1 Flood Door Seal System Operability Check	Revision 12
		1/2OST-30.21B	Beaver Valley Unit 1/2 Group 2 Flood Door Seal System Operability Check	Revision 12
		10M-30.2A	Beaver Valley Power Station Unit 1 Precautions and Limitations	Revision 13
		20M-30.2.A	Beaver Valley Power Station Unit 2 Precautions and Limitations	Revision 13
		2OST-30.13A	Train A Service Water System Full Flow Test	Revision 48
		2OST-30.13B	Train B Service Water System Full Flow Test	Revision 47
		2OST-30.3	Service Water Pump [2SWS*P21B] Test	Revision 53
		2OST-30.6B	Service Water Pump [2SWS*P21C] Test on Train B Header	Revision 36
		BV-1OST-07-05	1CH-P-1B Centrifugal Charging Pump Operational Test Quarterly	04/15/2019
		BV-1OST-07-06	1CH-P-1C Centrifugal Charging Pump Operational Test	01/31/2020
		BV-1OST-47-124	Type C leak Test Penetration Number 28	10/18/2019
		NOBP-LP-20011	Cause Analysis	Revision 27
		NOBP-LP-2008	Corrective Action Review Board	Revision 25
		NOBP-LP-2100	Operating Experience Process	Revision 21
		NOBP-LP-2501	Safety Culture Assessment	Revision 19
		NOBP-LP-2502	Safety Culture Monitoring	Revision 14
		NOP-ER-2001	Boric Acid Corrosion Control Program	2/27/2020
		NOP-ER-2001	Boric Acid Corrosion Control Program	02/27/2020
		NOP-LP-2001	Corrective Action Program	Revision 48

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NOP-OP-1004	Reactivity Management	Revision 17
		NOP-OP-1004	Reactivity Event Classification	Revision 3
		NORM-LP-2003	Analytical Methods Guidebook	Revision 13
	Self-Assessments	PA-BV-2019-0001-005	Control of Transient Combustibles and Flammable Materials	03/14/2019
		PA-BV-2019-0001-006	Equipment Tagged in the Control Room	03/28/2019
		PA-BV-2019-0025-013	Assessment of the pre job Brief for the Reactor Vessel Head Installation, October 26, 2019	10/26/2019
		PA-BV-2020-0040-002	Resolution of Safety Relief and Valve Issues	
		PA-BV-2020-0063-005	Adherence to Conduct of Operations Standards	08/21/2020
		SA-2020-8414	71130.02 access control (2020)	
		SA-BN-2018-1298	Pre-PI&R 2019 NRC Inspection Assessment	02/18/2019
		SA-BN-2019-1526	Unannounced quarterly ERO call In Drill -2019 Second Quarter	
	Work Orders	WOs	WO 200520844, WO 200631412, WO 200635176, WO 200635813, WO 200635813, WO 200651457, WO 200673444, WO 200682247, WO 200685128, WO 200685129, WO 200694986, WO 200696791, WO 200696791, WO 200699695, WO 200699904, WO 200701456, WO 200701456, WO 200704682, WO 200709497, WO 200725699, WO 200737447, WO 200742874, WO 200744641, WO 200745425, WO 200756444, WO 200759434, WO 200759623, WO 200761676, WO 200761676, WO 200761677, WO 200761677, WO 200764217, WO 200764408, WO 200768652, WO 200771131, WO 200780726, WO 200780726, WO 200780726, WO 200781041, WO 200781851, WO 200783636, WO 200783637, WO 200783640, WO 200783641, WO 200788338, WO 200803106, WO 200803118, WO 200808349, WO 200820987, WO 200820999, WO 200821115, WO	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			200821883, WO 200826408, WO 200833299, WO 200841279, WO 200841286, WO 200841286, WO 200841306, WO 200841306	