



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 15, 2021

Mr. John J. Grabnar  
Site Vice President  
Energy Harbor Nuclear Corp.  
Beaver Valley Power Station  
Mail Stop P-BV-SSB  
P.O. Box 4, Route 168  
Shippingport, PA 15077-0004

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 – ISSUANCE OF  
AMENDMENT NOS. 312 AND 202 RE: ATMOSPHERIC DUMP VALVES  
(EPID L-2020-LLA-0229)

Dear Mr. Grabnar:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment Nos. 312 and 202 to Renewed Facility Operating License Nos. DPR-66 and NPF-73 for the Beaver Valley Power Station (Beaver Valley), Unit No. 1 and 2, respectively. This amendment consists of changes to the technical specifications (TSs) in response to your application dated October 13, 2020.

The proposed amendment would revise the Beaver Valley, Unit 1 and Unit 2, TS 3.7.4, "Atmospheric Dump Valves (ADVs)." The proposed change corrects non-conservative TS 3.7.4 by increasing the number of required operable Unit 1 atmospheric dump valves to four to ensure equipment operability requirements are consistent with plant operation and safety analyses.

A copy of the related safety evaluation is also enclosed. Notice of issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

**/RA/**

Sujata Goetz, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-334 and 50-412

Enclosures:

1. Amendment No. 312 to DPR-66
2. Amendment No. 202 to NPF-73
3. Safety Evaluation

cc: Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENERGY HARBOR NUCLEAR CORP.  
ENERGY HARBOR NUCLEAR GENERATION LLC  
DOCKET NO. 50-334  
BEAVER VALLEY POWER STATION, UNIT NO. 1  
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 312  
Renewed License No. DPR-66

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Energy Harbor Nuclear Corp.\* acting on its own behalf and as agent for Energy Harbor Nuclear Generation LLC (the licensee), dated October 13, 2020, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I.
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

---

\* Energy Harbor Nuclear Corp. is authorized to act as agent for Energy Harbor Nuclear Generation LLC and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 312, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James G. Danna, Chief  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachments:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: October 15, 2021



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

ENERGY HARBOR NUCLEAR CORP.

ENERGY HARBOR NUCLEAR GENERATION LLC

DOCKET NO. 50-412

BEAVER VALLEY POWER STATION, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 202  
Renewed License No. NPF-73

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Energy Harbor Nuclear Corp., acting on its own behalf and as agent for Energy Harbor Nuclear Generation LLC\* (the licensees), dated October 13, 2020, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

---

\* Energy Harbor Nuclear Corp. is authorized to act as agent for Energy Harbor Nuclear Generation LLC and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-73 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 202, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. Energy Harbor Nuclear Corp. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

James G. Danna, Chief  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License and Technical  
Specifications

Date of Issuance: October 15, 2021

ATTACHMENT TO LICENSE AMENDMENT NOS. 312 AND 202

BEAVER VALLEY POWER STATION, UNITS 1 AND 2

RENEWED FACILITY OPERATING LICENSE NOS. DPR-66 AND NPF-73

DOCKET NOS. 50-334 AND 50-412

Replace the following pages of the Renewed Facility Operating Licenses with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

Renewed Facility Operating License No. DPR-66

Remove  
Page 3

Insert  
Page 3

Renewed Facility Operating License No. NPF-73

Remove  
Page 4

Insert  
Page 4

Replace the following pages of the Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Appendix A, Technical Specifications

Remove  
Page 3.7.4-2  
Page 3.7.4-2

Insert  
Page 3.7.4-1  
Page 3.7.4-2

- (3) Energy Harbor Nuclear Corp., pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Energy Harbor Nuclear Corp., pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
  - (5) Energy Harbor Nuclear Corp., pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter 1: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level  
Energy Harbor Nuclear Corp. is authorized to operate the facility at a steady state reactor core power level of 2900 megawatts thermal.
  - (2) Technical Specifications  
The Technical Specifications contained in Appendix A, as revised through Amendment No. 312, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.
  - (3) Auxiliary River Water System  
(Deleted by Amendment No. 8)

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations set forth in 10 CFR Chapter 1 and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Energy Harbor Nuclear Corp. is authorized to operate the facility at a steady state reactor core power level of 2900 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 202, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto are hereby incorporated in the license. Energy Harbor Nuclear Corp. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.



3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 Four ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,  
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

| CONDITION  | REQUIRED ACTION  | COMPLETION TIME |
|--|--|-----------------|
| A. One required ADV line inoperable.                       | A.1 Restore required ADV line to OPERABLE status.                        | 7 days          |
| B. Two or more required ADV lines inoperable.              | B.1 Restore all but one ADV line to OPERABLE status.                     | 24 hours        |
| C. Required Action and associated Completion Time not met. | C.1 Be in MODE 3.<br><u>AND</u>  | 6 hours         |
|  | C.2 Be in MODE 4 without reliance upon steam generator for heat removal. | 24 hours        |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE  | FREQUENCY   |
|---|---|
| SR 3.7.4.1 Verify one complete cycle of each ADV.             | In accordance with the Surveillance Frequency Control Program |
| SR 3.7.4.2 Verify one complete cycle of each ADV block valve. | In accordance with the Surveillance Frequency Control Program |

SURVEILLANCE REQUIREMENTS (continued)

| SURVEILLANCE |  | FREQUENCY   |
|--------------|--|---|
| SR 3.7.4.3   | Verify one complete cycle of each individual steam generator isolation valve associated with the Residual Heat Release Valve ADV line. | In accordance with the Surveillance Frequency Control Program |



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 312 AND 202 TO RENEWED

FACILITY OPERATING LICENSE NOS. DPR-66 AND NPF-73

ENERGY HARBOR NUCLEAR CORP.

ENERGY HARBOR NUCLEAR GENERATION LLC

BEAVER VALLEY POWER STATION, UNITS NO. 1 AND 2

DOCKET NOS. 50-334 AND 50-412

1.0 INTRODUCTION

By application dated October 13, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20288A444), Energy Harbor Nuclear Corp. (the licensee) requested an amendment to Beaver Valley Power Station (Beaver Valley), Unit 1 and 2 (Facility Operating License Nos. DPR-66 and NPF-73, respectively). The license amendment request (LAR) would revise Unit 1 and Unit 2 Technical Specification (TS) 3.7.4, "Atmospheric Dump Valves (ADVs)." The proposed change corrects non-conservative TS 3.7.4 by increasing the number of required operable Unit 1 atmospheric dump valve lines from three valves to four valves so as to ensure equipment operability requirements are consistent with plant operation and safety analyses. TS 3.7.4 already requires four operable atmospheric dump lines for Unit 2 and since TS 3.7.4 is common to both Unit 1 and Unit 2, changes to Unit 2 are administrative.

This issue is tracked in the Energy Harbor Nuclear Corp. corrective action program, with compensatory actions completed and an administrative control implemented until the license is amended.

2.0 REGULATORY EVALUATION

2.1 System Description

Beaver Valley, Unit 1, is a three-loop Westinghouse pressurized-water reactor design consisting of three steam generators (SGs), with each SG discharging into a main steam line. Each main steam line contains five ASME Code safety valves and one ADV. The three ADV lines, one dedicated to each SG with a manual isolation valve, are required to be OPERABLE in the current TSs. One of the sequenced steps to address a postulated steam generator tube rupture (SGTR) event uses the main steam system to remove heat and cooldown the primary coolant system as quickly as possible. Assuming a loss of offsite power and, therefore, the

unavailability of the main condenser to remove heat, the ADV lines on the intact SGs are credited to remove decay heat during an SGTR by dumping steam to the atmosphere. In addition to the three ADVs, there is a common single residual heat release valve (RHRV) atmospheric dump line capable of serving all three SGs. A separate RHRV dump line from each main steam line, distinct from the ADV dump lines, is routed to a common line equipped with a single manual isolation valve on the upstream side of the RHRV. The capability exists to isolate flow from all three SGs at once; however, isolation of flow from one or two SGs at any given time was not possible. The licensee stated in its application that a modification was performed to include individual manual isolation valves in each of the dump lines from the three SGs leading to the common dump line to the RHRV. The RHRV dump line (also referred to as RHRV ADV line) is not part of the current TSs for Unit 1. Based on the addition of the isolation valves in the individual dump lines from the SGs to the RHRV, the licensee is proposing to include the isolation valves and the RHRV in TS 3.7.4, as further described below.

The ADVs, RHRV, and the dump lines, including all the associated manual isolation valves, are located outside of the containment and are described in Sections 1.0 and 2.1 of the LAR and in Sections 10.3.1 of the Unit 1 Updated Final Safety Analysis Report (UFSAR).

## 2.2 Regulatory Requirements and Guidance

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical Specifications," establishes the regulatory requirements related to the contents of the TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements (SRs); (4) design features; and (5) administrative controls. The regulation does not specify the particular requirements to be included in a plant's TSs.

Section 50.36(a)(1) of 10 CFR requires each applicant for a license to include a summary statement of the bases or reasons for proposed TSs; however, the bases will not become part of the TSs.

Section 50.36(c)(2) of 10 CFR states that LCOs are the lowest functional capability or performance level of equipment required for safe operation of the facility, and when LCOs are not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the LCO is met.

Section 50.36(c)(3) of 10 CFR states that SRs are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

## 3.0 TECHNICAL EVALUATION

### 3.1 Background

An administrative control to require four OPERABLE ADV lines for Unit 1 instead of three as currently required in TS 3.7.4 was implemented on March 30, 2017, by Beaver Valley to address a potential non-conservatism in a vendor methodology communicated in Westinghouse Electric Company LLC (Westinghouse) Nuclear Safety Advisory Letter (NSAL) NSAL-07-11, "Decay Heat Assumption in Steam Generator Tube Rupture Margin-to-Overfill Analysis Methodology," dated November 15, 2007. The non-conservatism impacted the design basis

SGTR analysis predicting SG overflow. An industry Pressurized Water Reactor Owners Group project concluded a plant-specific evaluation of sensitivities to certain analysis input parameters would be necessary to resolve this issue.

The subsequent evaluation of the Unit 1 SGTR margin-to-overflow analysis identified that plant modifications to enable the use of the common RHRV as a fourth ADV were required to increase the heat removal capacity of the main steam system during a potential SGTR. The modifications consisted of installation of a manual isolation valve in each of the three SG steam dump lines to the RHRV, which was completed during a recent refueling outage. These modifications enable the use of the RHRV, which provides increased heat removal capacity to mitigate a potential SGTR event. The licensee has updated the emergency operating procedures to use this RHRV ADV line (the fourth OPERABLE ADV line) in case of a SGTR.

The licensee stated in its application that plant modifications and emergency operating procedure updates ensure Unit 1 system operates in accordance with the SGTR analysis that credits the RHRV ADV line for mitigation of a potential SGTR. The proposed amendment provides a TS LCO that requires four operable ADV lines to ensure compliance with the Unit 1 design and licensing bases and exit the administrative control.

The proposed change corrects the non-conservative minimum required OPERABLE ADV lines in the current TS 3.7.4 to the minimum number of lines that are currently assumed in the safety analyses referenced in the Beaver Valley USFAR Section 14.2.4, as further detailed in Section 3.0 of the LAR, and would allow the removal of the administrative controls currently applied. In addition, the licensee recently added individual manual isolation valves in the three dump lines going from the SGs to the common RHRV dump line, to take credit for the RHRV dump line as a fourth ADV line.

### 3.2 Design Changes in Support of the TS Changes

In Section 3.0 of the LAR, the licensee provided information in support of the qualification of Unit 1 RHRV ADV line to mitigate the SGTR accident, as summarized below:

The main steam system, including piping from the main steam lines to the decay heat release control valve, has been designed, fabricated, welded, inspected, and accepted in accordance with the American National Standards Institute B31.1-1967, Code for Pressure Piping, including addenda through June 30, 1971.

Steam piping from the main steam lines to the decay heat release control valve is designed as Seismic Category I.

The piping is nominally three inches in diameter from the main steam headers to nominal three-inch diameter Class 600 check valves. The three new normally open, manually closed isolation valves are nominally three-inch diameter, Class 600 gate valves. The common header to the RHRV is nominally four inches in diameter. The normally open isolation valve is a nominal four-inch diameter, Class 600 valve, and the normally closed RHRV is a nominal six-inch diameter, Class 600 globe valve. The piping from the RHRV to the environment is nominally four inches in diameter.

The installation of the new manual isolation valves in the RHRV ADV lines was completed prior to the licensee's application for a TS change. The information provided by the licensee

indicates that the qualification level of the new manual isolation valves is commensurate with the qualification level of the existing isolation valves.

### 3.3 Proposed Changes

The NRC staff reviewed the LAR to evaluate whether the TSs, as amended, would provide reasonable assurance of adequate protection of public health and safety. The licensee requested the following changes:

#### 3.3.1 Modify LCO 3.7.4

TS LCO 3.7.4 would be changed:

From: For Unit 1, three ADV lines shall be OPERABLE,  
For Unit 2, four ADV lines shall be OPERABLE.

To: Four ADV lines shall be OPERABLE.

### 3.4 NRC Staff Evaluation of the Proposed Changes

The proposed change to LCO 3.7.4 requires four ADV lines to be operable for Unit 1 and, therefore, both Unit 1 and Unit 2 will have four ADV lines required to be operable. Consequently, a distinction between Unit 1 and Unit 2 with respect to LCO 3.7.4 is no longer needed. The change to Unit 2 is administrative only.

The ADV lines required to be OPERABLE include the three atmospheric relief valves (one per SG) and the associated block (isolation) valves, and one RHRV and its block valve and the individual SG isolation valves. The RHRV and all its associated isolation valves are counted as one of the required ADV lines.

The isolation valves in each ADV line are normally kept open and can be used for isolating an ADV line if necessary. Due to time constraints in the safety analyses, the ADV block valves must remain open for an ADV line to be considered OPERABLE. In addition to the three block valves described above, the RHRV has three normally open isolation valves (one for each SG). The individual SG isolation valves are used to isolate a faulted SG so the RHRV can be used for accident mitigation by allowing steam flow from one or two remaining SGs, depending on a single active failure. In order for the RHRV ADV line to be OPERABLE, the individual SG isolation valves must also be maintained open with the capability of being manually closed.

The Unit 1 ADVs are direct current powered air operated valves utilizing a nonsafety-related air system. The Unit 1 ADVs can normally be operated from the control room. However, in order to meet the assumptions of the operational response analysis used to evaluate single failure concerns, the Unit 1 ADVs (including the residual heat release) must be capable of being operated locally as well as from the control room in order to be considered OPERABLE.

#### 3.4.1 Revise TS 3.7.4

The NRC staff reviewed the information, as it relates to SGTR, provided by the licensee in Section 3.0, "Technical Evaluation" of the LAR, TS Changes and associated TS Bases in

Attachment 2 of the LAR, and Section 14.2.4, "Steam Generator Tube Rupture," of Unit 1 UFSAR, and has concluded the following:

1. The licensee has evaluated the non-conservatism communicated by Westinghouse NSAL-07-11, "Decay Heat Assumption in Steam Generator Tube Rupture Margin-to-Overfill Analysis Methodology," as a result of which a fourth operable ADV line (RHRV) became a necessity.
2. The completion of the modifications to install manual isolation valves in the steam lines from the SGs to the RHRV resulted in gaining an additional ADV line, via the RHRV line, for operability considerations. By closing the newly installed manual isolation valve from the faulted SG, the RHRV can be used for additional decay heat removal from the other two SGs during an SGTR accident.
3. As described in Section 14.2.4, "Steam Generator Tube Rupture," of the Unit 1 UFSAR, the ADV line from the faulted SG is considered unavailable as a result of the accident response steps taken to isolate that SG. Assuming a single active failure other than a failure of the non-safety related instrument air, the available ADV lines for accident mitigation would increase from one to two. If the single active failure is the loss of non-safety related instrument air, the available ADV lines would actually increase from two to three. This is due to local manual actions credited in the analysis to open the ADVs. An additional local manual action credited in the analysis is the closing of one of the three newly installed manual isolation valves from the faulted SG to the RHRV. The licensee stated that all these local manual actions were appropriately considered in the operational analysis.

### 3.4.2 Revise Surveillance Requirement (SR) 3.7.4.3

SR 3.7.4.3 requires periodic verification of one complete cycle of each individual steam generator isolation valve associated with the Unit 2 RHRV ADV line. The licensee is proposing to expand the applicability of SR 3.7.4.3 to Unit 1.

SR 3.7.4.3 currently states:

Only applicable to Unit 2

Verify one complete cycle of each individual steam generator isolation valve associated with the Unit 2 Residual Heat Release Valve ADV line.

The licensee proposed to delete the note "Only applicable to Unit 2" in its entirety and revise the rest of the SR by removing "Unit 2" to state:

Verify one complete cycle of each individual steam generator isolation valve associated with the Residual Heat Release Valve ADV line."

### 3.4.3 Expanded applicability of SRs 3.7.4.1 and 3.7.4.2

SR 3.7.4.1 states "Verify one complete cycle of each ADV."

SR 3.7.4.2 states "Verify one complete cycle of each ADV block valve."

While there are no changes proposed to the description of the SRs, the licensee stated in the TS Bases that the SRs would apply to the following additional components per the proposed change to TS 3.7.4:

SR 3.7.4.1 will apply to the Unit 1 RHRV, as it would become a required operable ADV.

SR 3.7.4.2 will apply to the manual isolation valves installed in the three SG lines to the RHRV for Unit 1.

### 3.5 Dose Consequences

The licensee stated that the existing dose consequence analysis assumes failure of an ADV line valve to close, which could allow an unmitigated release of radioactive steam from the ruptured SG to the environment. While there could be additional steam releases through the fourth ADV line that could result in increased environmental releases through the intact SGs, the licensee judged them to be insignificant compared to direct release through the failed-open ADV line. The NRC staff concludes that the qualitative reasons provided by the licensee for concluding the impact of potential additional steam releases and the associated contribution to dose through the fourth ADV line would be negligible, as the predominant contribution to dose results from the assumption of a failed open ADV line from the faulted SG.

### 3.6 Technical Conclusion

For the TS 3.7.4 modification, which would increase the number of operable ADV lines for Beaver Valley, Unit 1, from three to four operable lines, NRC staff considered the information, as it relates to SGTR, provided by the licensee in Section 3.0, "Technical Evaluation" of the LAR, TS Changes and associated TS Bases in Attachment 2 of the LAR, and Section 14.2.4, "Steam Generator Tube Rupture," of Beaver Valley, Unit 1, UFSAR. The staff concludes that the licensee has evaluated the non-conservatism communicated by Westinghouse NSAL-07-11, "Decay Heat Assumption in Steam Generator Tube Rupture Margin-to-Overfill Analysis Methodology," as a result of which a fourth operable ADV line (RHRV) became necessary.

The completion of the modifications to install manual isolation valves in the steam lines from the SGs to the RHRV resulted in gaining an additional ADV line, via the RHRV line, for operability considerations. By closing the newly installed manual isolation valve from the faulted SG, the RHRV can be used for additional decay heat removal from the other two SGs during an SGTR accident.

The ADV line from the faulted SG is considered unavailable as a result of the accident response steps taken to isolate that SG. Assuming a single active failure other than a failure of the nonsafety-related instrument air, the available ADV lines for accident mitigation would increase from one to two. If the single active failure is the loss of nonsafety-related instrument air, the available ADV lines would actually increase from two to three. This is due to local manual actions credited in the analysis to open the ADVs. An additional local manual action credited in the analysis is the closing of one of the three newly installed manual isolation valves from the faulted SG to the RHRV. The NRC staff agrees with the licensee that these local manual actions were appropriately considered in the operational analysis.

The NRC staff concludes that the licensee has provided adequate justification to support the change in TS 3.7.4 which would increase the number of operable ADV from three to four. The staff finds the change to SR 3.7.4.3 is acceptable because both Unit 1 and Unit 2 would have



individual steam generator isolation valves associated with the RHRV ADV line and deleting the note would indicate that SR 3.7.4.3 is applicable to both Unit 1 and Unit 2. The proposed change is administrative for Unit 2.

The NRC staff finds the expanded applicability of SR 3.7.4.1 and 3.7.4.2 acceptable because the RHRV and the associated isolation valves are credited in the analyses, and their inclusion in the SRs will ensure the operability of these valves. The licensee has committed to apply the existing SRs 3.7.4.1 and 3.7.4.2, and the revised SR 3.7.4.3, as applicable, to the existing Beaver Valley, Unit 1, RHRV and the new Beaver Valley, Unit 1, manual isolation valves. Therefore, the NRC staff concludes that existing SRs 3.7.4.1, 3.7.4.2, and revised SR 3.7.4.3 will continue to demonstrate that LCO 3.7.4 is being met, thus complying with the requirements of 10 CFR 50.36(c)(3) for Beaver Valley, Unit 1.

Section 50.36(a)(1) of 10 CFR requires each applicant for a license to include a summary statement of the bases or reasons for proposed TSs; however, the bases shall not become part of the TSs. The licensee complied with this requirement by providing bases changes with the LAR.

The licensee proposed to revise LCO 3.7.4 to require four operable ADV lines (including the RHRV) to address a non-conservatism in the existing analysis. In addition, the licensee added new manual valves to isolate the three SGs from the RHRV. The existing actions to shut down the reactor or follow any remedial action permitted by TS 3.7.4 is unchanged. Therefore, the NRC staff concludes that the license has met the requirement of 10 CFR 50.36(c)(2).

The licensee met Section 50.36(c)(3) of 10 CFR by subjecting the RHRV and the three manual isolation valves to SURVEILLANCE REQUIREMENTS, consistent with the revised analysis.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment on July 22, 2021. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (85 FR 77270, dated December 1, 2020). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

#### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by

operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal contributor: Nageswara Karipineni  
Nan Chien  
Parillo, John

Date of Issuance: October 15, 2021

SUBJECT: BEAVER VALLEY POWER STATION, UNIT NOS. 1 AND 2 – ISSUANCE OF AMENDMENT NOS. 312 AND 202 RE: ATMOSPHERIC DUMP VALVES (EPID L-2020-LLA-0229) DATED OCTOBER 15, 2021

**DISTRIBUTION:**

- PUBLIC
- PM File Copy
- RidsACRS\_MailCTR Resource
- RidsNrrDnrlNcsg Resource
- RidsNrrDorLpl1 Resource
- RidsNrrDssStsb Resource
- RidsNrrDssScpb Resource
- RidsNrrLAKZelevnock Resource
- RidsNrrPMBeaverValley Resource
- RidsRgn1MailCenter Resource
- NKariipineni, NRR
- NChien NRR
- JWilson, NRR
- JParillo, NRR

**ADAMS Accession No: ML21214A275**

\*by memorandum

|        |                  |                    |                  |                  |
|--------|------------------|--------------------|------------------|------------------|
| OFFICE | NRR/DORL/LPL1/PM | NRR/DORL/LPL1/LAiT | NRR/DORL/LPL3/LA | NRR/DSS/SCP/B/BC |
| NAME   | SGoetz           | KZelevnock         | SRohrer          | BWittick         |
| DATE   | 08/23/2021       | 08/04/2021         | 08/04/2021       | 06/16/2021       |
| OFFICE | NRR/DRA/ARCB/BC  | NRR/DSS/STSB/BC    | OGC – NLO        | NRR/DORL/LPL1/BC |
| NAME   | KHsueh           | NJordan            | KGamin           | JDanna           |
| DATE   | 07/27/2021       | 08/01/2021         | 09/16/2021       | 10/14/2021       |
| OFFICE | NRR/DORL/LPL1/PM |                    |                  |                  |
| NAME   | SGoetz           |                    |                  |                  |
| DATE   | 10/15/2021       |                    |                  |                  |

**OFFICIAL RECORD COPY**