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

May 9, 2022

Mr. Robert Schuetz
Chief Executive Officer
Energy Northwest
76 North Power Plant Loop
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352

SUBJECT: COLUMBIA GENERATING STATION - ISSUANCE OF AMENDMENT NO. 267 TO ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF–546, REVISION 0, "REVISE APRM CHANNEL ADJUSTMENT SURVEILLANCE REQUIREMENT" (EPID L-2021-LLA-0084)

Dear Mr. Schuetz:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 267 to Renewed Facility Operating License No. NPF-21 for the Columbia Generating Station (Columbia). The amendment consists of changes to the Technical Specifications (TS) in response to your application dated May 8, 2021.

The amendment revises the average power range monitor (APRM) requirements in the technical specifications (TSs) for Columbia. Specifically, the amendment alters Surveillance Requirement (SR) 3.3.1.1.2 of TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," to verify that calculated (i.e., calorimetric heat balance) power is no more than 2 percent greater than the APRM channel output. This includes a variation to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

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/

Mahesh L. Chawla, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosures:
1. Amendment No. 267 to NPF-21
2. Safety Evaluation

cc: Listserv

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

ENERGY NORTHWEST

DOCKET NO. 50-397

COLUMBIA GENERATING STATION

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 267
License No. NPF-21

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Energy Northwest (the licensee), dated May 8, 2021, 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.

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-21 is hereby amended to read as follows:

   (2) Technical Specifications and Environmental Protection Plan

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 267 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jennifer L. Dixon-Herrity

Digitally signed by Jennifer L. Dixon-Herrity
Date: 2022.05.09 15:03:43 -04'00'

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-21
and the Technical Specifications

Date of Issuance: May 9, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 267 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-21

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

Replace the following pages of the Renewed Facility Operating License No. NPF-21 and Appendix A, Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Renewed Facility Operating License

REMOVE	INSERT
-4-	-4-

Technical Specification

REMOVE	INSERT
3.3.1.1-1	3.3.1.1-1
3.3.1.1-4	3.3.1.1-4

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 267 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

a. For Surveillance Requirements (SRs) not previously performed by existing SRs or other plant tests, the requirement will be considered met on the implementation date and the next required test will be at the interval specified in the Technical Specifications as revised in Amendment No. 149.

(3) Deleted.

(4) Deleted.

(5) Deleted.

(6) Deleted.

(7) Deleted.

(8) Deleted.

(9) Deleted.

(10) Deleted.

(11) Deleted.

(12) Deleted.

(13) Deleted.

3.3 INSTRUMENTATION

3.3.1.1 Reactor Protection System (RPS) Instrumentation

LCO 3.3.1.1 The RPS instrumentation for each Function in Table 3.3.1.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.1.1-1

ACTIONS

----------NOTES----------

1. Separate Condition entry is allowed for each channel.
2. When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the average power range monitor (APRM) output by more than 2% rated thermal power (RTP) while operating at ≥ 25% RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip. OR ----------NOTE---------- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ---------- A.2 Place associated trip system in trip.	12 hours 12 hours
----------NOTE---------- Not applicable for Functions 2.a, 2.b, 2.c, 2.d, or 2.f. ---------- B. One or more Functions with one or more required channels inoperable in both trip systems.	B.1 Place channel in one trip system in trip. OR B.2 Place one trip system in trip.	6 hours 6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.1.1.2	----------NOTE---------- Not required to be performed until 12 hours after THERMAL POWER ≥ 25% RTP. ---------- Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at ≥ 25% RTP.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.3	----------NOTE---------- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.4	Perform CHANNEL FUNCTIONAL TEST.	In accordance with the Surveillance Frequency Control Program
SR 3.3.1.1.5	Verify the source range monitor (SRM) and intermediate range monitor (IRM) channels overlap.	Prior to withdrawing SRMs from the fully inserted position
SR 3.3.1.1.6	----------NOTE---------- Only required to be met during entry into MODE 2 from MODE 1. ---------- Verify the IRM and APRM channels overlap.	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 NO. 267 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-21

ENERGY NORTHWEST

COLUMBIA GENERATING STATION

DOCKET NO. 50-397

1.0 INTRODUCTION

By application dated May 8, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21130A573), Energy Northwest (the licensee) submitted a license amendment request for Columbia Generating Station (Columbia). The amendment would revise the average power range monitor (APRM) requirements in the technical specifications (TSs) for Columbia. Specifically, the proposed amendment alters Surveillance Requirement (SR) 3.3.1.1.2 of TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation." This proposed change revises the SR to verify that the calculated (i.e., calorimetric heat balance) power is no more than 2 percent greater than the APRM channel output.

The SR requires the APRM channel to be adjusted such that calibrated power is not more than 2 percent greater than the APRM indicated power when operating at greater than or equal to (≥) 25 percent of rated thermal power (RTP). This change revised the SR to distinguish between APRM indications that are consistent with the accident analyses and those that provide additional margin. This includes a variation to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed change is consistent with TS Task Force (TSTF) Traveler TSTF-546, Revision 0, "Revise APRM Channel Adjustment Surveillance Requirement," dated April 21, 2016 (ML16112A208). The U.S. Nuclear Regulatory Commission (NRC or the Commission) approved the traveler on August 31, 2017 (ML17206A431).

2.0 REGULATORY EVALUATION

2.1 System Description

The APRM system is a safety-related system with two purposes. One purpose is to monitor neutron flux within the core to provide an indication of core power. The other purpose is to provide reactor scram and control rod block signals to preserve the fuel cladding integrity. The APRM channels receive input signals from the local power range monitors located in diverse

axial and radial locations within the reactor core to provide an indication of the power distribution and local power changes. The APRM channels average the local power range monitor inputs, and each APRM provides a continuous indication of average reactor power from a small percentage of RTP to greater than RTP. A gain adjustment can be made to each APRM channel output allowing it to be calibrated to the calculated core thermal power. Currently, the TS allowable absolute difference between calculated core thermal power and the APRM channel output is 2 percent.

2.2 Description of the Proposed Changes

The licensee's proposed changes are based on TSTF-546, Revision 0. The licensee states that the proposed changes align with the intent of TSTF-546 but implements the change in a different manner.

TSTF-546, Revision 0, proposed changes to the Standard TS (STS) and STS Bases for boiling-water reactors (BWRs) in NUREG-1433, "Standard Technical Specifications, General Electric BWR/4 Plants," Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ML12104A192 and ML12104A193, respectively); and in NUREG-1434, "Standard Technical Specifications, General Electric BWR/6 Plants," Volume 1, "Specifications," and Volume 2, "Bases, Revision 4.0, dated April 2012 (ML12104A195 and ML12104A196, respectively). The proposed changes in TSTF-546 would revise the BWR STS SR 3.3.1.1.2 for APRMs, which is associated with the STS limiting conditions for operation (LCOs) for RPS instrumentation. Currently, STS SR 3.3.1.1.2 states (bracketed information is considered plant-specific):

> Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power ≤ 2% RTP [plus any gain adjustment required by LCO 3.2.4, "Average Power Range Monitor (APRM) Setpoints"] while operating at ≥ 25% RTP.

TSTF-546, Revision 0, proposed to revise STS SR 3.3.1.1.2 to state:

> Compare the average power range monitor (APRM) channels to the calculated power. Adjust the APRM channels if the calculated power exceeds the APRM output by more than 2% RTP while operating at ≥ 25% RTP.

The proposed STS Bases changes in TSTF-546 provide the following clarification regarding the revised STS SR 3.3.1.1.2:

> If the heat balance calculated reactor power exceeds the APRM channel output by more than 2% RTP, the APRM is not declared inoperable, but must be adjusted consistent with the heat balance calculated power. If the APRM channel output cannot be properly adjusted, the channel is declared inoperable.

Similar to TSTF-546, the licensee's proposed changes would revise the TSs to only require adjustment of the APRM channels if the calculated reactor power exceeds the APRM channel output by more than 2 percent of RTP.

2.3 Variations

The licensee proposed the following variations from the TS changes described in TSTF-546:

1. Use the following alternate wording for TS SR 3.3.1.1.2 to eliminate the requirement to adjust the APRM when the APRM is conservative with respect to calculated power:

   > Verify the calculated power does not exceed the average power range monitor (APRM) channels greater than 2% RTP while operating at ≥ 25% RTP.

2. Maintain the gain adjustment separate from the performance of TS SR 3.3.1.1.2.

3. For TS 3.3.1.1, add a new Action Table note:

   When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the average power range monitor (APRM) output by more than 2% rated thermal power (RTP) while operating at ≥ 25% RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

2.4 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 content of TSs.

The regulation at 10 CFR 50.36(c)(2) states, in part, that LCOs “are the lowest functional capability or performance levels of equipment required for safe operation of the facility.”

The regulation at 10 CFR 50.36(c)(3) 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 limiting conditions for operation will be met.”

The NRC staff’s guidance for the review of TSs is in chapter 16, “Technical Specifications,” Revision 3, of NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition,” dated March 2010 (ML100351425),

3.0 TECHNICAL EVALUATION

The existing TS SR 3.3.1.1.2 requires verification that the absolute difference between the APRM channels and the calculated power ≤ 2 percent RTP while operating at ≥ 25 percent RTP. If the absolute difference is greater than 2 percent, the APRM channel is declared inoperable. An acceptable way to restore operability is to adjust the gain for the APRM channel to restore the absolute difference to ≤ 2 percent. If the APRM channel is reading higher than the calculated thermal power, this adjustment would be non-conservative with respect to the RPS trip setpoint. If the APRM channel is reading lower than the calculated thermal power, this adjustment would be conservative with respect to the RPS trip setpoint.

The proposed change would require adjustment of the APRM channel only if the APRM is non-conservative with respect to calculated thermal power (i.e., reading lower than calculated thermal power). In this situation, the adjustment of the APRM channel is permitted, but not required, if the APRM channel is conservative with respect to the calculated thermal power.

The licensee proposed to add a TS note to permit a 2-hour delay before entering the TS conditions and required actions for an APRM that is inoperable due to the calculated power exceeding the APRM output by more than 2 percent of RTP. The note allows entry into the associated Conditions and Required Actions to be delayed for up to 2 hours if the APRM is indicating a lower value than the calculated power. The licensee stated in the justification that the "[2-hour] delay period is reasonable since it is consistent with power distribution limit related completion times in TS 3.2.2 and TS 3.2.3."

The licensee cited an NRC-approved amendment for multiple Exelon BWR units, which received approval January 16, 2019 (ML18304A365), as precedents that justify the proposed 2-hour delay period for the same 2-hour delay for non-conservative APRM adjustment, citing the power distribution (thermal) limits as well as other completions times in the BWR STS for the restoration of parameters, subsystems, and channels within TS limits. Columbia is similar in functionality, design, and TS requirements; therefore, the NRC staff finds that the 2-hour delay period is reasonable. Although the licensee's proposed TS changes are different than the proposed STS changes in TSTF-546, entry into the TS conditions and required actions would still occur if the licensee could not adjust the APRM channels to meet the revised SR. Therefore, the NRC staffs the proposed change to TS 3.3.1.1 acceptable.

The regulation at 10 CFR 50.36(c)(3) requires that the TSs contain SRs, which 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 limiting conditions for operation will be met. The NRC staff reviewed the changes proposed to SR 3.3.1.1.2 as described in this SE. The NRC staff determined that the SR, as modified, continues to provide appropriate controls and acceptance criteria for adjustment of the APRMs to ensure that the APRMs appropriately reflect actual reactor power. The NRC staff determined that the SR continues to verify the operability of the APRMs and provide assurance that the necessary quality of systems and components is maintained.

3.1 Conclusion

The NRC staff reviewed the proposed changes to the TSs, and determined that they meet the standards for TSs in 10 CFR 50.36(b). The proposed changes to the SR 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, and satisfy 10 CFR 50.36(c)(3). With the proposed changes, the TSs will continue to provide appropriate remedial actions, in accordance with 10 CFR 50.36(c)(2), when the LCO for RPS Instrumentation is not met as a result of an inoperable APRM channel. Additionally, the changes to the TSs were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP chapter 16.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Washington State official was notified of the proposed issuance of the amendment on April 4, 2022. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. 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 published in the *Federal Register* on July 13, 2021 (86 FR 36779), and there has been no public comment on such finding. Accordingly, the amendment meets 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: T. Sweat

Date: May 9, 2022

SUBJECT: COLUMBIA GENERATING STATION - ISSUANCE OF AMENDMENT NO. 267 TO ADOPT TECHNICAL SPECIFICATIONS TASK FORCE (TSTF) TRAVELER TSTF–546, REVISION 0, “REVISE APRM CHANNEL ADJUSTMENT SURVEILLANCE REQUIREMENT” (EPID L-2021-LLA-0084) DATED MAY 9, 2022

DISTRIBUTION:

PUBLIC	RidsNrrLAPBlechman Resource	WRoggenbrodt, NRR
PM File Copy	RidsNrrPMColumbia Resource	NCarte, NRR
RidsACRS_MailCTR Resource	RidsRgn4MailCenter Resource	GWerner, RIV
RidsNrrDorlLpl4 Resource	RidsNrrDexEicb Resource	PNieubaum, RIV
RidsNrrDssStsb Resource	TSweat, NRR	ADonley, RIV

ADAMS Accession No.: ML22098A064 * via email

OFFICE	NRR/DORL/LPL4/PM*	NRR/DORL/LPL4/LA*	NRR/DSS/STSB/BC*	NRR/DEX/EICB/BC*
NAME	MChawla	PBlechman	VCusumano	MWaters
DATE	4/7/2022	4/12/22	3/24/2022	4/29/2022
OFFICE	NRR/DORL/LPL4/BC*	NRR/DORL/LPL4/PM*		
NAME	JDixon-Herrity	MChawla		
DATE	5/5/2022	5/9/2022		

OFFICIAL RECORD COPY