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May 25, 2022

GO2-22-042

10 CFR 50.90

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

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT
TSTF-580, "PROVIDE EXCEPTION FROM ENTERING MODE 4 WITH NO
OPERABLE RHR SHUTDOWN COOLING" USING THE CONSOLIDATED
LINE ITEM IMPROVEMENT PROCESS**

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Energy Northwest is submitting a request for an amendment to the Technical Specifications (TS) for Columbia Generating Station (Columbia).

Energy Northwest requests adoption of TSTF-580, "Provide Exception from Entering Mode 4 With No Operable RHR Shutdown Cooling," which is an approved change to the Improved Standard Technical Specifications, into the Columbia TS. The proposed amendment provides a TS exception to entering Mode 4 if both required Residual Heat Removal shutdown cooling subsystems are inoperable.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked to show the proposed changes. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides existing TS Bases pages marked to show the proposed changes and is provided for information only.

Approval of the proposed amendment is requested within one year from the date of this letter. Once approved, the amendment shall be implemented within 90 days thereafter.

There are no regulatory commitments made in this submittal.

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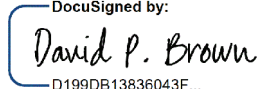
In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Washington State Official.

If there are any questions or if additional information is needed, please contact Mr. R.M. Garcia, Licensing Supervisor, at 509-377-8463.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 25th day of May 2022.

Respectfully,

DocuSigned by:

D199DB13836043F...

David P. Brown
Site Vice President

Enclosure: Description and Assessment

Attachments: 1. Proposed Columbia Technical Specification Changes (Mark-Up)
 2. Revised Columbia Technical Specification Pages
 3. Proposed Columbia Technical Specification Bases Changes
 (Mark-Up for Information Only)

cc: NRC RIV Regional Administrator
 NRC NRR Project Manager
 NRC Senior Resident Inspector/988C
 CD Sonoda – BPA/1399
 EFSECutc.wa.gov – EFSEC
 E Fordham – WDOH
 R Brice – WDOH
 L Albin – WDOH

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DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

Energy Northwest requests adoption of TSTF-580, "Provide Exception from Entering Mode 4 With No Operable RHR Shutdown Cooling," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the Columbia Generating Station (Columbia) Technical Specifications (TS). The proposed amendment provides a TS exception to entering Mode 4 if both required Residual Heat Removal (RHR) shutdown cooling subsystems are inoperable.

2.0 ASSESSMENT

2.1 Applicability of Safety Evaluation

Energy Northwest has reviewed the safety evaluation for TSTF-580 provided to the Technical Specifications Task Force in letter dated July 11, 2021. This review included a review of the Nuclear Regulatory Commission (NRC) staff's evaluation, as well as the information provided in TSTF-580. Energy Northwest has concluded that the justifications presented in TSTF-580 and the safety evaluation prepared by the NRC staff are applicable to Columbia and justify this amendment for the incorporation of the changes to the Columbia TS.

Adoption of TSTF-566, "Revise Actions for Inoperable RHR Shutdown Cooling Subsystems," was approved by the NRC for Columbia on January 25, 2021 (ADAMS Accession No. ML21005A178).

2.2 Variations

TSTF-580 makes additional changes to the Actions of TS 3.4.9, "RHR Shutdown Cooling System – Hot Shutdown" that were revised by TSTF-566, "Revise Actions for Inoperable RHR Shutdown Cooling Subsystems," which is consistent with the staff's approval of TSTF-580. The TSTF-580 justification states that adoption is dependent on previous adoption of TSTF-566-A, which was implemented at Columbia on March 4, 2021.

Columbia is a Boiling Water Reactor (BWR)/5 plant. Columbia's TS 3.4.9 is aligned with BWR/6 Standard Technical Specifications (NUREG-1434). Energy Northwest is not proposing any variations from the TS changes described in TSTF-580 or the applicable parts of the NRC staff's safety evaluation dated July 11, 2021.

Energy Northwest is proposing the following variations associated with TS Bases markups provided in NUREG-1434 for TSTF-580. These variations do not affect the applicability of TSTF-580 or the NRC staff's safety evaluation dated July 11, 2021.

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2.2.1 TS Bases 3.4.9

NUREG-1434 contains "Spent Fuel Pool Cooling System" as alternate methods for decay heat removal. Columbia's TS Bases do not contain "Spent Fuel Pool Cooling System," as Columbia's Fuel Pool Cooling System does not contain the word "Spent." This is an acceptable variation.

Columbia's Fuel Pool Cooling System cannot be aligned for use for decay heat removal from the core as an alternate method of decay heat removal without the Reactor Pressure Vessel (RPV) head off and the RPV cavity flooded up to the Fuel Pool level with the gates open between the RPV cavity and the Fuel Pool. This is an acceptable variation.

Additionally, Columbia TS Bases contain additional systems not included in NUREG-1434: Condensate, Main Steam, Control Rod Drive, and Emergency Core Cooling Systems. These systems are specific to Columbia used in alternate decay heat removal alignments and provide more detail than currently specified in NUREG-1434 and TSTF-580. As such, this is an acceptable variation.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

Energy Northwest requests adoption of TSTF-580, "Provide Exception from Entering Mode 4 With No Operable RHR Shutdown Cooling," which is an approved change to the ISTS, into the Columbia TS. The proposed amendment provides a TS exception to entering Mode 4 if both required RHR shutdown cooling subsystems are inoperable.

Energy Northwest has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment" as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The proposed change would exempt entering Mode 4 if both required RHR shutdown cooling subsystems are inoperable and other operating modes of the RHR System are inoperable, such as Low Pressure Coolant Injection and RHR suppression pool cooling, and both subsystems of the support system for the RHR System heat exchangers, the RHR Service Water (RHRSW) System, are inoperable. The TS for those RHR operating modes and the RHRSW System require entering Mode 4 when both required subsystems are inoperable. Those operating modes and systems are not initiators to any accident previously evaluated but are used to mitigate the consequences of an accident previously

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evaluated. However, the consequences of an accident previously evaluated resulting from remaining in Mode 3 versus Mode 4 when RHR shutdown cooling subsystems are inoperable are not significantly increased because there would be no dependable method to remove post-accident decay heat in Mode 4 if both required RHR shutdown cooling subsystems are inoperable.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed change provides a TS exception to entering Mode 4 if both required RHR shutdown cooling subsystems are inoperable. The proposed change does not affect the design function or operation of the RHR shutdown cooling subsystems. No new equipment is being installed as a result of the proposed change. The proposed change only affects the actions taken when both RHR shutdown cooling subsystems are inoperable, so no new failure mechanisms are created.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The proposed change provides a TS exception to entering Mode 4 if both required RHR shutdown cooling subsystems are inoperable. The proposed change does not change any specific values or controlling parameters that define margin in the design or licensing basis. No safety limits are affected by the proposed change. The proposed change applies when both required RHR shutdown cooling subsystems are inoperable; therefore, no design or safety limits associated with the operation of the RHR System are affected.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Energy Northwest concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

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3.2 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) 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.

4.0 ENVIRONMENTAL CONSIDERATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

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Proposed Columbia Technical Specification Changes (Mark-Up)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown

LCO 3.4.9 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

- NOTES-----
- 1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.
 - 2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for performance of Surveillances.
-

APPLICABILITY: MODE 3 with reactor steam dome pressure less than 48 psig.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or two RHR shutdown cooling subsystems inoperable.	A.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore RHR shutdown cooling subsystem(s) to OPERABLE status.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two RHR shutdown cooling subsystems inoperable.	C.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
D. Required Action and associated Completion Time of Condition C not met.	<p>-----NOTE----- LCO 3.0.3 and all other LCO Required Actions requiring a MODE change to MODE 4 may be suspended until one RHR shutdown cooling subsystem is restored to OPERABLE status. -----</p> <p>D.1 Initiate action to restore one RHR shutdown cooling subsystem to OPERABLE status.</p>	Immediately
<p>EG. No RHR shutdown cooling subsystem in operation.</p> <p><u>AND</u></p> <p>No recirculation pump in operation.</p>	<p>EG.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.</p> <p><u>AND</u></p> <p>EG.2 Verify reactor coolant circulation by an alternate method.</p> <p><u>AND</u></p> <p>EG.3 Monitor reactor coolant temperature and pressure.</p>	<p>Immediately</p> <p>1 hour from discovery of no reactor coolant circulation</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>

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Revised Columbia Technical Specification Pages

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Residual Heat Removal (RHR) Shutdown Cooling System - Hot Shutdown

LCO 3.4.9 Two RHR shutdown cooling subsystems shall be OPERABLE, and, with no recirculation pump in operation, at least one RHR shutdown cooling subsystem shall be in operation.

-----NOTES-----

1. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation for up to 2 hours per 8 hour period.
2. One RHR shutdown cooling subsystem may be inoperable for up to 2 hours for performance of Surveillances.

APPLICABILITY: MODE 3 with reactor steam dome pressure less than 48 psig.

ACTIONS

-----NOTE-----

Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RHR shutdown cooling subsystem inoperable.	A.1 Verify an alternate method of decay heat removal is available.	1 hour <u>AND</u> Once per 24 hours thereafter
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action to restore RHR shutdown cooling subsystem to OPERABLE status.	Immediately

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Two RHR shutdown cooling subsystems inoperable.	C.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem.	1 hour <u>AND</u> Once per 24 hours thereafter
D. Required Action and associated Completion Time of Condition C not met.	<p>-----NOTE----- LCO 3.0.3 and all other LCO Required Actions requiring a MODE change to MODE 4 may be suspended until one RHR shutdown cooling subsystem is restored to OPERABLE status. -----</p> <p>D.1 Initiate action to restore one RHR shutdown cooling subsystem to OPERABLE status.</p>	Immediately
E. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	<p>E.1 Initiate action to restore one RHR shutdown cooling subsystem or one recirculation pump to operation.</p> <p><u>AND</u></p> <p>E.2 Verify reactor coolant circulation by an alternate method.</p> <p><u>AND</u></p> <p>E.3 Monitor reactor coolant temperature and pressure.</p>	<p>Immediately</p> <p>1 hour from discovery of no reactor coolant circulation</p> <p><u>AND</u></p> <p>Once per 12 hours thereafter</p> <p>Once per hour</p>

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Proposed Columbia Technical Specification Bases Changes
(Mark-Up For Information Only)

BASES

ACTIONS

A Note has been provided to modify the ACTIONS related to RHR shutdown cooling subsystems. Section 1.3, Completion Times, specifies once a Condition has been entered, subsequent divisions, subsystems, components or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable shutdown cooling subsystems provide appropriate compensatory measures for separate inoperable shutdown cooling subsystems. As such, a Note has been provided that allows separate Condition entry for each inoperable RHR shutdown cooling subsystem.

A.1

With one RHR shutdown cooling subsystem inoperable for decay heat removal, except as permitted by LCO Note 2, the overall reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced RHR shutdown cooling capability. Therefore an alternate method of decay heat removal must be provided.

~~With both RHR shutdown cooling subsystems inoperable, an alternate method of decay heat removal must be provided in addition to that provided for the initial RHR shutdown cooling subsystem inoperability. This re-establishes backup decay heat removal capabilities, similar to the requirements of the LCO. The 1 hour Completion Time is based on the decay heat removal function and the probability of a loss of the available decay heat removal capabilities. Furthermore, verification of the functional availability of these alternate method(s) must be reconfirmed every 24 hours thereafter. This will provide assurance of continued heat removal capability.~~

The required cooling capacity of the alternate method should be sufficient to maintain or reduce temperature. Decay heat removal by ambient losses can be considered as, or contributing to, the alternate method capability. Alternate methods that can be used include (but are not limited to) the Condensate and Main Steam Systems, the Reactor Water Cleanup System (by itself, or using feed and bleed in combination with the Control Rod Drive System or Condensate System), a combination of an ECCS pump and a safety/relief valve, or an inoperable but functional RHR shutdown cooling subsystem.

BASES

ACTIONS (continued)

B.1

If the required alternate method~~(s)~~ of decay heat removal cannot be verified within one hour, immediate action must be taken to restore the inoperable RHR shutdown cooling subsystem~~(s)~~ to operable status. The Required Action will restore redundant decay heat removal paths. The immediate Completion Time reflects the importance of maintaining the availability of two paths for heat removal.

Insert 1

EG.1, EG.2, and EG.3

With no RHR shutdown cooling subsystem and no recirculation pump in operation, except as is permitted by LCO Note 1, reactor coolant circulation by the RHR shutdown cooling subsystem or one recirculation pump must be restored without delay.

Until RHR or recirculation pump operation is re-established, an alternate method of reactor coolant circulation must be placed into service. This will provide the necessary circulation for monitoring coolant temperature. The 1 hour Completion Time is based on the coolant circulation function and is modified such that the 1 hour is applicable separately for each occurrence involving a loss of circulation. Furthermore, verification of the functioning of the alternate method must be reconfirmed every 12 hours thereafter. This will provide assurance of continued temperature monitoring capability.

During the period when the reactor coolant is being circulated by an alternate method (other than by the required RHR shutdown cooling subsystem or recirculation pump), the reactor coolant temperature and pressure must be periodically monitored to ensure proper function of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

This Surveillance verifies that one RHR shutdown cooling subsystem or recirculation pump is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

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Insert 1:

C.1

With both RHR shutdown cooling subsystems inoperable, an alternate method of decay heat removal must be provided in addition to that provided for the initial RHR shutdown cooling subsystem inoperability. This re-establishes backup decay heat removal capabilities, similar to the requirements of the LCO. The 1 hour Completion Time is based on the decay heat removal function and the probability of a loss of the available decay heat removal capabilities. Furthermore, verification of the functional availability of these alternate method(s) must be reconfirmed every 24 hours thereafter. This will provide assurance of continued heat removal capability.

The required cooling capacity of the alternate method should be sufficient to maintain or reduce temperature. Decay heat removal by ambient losses can be considered as, or contributing to, the alternate method capability. Alternate methods that can be used include (but are not limited to) the Condensate and Main Steam Systems, the Reactor Water Cleanup System (by itself, or using feed and bleed in combination with the Control Rod Drive System or Condensate System), a combination of an ECCS pump and a safety/relief valve, or an inoperable but functional RHR shutdown cooling subsystem.

D.1

If the required alternate methods of decay heat removal cannot be verified within one hour, immediate action must be taken to restore at least one RHR shutdown cooling subsystem to OPERABLE status. The immediate Completion Time reflects the importance of restoring a method of heat removal.

Required Action D.1 is modified by a Note indicating that all required MODE changes to MODE 4 may be suspended until one RHR shutdown cooling subsystem is restored to OPERABLE status. In this case, LCO 3.0.3 and other Required Actions directing entry into MODE 4 could force the unit into a less safe condition in which there may be no adequate means to remove decay heat. It is more appropriate to allow the restoration of one of the RHR shutdown cooling subsystems before requiring entry into a condition in which that subsystem would be needed and exiting a condition where other sources of cooling are available. When at least one RHR subsystem is restored to OPERABLE status, the Completion Times of LCO 3.0.3 or other Required Actions resume at the point at which they were suspended.