



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

January 10, 2022

Mr. Rod L. Penfield
Site Vice President
Energy Harbor Nuclear Corp.
Perry Nuclear Power Plant
P.O. Box 97, SB306
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 – ISSUANCE OF AMENDMENT NO. 197 REGARDING THE ADOPTION OF TSTF-566, REVISION 0, “REVISE ACTIONS FOR INOPERABLE RHR SHUTDOWN COOLING SUBSYSTEM,” AND TSTF-580, REVISION 1, “PROVIDE EXCEPTION FROM ENTERING MODE 4 WITH NO OPERABLE RHR SHUTDOWN COOLING” (EPID L-2020-LLA-0281)

Dear Mr. Penfield:

The U.S Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 197 to Facility Operating License No. NPF-58 for Perry Nuclear Power Plant, Unit No. 1 (Perry). The amendment consists of changes to the technical specifications (TS) in response to your application dated December 14, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20350B499), as supplemented by letter dated September 2, 2021 (ADAMS Accession No. ML21245A215).

The proposed changes would revise TS 3.4.9, “Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown,” and TS 3.4.10, “Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown,” in accordance with Technical Specifications Task Force Traveler, TSTF-566, Revision 0, “Revise Actions for Inoperable RHR Shutdown Cooling Subsystem,” and TSTF-580, Revision 1, “Provide Exception from Entering Mode 4 With No Operable RHR Shutdown Cooling.”

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Scott P. Wall, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures:

1. Amendment No. 197 to NPF-58
2. 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. 50-440
PERRY NUCLEAR POWER PLANT, UNIT NO. 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 197
License No. NPF-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Energy Harbor Nuclear Corp., et al.,¹ dated December 14, 2020, as supplemented by letter dated September 2, 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 as 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.

¹ 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 Facility Operating License No. NPF-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 197, are hereby incorporated into 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 its issuance and shall be implemented within 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Nancy L. Salgado, Chief
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-58 and
Technical Specifications

Date of Issuance: January 10, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 197

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Facility Operating License No. NPF-58

Replace the following page of Facility Operating License No. NPF-58 with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change

REMOVE

INSERT

-4-

-4-

Technical Specifications

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.

REMOVE

INSERT

3.4-21

3.4-21

3.4-22

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3.4-25

3.4-25

- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I 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 reactor core power levels not in excess of 3758 megawatts thermal (100% power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 197, are hereby incorporated into the license. Energy Harbor Nuclear Corp. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

- a. Energy Harbor Nuclear Generation LLC shall comply with the antitrust conditions delineated in Appendix C to this license; Appendix C is hereby incorporated into this license.

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 the RHR cut in permissive pressure.

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

(continued)

ACTIONS (continued)

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>

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown

LCO 3.4.10 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 the performance of Surveillances.
 3. Both RHR shutdown cooling subsystems and recirculation pumps may be removed from operation during inservice leak and hydrostatic testing.
-

APPLICABILITY: MODE 4 when heat losses to the ambient are not sufficient to maintain average reactor coolant temperature $\leq 200^{\circ}\text{F}$.

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

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
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
C. No RHR shutdown cooling subsystem in operation. <u>AND</u> No recirculation pump in operation.	C.1 Verify reactor coolant circulation by an alternate method. <u>AND</u> C.2 Monitor reactor coolant temperature and pressure.	1 hour from discovery of no reactor coolant circulation <u>AND</u> Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.10.1 Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	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. 197 TO

FACILITY OPERATING LICENSE NO. NPF-58

ENERGY HARBOR NUCLEAR CORP.

ENERGY HARBOR NUCLEAR GENERATION LLC

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated December 14, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20350B499), as supplemented by letter dated September 2, 2021 (ADAMS Accession No. ML21245A215), Energy Harbor Nuclear Corp. (EHNC or the licensee) submitted a license amendment request (LAR) for the Perry Nuclear Power Plant (PNPP). The amendment would revise technical specification (TS) actions for inoperable residual heat removal (RHR) shutdown cooling subsystems in the RHR shutdown cooling system limiting conditions for operation (LCOs).

The proposed changes are based on Technical Specifications Task Force Traveler (TSTF)-566, Revision 0, "Revise Actions for Inoperable RHR Shutdown Cooling Subsystem" (ADAMS Accession No. ML18019B187), and TSTF-580, Revision 1, "Provide Exception from Entering Mode 4 With No Operable RHR Shutdown Cooling" (ADAMS Accession No. ML21025A232). The U.S. Nuclear Regulatory Commission (NRC or the Commission) issued a final safety evaluation (SE) approving TSTF-566, Revision 0, on February 21, 2019 (ADAMS Accession No. ML19028A287), and TSTF-580, Revision 1, on July 21, 2021 (ADAMS Accession No. ML21188A225).

The licensee has proposed certain variations from the TS changes described in TSTF-566 and TSTF-580. The variations are described in Section 2.3 of this SE and evaluated in Section 3.3.

The supplement dated September 2, 2021, provided additional information that clarified the application and requested to use a more recently issued revision of TSTF-580, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on February 23, 2021 (86 FR 11009).

2.0 REGULATORY EVALUATION

2.1 Description of RHR Shutdown Cooling System

Irradiated fuel in the shutdown reactor core generates heat during the decay of fission products and increases the temperature of the reactor coolant. This decay heat must be removed to reduce the temperature of the reactor coolant to less than or equal to 200 degrees Fahrenheit (°F). This decay heat is removed by the RHR shutdown cooling system in preparation for performing refueling or maintenance operations, or for keeping the reactor in the hot shutdown condition or cold shutdown condition.

The PNPP design consists of two redundant, manually controlled shutdown cooling subsystems. The shutdown cooling subsystems of the RHR system provide decay heat removal. Each of the two shutdown cooling subsystems of the RHR system can provide the required decay heat removal. Each RHR shutdown cooling subsystem consists of one motor-driven pump, a heat exchanger, and associated piping and valves. The RHR heat exchangers transfer heat to the emergency service water (EWS) system. Some piping and heat exchangers that are passive components may be common to both subsystems.

TS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," is applicable in Mode 3 when reactor steam dome pressure is less than the RHR shutdown cooling isolation pressure. TS 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown," is applicable in Mode 4. The LCO for both requires two operable RHR shutdown cooling subsystems and, if no recirculation pump is in operation, then at least one RHR shutdown cooling subsystem in operation.

2.2 Proposed Changes to the Technical Specifications

The licensee proposed to revise TS actions for inoperable RHR shutdown cooling subsystems in the RHR shutdown cooling system LCOs, consistent with TSTF-566, Revision 0, and TSTF-580, Revision 1. The proposed changes would revise TS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," and TS 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown," for PNPP. The proposed changes are described below.

2.2.1 Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown

Required actions for one or two RHR shutdown cooling subsystems inoperable (Condition A) of PNPP TS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," require the operators to initiate action to restore RHR shutdown cooling subsystem(s) to operable status (Required Action A.1) immediately, verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem (Required Action A.2) within 1 hour, and be in Mode 4 (Required Action A.3) within 24 hours.

In accordance with NRC staff-approved TSTF-566 and TSTF-580, the licensee proposed changes that would revise TS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," for PNPP, are as follows:

- Condition A is changed to be limited to a single inoperable subsystem by revising it to state: "One RHR shutdown cooling subsystem inoperable"

- The Required Action A.1 is moved to new Condition B (as Required Action B.1) and Required Action A.3 is deleted. The LAR also proposed to add a recurring completion time (CT) to current Required Action A.2 of "Once per 24 hours thereafter." The proposed changes also renumber current Required Action A.2 as A.1 since Required Actions A.1 and A.3 are removed from Condition A.
- A new Condition B is added to address the potential situation where "The Required Action and associated Completion Time of Condition A are not met." New Condition B's Required Action B.1 is moved from current Required Action A.1 and requires operators to initiate action to restore RHR shutdown cooling subsystem to operable status immediately. Because Condition A is proposed to be revised to address a single inoperable RHR shutdown cooling subsystem, Required Action B.1 also only addresses a single RHR shutdown cooling subsystem.
- A new Condition C is added which addresses two RHR shutdown cooling subsystems inoperable with a Required Action C.1 to verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem. The new Condition C Required Action has a CT of 1 hour and once per 24 hours thereafter.
- A new Condition D is added to address situations where new Required Action C.1 and associated CT are not met. New Required Action D.1 requires action be initiated to restore one RHR shutdown cooling subsystem to operable status immediately. Required Action D.1 is modified by a note that states that 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.
- Existing Condition B and associated Required Actions are renumbered as a result of new Conditions B, C and D.

2.2.2 Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown

Required actions for one or two RHR shutdown cooling subsystems inoperable (Condition A) of TS 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown," require the operators to verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem (Required Action A.1) within 1 hour and once per 24 hours thereafter.

The licensee proposed a new Condition B for when the required action and associated CT of Condition A are not met which has a required action (new Required Action B.1) for operators to initiate action to restore RHR shutdown cooling subsystem(s) to operable status immediately.

Because new Condition B was added, current Condition B and its required actions were renamed "C," "C.1," and "C.2," respectively.

2.3 Variations from TSTF-566 and TSF-580

The PNPP TSs utilize different numbering than the Standard Technical Specifications (STS) on which TSTF-566 and TSTF-580 were based. Specifically, STS 3.4.8, “Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown” is TS 3.4.9 in the PNPP TS and STS 3.4.9, “Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown” is TS 3.4.10 in the PNPP TS. The LAR also removes an erroneous comma between Mode 4 and the qualifier of the TS 3.4.10 Applicability statement. Removal of the comma correctly depicts the singular Applicability statement. These differences are editorial and do not affect the applicability of TSTF-566 and TSTF-580 to the proposed LAR.

2.4 Applicable Regulatory Requirements and Guidance

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires each applicant for a license authorizing operation of a utilization facility to include in the application proposed TSs.

The regulation at 10 CFR 50.36(a)(1) states, in part: “A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.”

The regulation at 10 CFR 50.36(b) requires:

Each license authorizing operation of a ...utilization facility ...will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 [“Contents of applications; technical information”]. The Commission may include such additional technical specifications as the Commission finds appropriate

The regulation at 10 CFR 50.36(c)(2) requires that TSs include LCOs. Per 10 CFR 50.36(c)(2)(i), LCOs “are the lowest functional capability or performance levels of equipment required for safe operation of the facility.” The regulation also requires that when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR 50.40(a) states, in part, that the TSs shall provide reasonable assurance that the health and safety of the public will not be endangered.

The NRC staff’s guidance for the review of TSs is in Chapter 16.0, “Technical Specifications,” of NUREG-0800, Revision 3, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition” (SRP), March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STSs for each of the LWR nuclear designs. Accordingly, the NRC staff’s review includes consideration of whether the proposed changes are consistent with the NRC, “Standard Technical Specifications, General Electric Plants, [boiling-water reactor] BWR/6,” NUREG-1434, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, April 2012 (ADAMS Accession Nos. ML12104A195 and ML12104A196, respectively), as modified by NRC-approved travelers.

3.0 TECHNICAL EVALUATION

3.1 Proposed Changes to “Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown”

The licensee proposed to modify TS 3.4.9, “Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown.” The technical evaluation of each change follows.

3.1.1 Evaluation of Changes to Condition A

The licensee proposed to add a recurring CT to current Required Action A.2 of “once per 24 hours thereafter.” Current Required Action A.2 requires verification that an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem within 1 hour. The NRC staff finds this change is acceptable because it requires continuous verification of alternate methods of decay heat removal every 24 hours and provides assurance of continued heat removal capability and is consistent with the changes found acceptable in TSTF-566.

The licensee also proposed to delete current Required Action A.3, which requires the plant to be in Mode 4 within 24 hours when one or two RHR shutdown cooling subsystems are inoperable. Current Required Action A.3 requires operators to reduce the reactor coolant system temperature to the point where Mode 4 is entered, due to the potentially reduced reliability of the alternate methods of decay heat removal. However, if there is no operable RHR shutdown cooling subsystem and the plant is in a period of high decay heat load, it may not be possible to reduce the average reactor coolant system temperature to the Mode 4 entry condition (equal to or less than 200 °F) within the CT. In addition, in a typical BWR design, the RHR shutdown cooling system has a heat rejection capability many times greater than alternate methods available. Therefore, for periods in which there is high decay heat load, the BWR design does not include any system which can satisfy Required Action A.3. The NRC staff finds the deletion of current Required Action A.3 acceptable because, at below the RHR cut in permissive pressure, the remaining required action will ensure that fission product decay heat and other residual heat from the reactor core is transferred at a rate such that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary are not exceeded. This change is consistent with the changes found acceptable in TSTF-566.

Condition A is changed to be limited to a single inoperable subsystem by revising it to state: “One RHR shutdown cooling subsystem inoperable.” In accordance with the SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-580 are applicable because PNPP is a BWR design plant, and the NRC staff approved the TSTF-580 changes for BWR designs. This change is consistent with the changes found acceptable in TSTF-580.

Current Required Action A.2 is renumbered as A.1, since Required Actions A.1 and A.3 are removed from Condition A. The NRC staff finds this change is acceptable since it provides the correct number sequence. This change is consistent with the changes found acceptable in TSTF-566.

3.1.2 Evaluation of New Condition B

The licensee proposed a new Condition B for when the required action and associated CT of Condition A is not met. New Condition B’s required action, B.1, is moved from current Required Action A.1 and requires operators to initiate action to restore RHR shutdown cooling

subsystems to operable status immediately. The NRC staff finds that relocating the required action from A.1 to new Required Action B.1 is acceptable because other ways of removing decay heat are available, such as natural circulation, the spent fuel pool cooling system, the reactor water cleanup system and an inoperable, but functional, RHR shutdown cooling subsystem. This change is consistent with the changes found acceptable in TSTF-566.

New Condition B addresses situations when Required Action A.1 and associated CT are not met. Because Condition A now addresses a single inoperable RHR shutdown cooling subsystem, conforming changes were made to Required Action B.1 (formerly Required Action A.1) to address a single RHR shutdown cooling subsystem. This change is consistent with the changes found acceptable in TSTF-580.

If an alternate method cannot be established (Condition A), new Condition B requires the licensee to immediately initiate action to restore the inoperable RHR shutdown cooling subsystem to operable status. The CT "immediately" is defined in Section 1.3 of the PNPP's TSs as, "the Required Action should be pursued without delay and in a controlled manner." New Required Action B.1 continues to apply until the inoperable RHR shutdown cooling subsystems are restored to operable status, an alternate decay heat removal method is established, or the specification is exited.

The NRC staff finds this change is acceptable because new Condition B, with its Required Action B.1, provides an appropriate terminal action for when an alternate method cannot be established within the CT established in Condition A. In addition, new Required Action B.1 will restore redundant decay heat removal paths and the immediate CT reflects the importance of maintaining the availability of two paths for heat removal. This change is consistent with consistent with the changes found acceptable in TSTF-566.

3.1.3 Evaluation of New Condition C

A new Condition C is added which addresses two RHR shutdown cooling subsystems inoperable with a Required Action C.1 to verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem. The new Condition C Required Action has a CT of 1 hour and once per 24 hours thereafter.

In accordance with the SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-580 are applicable because PNPP is a BWR design plant, and the NRC staff approved the TSTF-580 changes for BWR designs. This change is consistent with the changes found acceptable in TSTF-580.

3.1.4 Evaluation of New Condition D

A new Condition D is added to address situations when new Required Action C.1 and associated CT are not met. New Required Action D.1 requires action be initiated to restore one RHR shutdown cooling subsystem to operable status immediately. Required Action D.1 is modified by a note that states that 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

In accordance with the SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-580 are applicable because PNPP is a BWR design plant, and the NRC staff approved the TSTF-580 changes for BWR designs. In the SE for TSTF-580, the NRC staff

concluded that TSTF-580 changes to STS 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown," are acceptable because, without an operable RHR shutdown cooling subsystem and in a period of high decay heat load, it may not be possible to reduce the reactor coolant system temperature to the Mode 4 entry condition within the CT. Under this condition, remaining in Mode 3 allows fission product decay heat and other residual heat from the reactor core to be transferred at a rate such that specified acceptable fuel design limits and the design conditions of the reactor coolant pressure boundary will not be exceeded. The CT reflects the importance of restoring a normal path for heat removal. Therefore, the NRC staff finds that proposed new Condition D, including its associated Required Action A.1 and CT, is acceptable because it continues to meet the requirements of 10 CFR 50.36(c)(2)(i), by providing remedial actions and shutting down the reactor if the remedial actions cannot be met. This change is consistent with the changes found acceptable in TSTF-580.

3.1.5 Evaluation of Changes to Existing Condition B

Current Condition B and its required actions were renamed "E," "E.1," "E.2," and "E.3," respectively, since new Conditions B, C, and D were added. The NRC staff finds this change is acceptable since it provides the correct number sequence. These changes are consistent with the changes found acceptable in TSTF-566 and TSTF-580.

3.1.6 Conclusion of Proposed Changes to "Residual Heat Removal (RHR) Shutdown Cooling System – Hot Shutdown"

The NRC staff concludes the proposed changes are acceptable since the TS continues to meet the requirements of 10 CFR 50.40(a) because it provides reasonable assurance that the health and safety of the public will not be endangered. The proposed changes also continue to meet the requirements of 10 CFR 50.36(c)(2)(i) and are consistent with changes previously found acceptable in TSTF-566 and TSTF-580.

3.2 Proposed Changes to "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown"

The licensee proposed to modify TS 3.4.10, "Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown." The technical evaluation of each change follows.

3.2.1 Evaluation of New Condition B

The licensee proposed a new Condition B for when the required action and associated CT of Condition A is not met which has a required action (new Required Action B.1) for operators to initiate action to restore RHR shutdown cooling subsystem(s) to operable status immediately.

If an alternate method cannot be established (Condition A), new Condition B requires the licensee to immediately initiate action to restore the inoperable RHR shutdown cooling subsystem(s) to operable status. The CT "immediately" is defined in Section 1.3 of the TSs as, "the Required Action should be pursued without delay and in a controlled manner." New Required Action B.1 continues to apply until the inoperable RHR shutdown cooling subsystems are restored to operable status, an alternate decay heat removal method is established, or the specification is exited.

The NRC staff finds this change is acceptable because new Condition B with its Required Action B.1 provide an appropriate terminal action for when an alternate method cannot be

established within the CT established in Condition A. In addition, new Required Action B.1 will restore redundant decay heat removal paths and the immediate CT reflects the importance of maintaining the availability of two paths for heat removal. This change is consistent with the changes found acceptable in TSTF-566.

3.2.2 Evaluation of Changes to Existing Condition B

Current Condition B and its required actions were renamed “C,” “C.1,” and “C.2,” respectively, since new Condition B was added. The NRC staff finds this change is acceptable since it provides the correct number sequence. This change is consistent with the changes found acceptable in TSTF-566.

3.2.3 Conclusion of Proposed Changes to “Residual Heat Removal (RHR) Shutdown Cooling System – Cold Shutdown”

The NRC staff concludes the proposed changes are acceptable since the TS continues to meet the requirements of 10 CFR 50.40(a) because it provides reasonable assurance that the health and safety of the public will not be endangered. The proposed changes are also consistent with the changes previously found acceptable in TSTF-566.

3.3 Additional Proposed TS Changes

3.3.1 Variations from TSTF-566 and TSTF-580

The licensee noted that PNPP TSs have different numbering than STS. The NRC staff finds that the different TS numbering changes are acceptable because they do not alter TS requirements.

3.3.2 Other Variations

The LAR removes an erroneous comma between Mode 4 and the qualifier of the TS 3.4.10 Applicability statement. Removal of the comma correctly depicts the singular Applicability statement. This is an editorial change that does not make any technical changes. Therefore, the NRC staff finds this change acceptable.

3.4 TS Change Consistency

The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the existing requirements for customary terminology and formatting. The NRC staff finds that the proposed changes are consistent with Chapter 16.0 of the SRP and are therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Ohio official was notified of the proposed issuance of the amendment on November 18, 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 published in the *Federal Register* on February 23, 2021 (86 FR 11009). 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.

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Date of issuance: January 10, 2022

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 – ISSUANCE OF AMENDMENT NO. 197 REGARDING THE ADOPTION OF TSTF-566, REVISION 0, “REVISE ACTIONS FOR INOPERABLE RHR SHUTDOWN COOLING SUBSYSTEM,” AND TSTF-580, REVISION 1, “PROVIDE EXCEPTION FROM ENTERING MODE 4 WITH NO OPERABLE RHR SHUTDOWN COOLING” (EPID L-2020-LLA-0281) DATED JANUARY 10, 2022

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