



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

June 25, 2018

Mr. David B. Hamilton
Site Vice President
FirstEnergy Nuclear Operating Company
Mail Stop A-PY-A290
P.O. Box 97, 10 Center Road
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF AMENDMENT NO. 181 CONCERNING ADOPTION OF TECHNICAL SPECIFICATION TASK FORCE TRAVELER TSTF-306-A, REVISION 2, "ADD ACTION TO LCO 3.3.6.1 TO GIVE OPTION TO ISOLATE THE PENETRATION" (CAC NO. MG0150; EPID L-2017-LLA-0286)

Dear Mr. Hamilton:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 181 to Facility Operating License No. NPF-58 for Perry Nuclear Power Plant, Unit No. 1. The amendment consists of changes to the technical specifications (TSs) in response to your application dated September 11, 2017.

The amendment revises the TS requirements in TS 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," by adding an Actions note allowing intermittent opening of isolated penetration flow paths under administrative control.

A copy of our safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "Kimberly J. Green".

Kimberly J. Green, 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. 181 to NPF-58
2. Safety Evaluation

cc w/encls: ListServ



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NUCLEAR REGULATORY COMMISSION
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FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION, LLC

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
License No. NPF-58

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by FirstEnergy Nuclear Operating Company, et al. (the licensee, FENOC), dated September 11, 2017, 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.

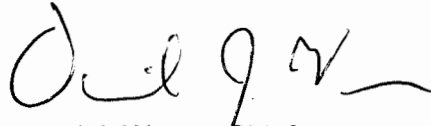
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-58 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 181, are hereby incorporated into the license. FENOC 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 60 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



David J. Wrona, 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: June 25, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 181

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Replace the following pages of the Facility Operating License and 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

License NPF-58

License NPF-58

- 4 -

- 4 -

TSs

TSs

3.3-48

3.3-48

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

FENOC 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. 181, are hereby incorporated into the license. FENOC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

a. FirstEnergy Nuclear Generation, LLC

3.3 INSTRUMENTATION

3.3.6.1 Primary Containment and Drywell Isolation Instrumentation

LCO 3.3.6.1 The primary containment and drywell isolation instrumentation for each Function in Table 3.3.6.1-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3.6.1-1.

ACTIONS

-----NOTES-----

1. Penetration flow paths, except for the drywell 24 inch and 36 inch purge supply and exhaust valve penetration flow paths and the inboard 42 inch primary containment purge supply and exhaust isolation valve flow paths, may be unisolated intermittently under administrative controls.
 2. Separate Condition entry is allowed for each channel.
-

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Place channel in trip.	12 hours for Functions 2.b, 5.b, and 5.d <u>AND</u> 24 hours for Functions other than Functions 2.b, 5.b, and 5.d
B. One or more automatic Functions with isolation capability not maintained.	B.1 Restore isolation capability.	1 hour

(continued)



UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NO. NPF-58

FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION, LLC

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By application dated September 11, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17254A495), FirstEnergy Nuclear Operating Company (FENOC or the licensee) requested changes to the technical specifications (TSs) for the Perry Nuclear Power Plant, Unit 1 (PNPP or Perry). The proposed changes would revise the requirements in TS 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," by adding an ACTIONS note to Limiting Condition of Operation (LCO) 3.3.6.1 to allow intermittent opening, under administrative control, of penetration flow paths that are isolated. The proposed changes are consistent with the intent of Technical Specifications Task Force (TSTF) Traveler TSTF-306, Revision 2, "Add Action to LCO 3.3.6.1 to Give Option to Isolate the Penetration" (ADAMS Accession No. ML003725864).

2.0 REGULATORY EVALUATION

2.1 Description of the Primary Containment and Drywell Isolation Functions

The function of the primary containment isolation valves (PCIVs), in combination with other accident mitigation systems, is to limit fission product release during and following postulated design basis accidents (DBAs) to within limits. Primary containment isolation within the time limits specified for those PCIVs designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a DBA.

The OPERABILITY requirements for PCIVs help ensure that an adequate primary containment boundary is maintained during and after an accident by minimizing potential paths to the environment. Therefore, the OPERABILITY requirements provide assurance that the primary containment function assumed in the safety analysis will be maintained.

The drywell isolation valves, in combination with other accident mitigation systems, function to ensure that steam and water releases to the drywell are channeled to the suppression pool to maintain the pressure suppression function of the drywell.

The OPERABILITY requirements for drywell isolation valves help ensure that an adequate drywell boundary is maintained during and after an accident. Therefore, the OPERABILITY requirements support minimizing drywell bypass leakage assumed in the safety analysis for a DBA.

The Perry Technical Specification Bases for TS 3.3.6.1 states, in part:

The primary containment and drywell isolation instrumentation automatically initiates closure of appropriate primary containment isolation valves (PCIVs) and the drywell isolation valves. The function of the PCIVs, in combination with other accident mitigation systems, is to limit fission product release during and following postulated DBAs. Primary containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a DBA. The isolation of drywell isolation valves, in combination with other accident mitigation systems, functions to ensure that steam and water releases to the drywell are channeled to the suppression pool to maintain the pressure suppression function of the drywell.

2.2 Licensee's Proposed Changes

The licensee has proposed to add the following ACTIONS note to LCO 3.3.6.1 to allow intermittent opening, under administrative control, of containment and drywell penetration flow paths that are isolated:

1. Penetration flow paths, except for the drywell 24 inch and 36 inch purge supply and exhaust valve penetration flow paths and the inboard 42 inch primary containment purge supply and exhaust isolation valve flow paths, may be unisolated intermittently under administrative controls.

The existing ACTIONS Note 1 will be renumbered to Note 2, and the "NOTE" heading will be revised to "NOTES."

2.3 Regulatory Requirements and Guidance

The categories of items required to be in the TSs are provided in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include LCOs, which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), 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.

Paragraph 50.36(a)(1) of 10 CFR states, in part, that 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 TSs.

Paragraph 50.36(c)(3) of 10 CFR states that TSs will contain surveillance requirements (SR) 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 U.S. Nuclear Regulatory Commission (NRC) staff's guidance for review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan" (March 2010) (ADAMS Accession No. ML100274425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STSs) for each of the light-water reactor nuclear designs. NUREG-1434, "Standard Technical Specifications, General Electric [Boiling-Water Reactor] BWR/6 Plants" (ADAMS Accession No. ML12104A196), contains the STS for the General Electric BWR/6 design.

Chapter 18, "Human Factors Engineering," of NUREG-0800 provides guidance to NRC reviewers regarding human factors issues, including manual operator actions. Attachment A to Chapter 18, "Guidance for Evaluating Credited Manual Operator Actions," provides review guidance associated with evaluating the feasibility and reliability of operator actions.

Technical Specification Task Force Traveler TSTF-306, Revision 2, was submitted to the NRC staff for review on June 20, 2000. Approval of TSTF-306, Revision 2, was documented in the meeting summary for the joint NRC/TSTF meeting on July 13, 2000 (ADAMS Accession No. ML003734705). The staff notes that the "-A" designator as referenced in the licensee's application is not recognized or used by the NRC staff.

3.0 TECHNICAL EVALUATION

3.1 Evaluation of TS Change

The design of the primary containment and drywell penetration isolation instrumentation supports primary containment integrity by automatically initiating closure of appropriate PCIVs and drywell isolation valves.

The existing TS LCO 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," for Perry requires that each PCIV, except containment vacuum breakers, be operable in Modes 1 (Power Operation), 2 (Startup), and 3 (Hot Standby) and when associated Instrumentation is required to be operable per LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation." The ACTIONS table requires that penetration flow paths with inoperable isolation valve(s) (for reasons other than leakage not within the limit) be isolated within a specified period of time. The ACTIONS table is preceded by a note that states the penetration flow paths except for the inboard 42 inch purge valve penetration flow paths may be unisolated intermittently under administrative controls.

The existing TS LCO 3.6.5.3, "Drywell Isolation Valves," for Perry requires that each drywell isolation valve, except for Drywell Vacuum Relief System Valves, be operable in Modes 1, 2, and 3. The ACTIONS table requires that penetration flow paths with inoperable isolation valve(s) be isolated within a specified period of time. The ACTIONS table is preceded by a note that states the penetration flow paths, except for the 24 inch and 36 inch purge supply and exhaust valve penetration flow path, may be unisolated intermittently under administrative controls.

In general, LCO 3.3.6.1 instrument functions are required to be operable in Modes 1, 2, and 3, consistent with the applicability requirements of LCO 3.6.1.3 and LCO 3.6.5.3. The ACTIONS note that is proposed to be added to LCO 3.3.6.1 is consistent with the allowance for opening valves isolated to comply with TSs 3.6.1.3 and 3.6.5.3 when valve operability requirements are not met.

The licensee proposed two variations to TSTF-306, Revision 2.

1. TSTF-306, Revision 2, applies to primary containment isolation instrumentation. The corresponding LCO for Perry includes both the primary containment and drywell isolation instrumentation. The licensee is proposing that the ACTIONS Note apply to both the primary containment and drywell isolation instrumentation functions.
2. TSTF-306, Revision 2, applies to all penetration flow paths. The language in the ACTIONS note is proposed to be revised to exclude the drywell 24 inch and 36 inch purge supply and exhaust valve penetration flowpaths and the inboard 42 inch primary containment purge supply and exhaust isolation valve flow paths to be unisolated intermittently under administration controls.

These variations are being proposed to reflect the current TS requirements for Perry. The current LCO requirements for primary containment and drywell isolation instrumentation are combined into one LCO. The valves that the licensee is proposing to exclude from the ACTIONS note are currently excluded from the corresponding ACTIONS notes in the existing LCOs 3.6.1.3 and 3.6.5.3 for Perry. The NRC staff finds that these variations from TSTF-306, Revision 2, are consistent with Perry's current TS requirements and are acceptable. The NRC staff concludes that the licensee's proposal is consistent with the intent of TSTF-306, Revision 2. Based on the above, the NRC staff concludes that the proposed changes are acceptable.

The proposed note is consistent with the conventional terminology and presentation as contained in NUREG-1434, Revision 4 and is acceptable to the NRC staff.

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." Accordingly, along with the proposed TS changes, the licensee also submitted TS Bases changes that corresponded to the proposed TS changes to provide the reasons for the TSs. The TS bases changes are consistent with the bases changes in TSTF-306, Revision 2.

3.2 Evaluation of Human Factors

Technical Specification 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," currently requires that the primary containment and drywell isolation instrumentation for various listed functions be operable as stated in TS Table 3.3.6.1-1. The instrumentation ensures that various flow paths into and out of the primary containment and drywell are isolated when required during a design basis accident. For some of the primary containment and drywell isolation instrumentation, inoperability may eventually require that the flow path be isolated. Long-term operation of the plant in this condition is acceptable because isolating the affected flow path accomplishes the safety function of the inoperable channel.

The licensee is proposing the addition of an ACTIONS note (Note 1) that will allow flow paths that have been isolated, except for the drywell 24-inch and 36-inch purge supply and exhaust valve penetration flow paths and the inboard 42-inch primary containment purge supply and exhaust isolation valve flow paths, to be unisolated intermittently under administrative controls. These controls consist of stationing a dedicated operator at the controls of the valve, who is in continuous communication with the control room.

The licensee's submittal confirms that the administrative controls in place while a penetration valve is open will include the following:

1. The operator will be stationed at the controls of the valve;
2. The operator is dedicated for the task of manually closing the valve;
3. The operator is in continuous communication with the control room.

The licensee's submittal also notes that implementation of the manual operator action to isolate the specified penetration isolation valves when opened under these administrative controls does not require any changes to safety analysis assumptions or results.

Per these administrative controls, the operator will not be delayed from implementing the action by having to travel to the valve from another location in the plant. The operator's attention will not be diverted to other tasks and continuous communication with the control room will facilitate rapid initiation of the action to isolate the valve when required. In addition, the proposed action to intermittently unisolate penetration flow paths is not a new operator action for PNPP. This manual operator action for the same scope of penetration valves is currently allowed under TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," and TS 3.6.5.3, "Drywell Isolation Valves." The NRC staff finds that the specified manual operator action to intermittently unisolate penetration flow paths, except for the drywell 24-inch and 36-inch purge supply and exhaust valve and the inboard 42-inch primary containment purge supply and exhaust isolation valve flow paths, under the specified administrative controls are feasible and can be accomplished reliably. Therefore, the NRC staff concludes that this change is acceptable.

3.3 Technical Conclusion

The regulations in 10 CFR 50.36(c)(2)(i) require that the TSs include LCOs, which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), 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 TS, as modified by the changes described in this safety evaluation, will continue to specify the appropriate LCO requirements and remedial actions to be taken if the LCO is not met; and thus satisfies the requirements of 10 CFR 50.36(c)(2)(i).

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified on May 23, 2018, of the proposed issuance of the amendment. 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. 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

(82 FR 51652). 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 Contributors: J. Hughey, NRR
M. Chernoff, NRR

Date of issuance: June 25, 2018

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF AMENDMENT NO. 181 CONCERNING ADOPTION OF TECHNICAL SPECIFICATION TASK FORCE TRAVELER TSTF-306-A, REVISION 2, "ADD ACTION TO LCO 3.3.6.1 TO GIVE OPTION TO ISOLATE THE PENETRATION" (CAC NO. MG0150; EPID L-2017-LLA-0286) DATED JUNE 25, 2018

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