

July 30, 2007

Mr. Barry S. Allen  
Site Vice President  
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SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF  
AMENDMENT TO CLARIFY TECHNICAL SPECIFICATION REQUIREMENTS  
RELATED TO ANNULUS EXHAUST GAS TREATMENT (AEGT) SYSTEM  
(TAC NO. MD1187)

Dear Mr. Allen:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No.147 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit No. 1. This amendment revises the Technical Specifications in response to your application dated February 10, 2006, as supplemented by letter dated March 8, 2007.

This amendment would clarify technical specifications (TSs) for the Perry Nuclear Power Plant (PNPP) by revising the TS action requirements that must be followed when one or more annulus exhaust gas treatment (AEGT) system initiation channels are inoperable. The clarifying changes will make the PNPP TSs consistent with NRC staff precedents for containment filtering safety systems that operate continuously in the protection mode of operation.

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

Sincerely,

/RA/

Thomas J. Wengert, Project Manager  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures: 1. Amendment No. 147 to NPF-58  
2. Safety Evaluation

cc w/encls: See next page

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2. Safety Evaluation

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FIRSTENERGY NUCLEAR OPERATING COMPANY

FIRSTENERGY NUCLEAR GENERATION CORP.

OHIO EDISON COMPANY

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 147  
License No. NPF-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for license filed by FirstEnergy Nuclear Operating Company, et al., (the licensee) dated February 10, 2006, as supplemented by letter dated March 8, 2007, 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. 147 are hereby incorporated into this 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 120 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA by Robert F. Kuntz for/*

Russell Gibbs, Chief  
Plant Licensing Branch III-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications and Facility Operating License

Date of Issuance: July 30, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 147

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

License NPF-58  
Page 4

TSs  
3.3-33  
3.3-34  
3.3-35

Insert

License NPF-58  
Page 4

TSs  
3.3-33  
3.3-34  
3.3-35

renewal. Such sale and leaseback transactions are subject to the representations and conditions set forth in the above mentioned application of January 23, 1987, as supplemented on March 3, 1987, as well as the letter of the Director of the Office of Nuclear Reactor Regulation dated March 16, 1987, consenting to such transactions. Specifically, a lessor and anyone else who may acquire an interest under these transactions are prohibited from exercising directly or indirectly any control over the licenses of PNPP Unit 1. For purposes of this condition the limitations of 10 CFR 50.81, as now in effect and as may be subsequently amended, are fully applicable to the lessor and any successor in interest to that lessor as long as the license for PNPP Unit 1 remains in effect; these financial transactions shall have no effect on the license for the Perry Nuclear facility throughout the term of the license.

- (b) Further, the licensees are also required to notify the NRC in writing prior to any change in: (i) the terms or conditions of any lease agreements executed as part of these transactions; (ii) the PNPP Operating Agreement; (iii) the existing property insurance coverage for PNPP Unit 1; and (iv) any action by a lessor or others that may have an adverse effect on the safe operation of the facility.
- 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 and 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. 147, 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 Corp. and Ohio Edison Company



SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 147 TO FACILITY OPERATING LICENSE NO. NPF-58  
FIRSTENERGY NUCLEAR OPERATING COMPANY  
FIRSTENERGY NUCLEAR GENERATION CORP.  
OHIO EDISON COMPANY  
PERRY NUCLEAR POWER PLANT, UNIT NO. 1  
DOCKET NO. 50-440

## 1.0 INTRODUCTION

By letter to the U.S. Nuclear Regulatory Commission (NRC, the Commission) dated February 10, 2006, as supplemented by letter dated March 8, 2007, FirstEnergy Nuclear Operating Company (FENOC), et al. (the licensee) requested changes to Technical Specification (TS) 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," of Appendix A to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant (PNPP), Unit No. 1. The proposed changes would revise the TSs for PNPP by revising the TS action requirements that must be followed when one or more annulus exhaust gas treatment (AEGT) system initiation channels are inoperable. The clarifying changes will make the PNPP TSs consistent with NRC staff precedents for containment filtering safety systems that operate continuously in the protection mode of operation. The alternate TS actions establish appropriate measures for temporary operation with inoperable AEGT instrument channels.

The March 8, 2007, supplement, contained clarifying information and did not change the NRC staff's initial proposed finding of no significant hazards consideration.

## 2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The TSs ensure the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements related to the content of the TS are contained in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36. That regulation requires that the TSs include items in the following specific categories: (1) Safety limits, limiting safety systems settings, and limiting control settings (50.36(c)(1)); (2) Limiting conditions for operation (50.36(c)(2)); (3) Surveillance requirements (50.36(c)(3)); (4) Design features (50.34(c)(4)); and (5) Administrative controls (50.36(c)(5)). However, the rule does not specify the particular requirements to be included in a plant's TSs. Regulations define limiting conditions for operation as the lowest functional capability or performance levels of equipment required for safe operation of the facility. Regulations require that when a limiting condition for operation 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.

In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs are derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred format of TSs over time. This amendment deals with the second class of changes. In determining the acceptability of revising TS 3.5.5.1 the NRC staff used the accumulation of generically approved guidance in NUREG-1434, "Standard Technical Specifications [STS] or Boiling Water Reactors (BWR/6) Plants".

Licensees may revise the TSs to adopt current improved STS format and content provided that plant-specific review supports a finding of continued adequate safety because: (1) the change is editorial, administrative or provides clarification (i.e., no requirements are materially altered) and the changes are compatible with the STS, do not result in any substantive change in operating requirements, and are consistent with the Commission's regulations, (2) the change is more restrictive than the licensee's current requirement which are additional restrictions on plant operation that enhance safety and are acceptable, or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The detailed application of this general framework, and additional specialized guidance, are discussed in Section 3.0 in the context of specific proposed changes.

### 3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the justification for the requested PNPP TSs in the FENOC application dated February 10, 2006. The evaluation given below for the license amendment request (LAR) to make less restrictive changes to PNPP TS requirements will support a conclusion 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) 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.

#### 3.1 Annulus Exhaust Gas Treatment TS Requirements

The LAR discussed how a departure from STS requirements for ECCS instrumentation that was made during development of AEGT improved TSs has necessitated the proposed revision to PNPP TSs for AEGT initiation instrumentation.

The AEGT Division 1 and 2 subsystems are provided to reduce by filtration, radioactive material that may be released due to a loss-of-coolant accident (LOCA). The AEGT system performs a safety function that is analogous to the safety function of the standby gas treatment system (SGTS) described in STS (TS 3.3.6.2, "Secondary Containment Isolation Instrumentation") except the AEGT system operational requirements differ from the operational requirements for the typical SGTS design. For the typical BWR design both SGTS subsystems are in a standby mode of operation when the plant is operating. STS 3.3.6.2 ensures the SGTS instrumentation is capable of initiating reconfiguration of secondary containment ventilation dampers and starting the SGTS upon receipt of a valid LOCA signal and for a high radiation signal. In contrast, to ensure PNPP secondary containment is operable, one of two AEGT subsystems are required to be operating at all times to meet the secondary containment requirement to be at a one quarter inch negative differential pressure with respect to atmospheric pressure.

The licensee stated that during development of PNPP improved TS for the AEGT System that STS 3.3.6.2 was not adopted because no automatic valves are required to isolate for the AEGT

to perform the filtration safety function. The licensee made further changes to the STS format by adopting STS 3.3.6.2 required actions for inoperable SGTS instrument Functions but relocated these actions to Required Action B for PNPP ECCS instrumentation (TS 3.3.5.1). TS 3.3.5.1, Required Action B was chosen since the PNPP Functions 1.a, 2.a, 1.b, and 2.b (Low Water Level 1 and Drywell Pressure-High in Divisions 1 and 2, respectively) associated with Required Action B are also the instrument Functions that initiate the AEGT subsystems. Specifically, Required Actions B.1.2.1 and B.1.2.2 were added to require the associated AEGT subsystems either be placed in operation or declared inoperable when one or more initiation Function instrument channels are discovered to be inoperable.

However, the action requirements moved into PNPP TS 3.3.5.1 from STS 3.3.6.2 were actions specified for conditions that represented a loss of initiation capability for an instrument Function and, furthermore, the changes did not consider that TS 3.3.5.1 Required Action B.1 already contained requirements to check for a loss of initiation capability. The loss of initiation capability check in Required Action B.1 requires verification that sufficient channels are either operable or in trip to ensure AEGT system initiation capability has not been lost in both divisions of trip systems for either the level or pressure initiation Functions. The licensee stated that the consequence of relocating STS 3.3.6.2 requirements requires operators to take actions when only one instrument channel is inoperable even if the Function is still capable of initiating AEGT, and that such an action should only be required if the AEGT initiation Function has been lost.

### 3.2 Proposed TS Changes

In its application, the licensee proposed the following changes to action requirements associated with TS Table 3.3.5.1-1, ECCS Instrumentation, Functions 1.a, 2.a, 1.b, and 2.b (Low Water Level 1 and Drywell Pressure-High in Divisions 1 and 2, respectively).

- Delete Required Action B.1.2.1 and the Completion Time, "Place the associated annulus gas exhaust gas treatment (AEGT) subsystem in operation within 1 hour."
- Delete Required Action B.1.2.2 and the Completion Time, "Declare associated AEGT subsystem inoperable within 1 hour."

In accordance with the approved PNPP design and as reflected in TS Table 3.3.5.1-1, Footnote (b), the features associated with the channels for Functions 1.a, 1.b, 2.a and 2.b include the diesel generators and the AEGT subsystems in addition to the low pressure ECCS injection subsystems. The current TS required actions for Condition B that apply to each associated feature for one or more inoperable channels of either or both Functions is to verify that a loss of initiation capability of any required feature has not occurred in both Divisions within 1 hour (B.1.1), and either place the associated AEGT subsystem in operation (B.1.2.1), or declare the associated AEGT subsystem inoperable within 1 hour (B.1.2.2) and place the inoperable channel(s) in trip within 24 hours (B.3).

### Evaluation of Proposed Changes

The licensee stated that deleting B.1.2.1 and B.1.2.2 would more closely align the PNPP TS with STS 3.3.5.1. The NRC staff notes the presentation chosen by the licensee does not align PNPP with STS as closely as it could if the licensee would propose to add an LCO for AEGT instrumentation. However, having a TS presentation that closely aligns to STS is only appropriate when the approved STS precedence applies to the plant-specific design. As noted in Section 3.1 above, the B.1.2.1 and B.1.2.2 requirements represent a departure from STS that

was purposefully made during the PNPP adoption of STS to accommodate functional differences between the STS SGTS and the PNPP AEGT. The NRC staff evaluation did not consider elimination of format differences from the STS as a reason for accepting the proposed change.

The licensee stated that a portion of the current wording of Required Action B.1 is unique to PNPP, and that portion (1) includes actions that must be taken even when only a single channel has become inoperable, and a "loss of initiation capability" has not occurred in both divisions, (2) conflicts with the Bases for the Required Action, and (3) could result in an operator misinterpretation. The NRC staff agrees with items (1) and (2). However, the NRC staff reviewed the potential for operator misinterpretation of current PNPP TS requirements and found that while the TS actions may be overly conservative and in some ways duplicative of the intention to verify that loss of safety function has not occurred, there are no obvious misinterpretations that could arise from applying the PNPP Required Action B.1.2.1 and B.1.2.2 requirements. The NRC staff does not find the LAR statement to accurately portray potential safety issue in the operation of the PNPP facility.

For the proposed TS changes, TS 3.3.5.1 Actions B.1.2.1 and B.1.2.2 requirements would no longer apply. These required actions are specific to the AEGT subsystems. The licensee stated that with the changes, PNPP TS 3.3.5.1, Required Action B.1 will be consistent with the STS precedent for declaring supporting features inoperable due to inoperable actuation channels. The licensee stated that, with the proposed change, should a loss of initiation capability in both divisions occur for any required instrument Function, the AEGT LCO will specify the required action, as originally intended for ECCS instrumentation. The NRC staff finds that following the deletions, the TSs that remain would establish appropriate measures for temporary operation with inoperable AEGT initiation instrument channels. The NRC staff notes that the low pressure ECCS subsystems, diesel generators, and AEGT subsystems are features that share the same initiation instrument Functions and initiation logic. The proposed change would make the TS action requirements the same for features that share the same initiation instrumentation. The NRC staff finds the proposed TS changes acceptable.

In addition, the licensee proposed to reformat TS pages 3.3-34 and 3.3-35 for proper pagination. This change is purely to correct the format/pagination of the TS document and is, therefore, acceptable.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Ohio State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 5.0 ENVIRONMENTAL CONSIDERATION

This 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 effluent 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (71 FR 29678). Accordingly, this 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 this 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) such activities will be conducted in compliance with the Commission's regulations; and, (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Schulten, NRR

Date: July 30, 2007