

June 22, 2007

Mr. Barry S. Allen  
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SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 - ISSUANCE OF  
AMENDMENT RE: SCRAM DISCHARGE VOLUME VENT AND DRAIN  
VALVES (TAC NO. MD3898)

Dear Mr. Allen:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 145 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit No. 1. This amendment revises the Technical Specifications (TSs) in response to your application dated December 29, 2006.

This amendment modifies the TS requirements for scram discharge volume vent and drain valves.

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. 145 to NPF-58  
2. Safety Evaluation

cc w/encls: See next page

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Package Accession Number: ML071450238  
Amendment Accession Number: ML071450234  
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Perry Nuclear Power Plant, Unit No. 1

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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. 145  
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 December 29, 2006, 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. 145 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 90 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

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: June 22, 2007

ATTACHMENT TO LICENSE AMENDMENT NO. 145

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

TS  
3.1-24

Insert

License NPF-58  
Page 4

TS  
3.1-24

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. 145, 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. 145 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 December 29, 2006, FirstEnergy Nuclear Operating Company, et al. (the licensee) requested changes to the technical specifications (TSs) for the Perry Nuclear Power Plant (PNPP), Unit No. 1. The proposed changes would revise the TS requirements for scram discharge volume vent and drain valves. Specifically the proposed changes would revise the required action within TS 3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves" for the condition of having one or more SDV vent or drain lines with one valve inoperable. These changes are based on Technical Specifications Task Force (TSTF) Change Traveler No. 404 (TSTF-404), "Scram Discharge Volume Vent and Drain Valves" Revision 0, that has been approved generically for Boiling Water Reactor 6 (BWR/6) Standard Technical Specifications (STS), contained in NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6 Specifications," Revision 2. A notice announcing the availability of this proposed TS change using the consolidated line item improvement process (CLIP) was published in the Federal Register on April 15, 2003 (68 FR 18294).

## 2.0 REGULATORY EVALUATION

NRC regulations and review standards such as Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulation* (CFR) Part 50, include specific requirements for reactor protection and reactivity control systems. The reactor protection systems for BWRs use a hydraulic system to insert control rods into the reactor core. During an actuation of the reactor protection system (a scram), water is exhausted from the control rod drive mechanisms to the SDVs. Proper maintenance and operation of the SDVs in terms of instrumentation and limiting water volumes are essential for assuring the reliability of the reactor protection system (see NRC Bulletin 80-17, "Failure of Control Rods to Insert During A Scram at a BWR," related Orders to specific facilities, and information provided in plant final safety analysis reports and TS Bases). Maintaining the SDVs to ensure that accumulated water does not hamper or slow the insertion of control rods requires vent and drain valves. The vent and drain valves isolate during a scram to limit the amount of coolant discharged so that adequate core cooling is maintained and offsite doses remain within regulatory limits.

Specific license requirements for SDV vent and drain valves are defined in TS 3.1.8. The existing Limiting Condition for Operation (LCO) 3.1.8, requires that each SDV vent and drain valve be operable. The operability of all SDV vent and drain valves ensures that the SDV vent and drain valves will close during a scram to contain reactor water discharged to the SDV piping. Since the vent and drain lines are provided with two valves in series, the single failure of one valve in the open position will not impair the isolation function of the system. Additionally, the valves are required to open on scram reset and during plant operation to control the amount of water accumulating in the SDV.

If one or more SDV vent and drain lines have a single valve that is inoperable, the existing required action is to restore the valve(s) to operable status within 7 days. If an inoperable valve is not restored to operable status, a plant shutdown to MODE 3 is required within 12 hours. If one or more SDV vent or drain lines have both valves inoperable, the associated line must be isolated within 8 hours. In this condition, the plant is allowed to operate indefinitely. A note associated with the required action clarifies that the valves may be opened under administrative controls to allow draining of the SDV. The existing SDV vent and drain valve required actions are inconsistent in that, although the operational and safety concerns are similar for having one or both valves in a line being inoperable, the actions for a single inoperable valve do not allow for the isolation of the line and administrative controls to support the draining of the SDV.

The proposed change would revise the required actions to be more consistent with the safety significance of one inoperable valve in a SDV line versus two inoperable valves in an SDV line.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Proposed TS Change

The proposed changes to TS 3.1.8 are:

1. Required Action A.1 is revised from restoring the single inoperable SDV vent and drain valve in one or more SDV vent and drain lines to operable status to isolating the associated line.
2. The Note to Required Action B.1, which allows an isolated line to be unisolated under administrative controls for the purpose of draining and venting the SDV, is moved to a note that applies to both Conditions A (single inoperable valve) and B (both valves inoperable).

#### 3.2 NRC Staff Evaluation

With one SDV vent or drain valve inoperable in one or more lines, the isolation function would be maintained since the redundant valve in the affected line would perform its safety function of isolating the SDV. The current ACTION statement allows 7 days to repair the inoperable valve; the proposed change would allow for the isolation of the affected line and continue operation. If the affected line is not isolated within the 7-day time period (or the inoperable valve is not restored), the licensee would then be required to proceed to MODE 3 in the next 12 hours. Maintaining the 7-day Completion Time is acceptable because of the low probability of the concurrent events of a scram within the 7 days of the Completion Time and a failure of the redundant valve(s). Alternately, if the inoperable valve was initially closed, there would be ample time and a warning available to drain the SDV before an automatic scram would occur due to SDV high level.

The allowance to administratively open a line that is isolated to comply with the actions (to permit draining and venting the SDV) is allowed by existing Required Action B.1. This allowance is being moved to apply to all ACTIONS based on the change proposed to Action A. This would allow any accumulated water in the line to be drained, to preclude a reactor scram on SDV high level. A reactor scram is initiated if the SDV water level in the instrument volume exceeds a specified setpoint. The setpoint is chosen so that all control rods are inserted before the SDV has insufficient volume to accept a full scram. Regarding the isolation of the SDV, the remaining operable SDV vent and drain valve(s) would close automatically on a scram signal to isolate the lines. Or, if both valves in a line were inoperable (and opened under this provision), the reactor coolant release could be terminated by resetting the scram from the control room, or by manually closing the valves. Resetting the scram automatically closes the scram outlet valves, isolating the control rod drive discharge path to the SDV.

### 3.3 Technical Evaluation Conclusion

Based on the low probability of an event occurring during the defined Completion Time associated with this condition, the subsequent isolation of the affected lines, and the ability to open and drain the lines before an automatic scram due to SDV high water level, the proposed change maintains the necessary safety features and is therefore acceptable to the NRC staff. The change to TS 3.1.8 requires that the licensee revise the discussion in the associated Bases section. Although the licensee's application included possible wording for the revised Bases discussion for TS 3.1.8, the licensee will formally address the change to the Bases in accordance with the Bases Control Program or its administrative procedure for revising Bases. The NRC staff does not believe that the Bases change will require prior NRC approval when evaluated against the criteria of 10 CFR 50.59, "Changes, tests, and experiments," and, therefore, agrees that the revision of the Bases to TS 3.1.8 should be addressed separately from this amendment and should be included in a future update of the TS Bases in accordance with the bases Control Program and the licensee's administrative controls.

### 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 (72 FR 11388; March 13, 2007). 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 NRC staff 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Wertz

Date: June 22, 2007