

March 12, 2001

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Mr. John K. Wood  
Vice President - Nuclear, Perry  
FirstEnergy Nuclear Operating Company  
P.O. Box 97, A200  
Perry, OH 44081

**SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT  
RE: MINIMUM CRITICAL POWER RATIO SAFETY LIMIT (TAC NO. MB0733)**

Dear Mr. Wood:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 119 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. This amendment revises the Technical Specifications in response to your application dated December 11, 2000 (PY-CEI/NRR-2529L), as supplemented by letter dated February 15, 2001 (PY-CEI/NRR-2547L).

This amendment modifies the existing Minimum Critical Power Ratio (MCPR) Safety Limit contained in Technical Specification 2.1.1.2 by increasing the limit for two recirculation loop operation from 1.09 to 1.10.

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/

Douglas V. Pickett, Sr. Project Manager, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-440

- Enclosures: 1. Amendment No. 119 to License No. NPF-58
- 2. Safety Evaluation

**DOCUMENT NAME: G:\PDIII-2\PERRY\MB0733amd.wpd**

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OFFICE	PM:LPD3	LA:LPD3	SC:SRXB	OGC <sup>* NLD with comment</sup>	SC:LPD3
NAME	D Pickett	T Harris J&H	R Caruso*	R Weisman	Amendment
DATE	3/ 2 /01	3/ 2 /01	2/ 21 /01	3/ 07 /01	3/ 12 /01

**OFFICIAL RECORD COPY**

\*See RCaruso to DPickett memorandum dated 2/21/01

\* Do not issue until after February 9, 2001.

NRR-058



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 12, 2001

Mr. John K. Wood  
Vice President - Nuclear, Perry  
FirstEnergy Nuclear Operating Company  
P.O. Box 97, A200  
Perry, OH 44081

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Sincerely,

A handwritten signature in black ink that reads "Douglas V. Pickett".

Douglas V. Pickett, Sr. Project Manager, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures: 1. Amendment No. 119 to  
License No. NPF-58  
2. Safety Evaluation

cc w/encls: See next page

J. Wood  
FirstEnergy Nuclear Operating Company

cc:

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U.S. Nuclear Regulatory Commission  
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Mayor, Village of North Perry  
North Perry Village Hall  
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North Perry Village, OH 44081

Donna Owens, Director  
Ohio Department of Commerce  
Division of Industrial Compliance  
Bureau of Operations & Maintenance  
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Perry Nuclear Power Plant, Units 1 and 2

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Mayor, Village of Perry  
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Chairman  
Perry Township Board of Trustees  
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Perry, OH 44081

State of Ohio  
Public Utilities Commission  
East Broad Street  
Columbus, OH 43266-0573



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

FIRSTENERGY NUCLEAR OPERATING COMPANY

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 119  
License No. NPF-58

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the FirstEnergy Nuclear Operating Company (the licensee) dated December 11, 2000, as supplemented by submittal dated February 15, 2001, 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. 119 are hereby incorporated into this license. The FirstEnergy Nuclear Operating Company 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 issuance and shall be implemented not later than 90 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: March 12, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 119

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Replace the following page of the Appendix "A" Technical Specifications 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

2.0-1

2.0-1

## 2.0 SAFETY LIMITS (SLs)

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### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be  $\leq$  23.8% RTP.

2.1.1.2 With the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow:

MCPR shall be  $\geq$  1.10 for two recirculation loop operation or  $\geq$  1.11 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq$  1325 psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager and the corporate executive responsible for overall plant nuclear safety.

(continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-58

FIRSTENERGY NUCLEAR OPERATING COMPANY

PERRY NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated December 11, 2000, as supplemented by letter dated February 15, 2001, the FirstEnergy Nuclear Operating Company (the licensee) proposed modifying the Perry Nuclear Power Plant, Unit 1, Technical Specifications (TS) in support of Cycle 9 operation. The proposed TS modification involves revising the safety limit minimum critical power ratio (SLMCPR) value for two reactor recirculation loop operation in TS 2.1.1.2. The Cycle 9 core will have 748 fuel assemblies, of which there will be 304 fresh GE14 bundles, 280 once burned GE12 bundles, and 164 twice burned GE12 bundles.

On January 10, 2001, the NRC published in the *Federal Register* notice of consideration of issuance of the requested amendment and a proposed no significant hazards consideration determination, 66 FR 2013. The supplemental letter contained clarifying information that was within the scope of the original *Federal Register* notice and did not change the initial no significant hazards consideration determination.

2.0 EVALUATION

The licensee has proposed to revise the SLMCPR value for two recirculation loop operation from 1.09 to 1.10. The SLMCPR value for single recirculation loop operation of 1.11 will remain unchanged.

The licensee's submittals describe the methodologies used to calculate the SLMCPR values for the proposed TS change. The Cycle 9 SLMCPR analysis was performed by Global Nuclear Fuel using plant- and cycle-specific fuel and core parameters along with Nuclear Regulatory Commission (NRC) approved methodologies that include GESTAR-II (NEDE-24011-P-A-13, Section 1.1.5 and 1.2.5), NEDO-10958-A (GETAB), NEDC-32601P (Methodology and Uncertainties for Safety Limit MCPR Evaluations), NEDC-32694P (Power Distribution Uncertainties for Safety Limit MCPR Evaluation), and Amendment 25 to NEDE-24011-P-A (GESTAR-II, Revision 14).

The staff has reviewed the proposed change to the SLMCPR value from 1.09 to 1.10 for Cycle 9, two loop operation, for which the licensee used the approach stated in Amendment 25 to GESTAR II. The licensee concluded that the proposed Cycle 9 SLMCPR value for two loop operation, which is 0.01 higher than the Cycle 8 two loop operation SLMCPR value, will ensure

that 99.9 percent of the fuel rods in the core will not experience boiling transition. This condition satisfies the requirements of General Design Criterion (GDC) 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits.

The licensee has incorporated revised non-power distribution uncertainty and the appropriate GETAB power distribution uncertainty for input to the SLMCPR analysis. Therefore, further justification for the applicability of the approved LTR NEDC-32694P methodology to this analysis related to new GE14 fuel bundles is not required for Perry Cycle 9 operation. The licensee has also provided the approximation correlation to estimate the difference in SLMCPR to clarify the reasonable range of the SLMCPR change. The staff has reviewed the approximation and found it acceptable.

Based on our review, we conclude that the proposed changes to TS 2.1.1.2 are acceptable for the Perry Cycle 9 operation since the changes are analyzed based on NRC approved methodology using the most conservative cycle-specific parameters for SLMCPR analysis.

### 3.0 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.

### 4.0 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 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 (66 FR 2013). 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.

### 5.0 CONCLUSION

The 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. Huang, NRR

Date: March 12, 2001