

November 7, 1997

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Mr. Lew W. Myers  
 Vice President - Nuclear, Perry  
 Centerior Service Company  
 P.O. Box 97, A200  
 Perry, OH 44081

SUBJECT. AMENDMENT NO. 91 TO FACILITY OPERATING LICENSE NO. NPF-58 - PERRY  
 NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M96985)

Dear Mr. Myers:

The Commission has issued the enclosed Amendment No. 91 to Facility Operating License No. NPF-58 for the Perry Nuclear Power Plant, Unit 1. This amendment revises the Technical Specifications (TSs) in response to your application dated October 24, 1996 (PY-CEI/NRR-2104L), as supplemented by letters dated June 16 (PY-CEI/NRR-2178L) and October 2, 1997 (PY-CEI/NRR-2218L).

This amendment revises TS 2.0, Safety Limits, and TS 5.6.5, Core Operating Limits Report, to incorporate the safety limit minimum critical power ratio for Cycle 7 operation.

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

Sincerely,

Original signed by:

Douglas V. Pickett, Senior Project Manager  
 Project Directorate III-3  
 Division of Reactor Projects III/IV  
 Office of Nuclear Reactor Regulation

Docket No. 50-440

- Enclosures: 1. Amendment No. 91 to License No. NPF-58  
 2. Safety Evaluation

cc w/encls: See next page

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 PDR ADOCK 05000440  
 P PDR



DOCUMENT NAME: G:\PERRY\P96985.AMD

OFFICE	PDIII-3:PM	E	PDIII-3:LA	E	OGC
NAME	DPickett <i>SV</i>		CBoyle <i>CP</i>		<i>11/3/97</i>
DATE	10/17/97		11/7/97		11/3/97

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 Office of Nuclear Reactor Regulation

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DOCUMENT NAME: G:\PERRY\P96985.AMD

OFFICE	PDIII-3:PM	E	PDIII-3:LA	E	OGC
NAME	DPickett <i>DVP</i>		CBoyle <i>CB</i>		<i>L. J. Perry</i>
DATE	10/17/97		10/17/97		10/13/97

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

November 7, 1997

Mr. Lew W. Myers  
Vice President - Nuclear, Perry  
Centerior Service Company  
P.O. Box 97, A200  
Perry, OH 44081

SUBJECT: AMENDMENT NO. 91 TO FACILITY OPERATING LICENSE NO. NPF-58 - PERRY  
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Sincerely,

A handwritten signature in cursive script that reads "Douglas V. Pickett".

Douglas V. Pickett, Senior Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosures: 1. Amendment No. 91 to  
License No. NPF-58  
2. Safety Evaluation

cc w/encls: See next page

L. Myers  
Centerior Service Company

cc:

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Regulatory Affairs Manager  
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Perry, OH 44081

Perry Nuclear Power Plant, Units 1 and 2

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Ohio Emergency Management Agency  
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Mayor, Village of Perry  
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Radiological Health Program  
Ohio Department of Health  
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Columbus, OH 43266-0118

Ohio Environmental Protection  
Agency  
DERR--Compliance Unit  
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Columbus, OH 43266-0149

Chairman  
Perry Township Board of Trustees  
3750 Center Road, Box 65  
Perry, OH 44081

State of Ohio  
Public Utilities Commission  
East Broad Street  
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Cleveland Electric Illuminating Co.  
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Perry, OH 44081

cc: (continued)

Donna Owens, Director  
Ohio Department of Commerce  
Division of Industrial Compliance  
Bureau of Operations & Maintenance  
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North Perry Village Hall  
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Columbus, OH 43216



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

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 91  
License No. NPF-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by The Cleveland Electric Illuminating Company, Centerior Service Company, Duquesne Light Company, Ohio Edison Company, OES Nuclear, Inc., Pennsylvania Power Company, and Toledo Edison Company (the licensees) dated October 24, 1996, as supplemented June 16 and October 2, 1997, 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:

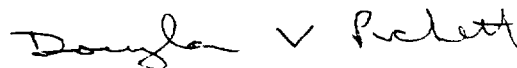
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PDR ADOCK 05000440  
P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 91, are hereby incorporated into this license. The Cleveland Electric Illuminating 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



Douglas V. Pickett, Senior Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV  
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical  
Specifications

Date of Issuance: November 7, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 91

FACILITY OPERATING LICENSE NO. NPF-58

DOCKET NO. 50-440

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contains vertical lines indicating the area of change.

Remove

2.0-1

5.0-18

Insert

2.0-1

5.0-18



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  $\leq$  25% RTP.

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

-----NOTE-----  
Only applicable for Cycle 7 operation.  
-----

MCPR shall be  $\geq$  1.09 for two recirculation loop operation or  $\geq$  1.10 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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## 5.6 Reporting Requirements

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### 5.6.5 Core Operating Limits Report (COLR) (continued)

4. LCO 3.3.1.1, RPS Instrumentation (SR 3.3.1.1.14);
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in NEDE-24011-P-A, General Electric Standard Application for Reactor Fuel. (The approved revision at the time reload analyses are performed shall be identified in the COLR.)\*
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

### 5.6.6 Special Reports

Special Reports shall be submitted in accordance with 10 CFR 50.4 within the time period specified for each report.

The following Special Reports shall be submitted:

- a. Violations of the requirements of the fire protection program described in the USAR which would have adversely affected the ability to achieve and maintain safe shutdown in the event of a fire shall be reported via the Licensee Event Report system.

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\* For Cycle 7, as approved in the NRC Safety Evaluation dated November 7, 1997.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 91 TO FACILITY OPERATING LICENSE NO. NPF-58  
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.  
PERRY NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated October 24, 1996, as supplemented on June 16 and October 2, 1997, the Cleveland Electric Illuminating Co. (the licensee) proposed changes to the Technical Specifications (TS) for the Perry Nuclear Power Plant (PNPP) to incorporate the revised Safety Limit Minimum Critical Power Ratio (SLMCPR) as calculated by General Electric (GE). The need to change the SLMCPR resulted from the 10 CFR Part 21 condition reported by GE in their letter to the NRC dated May 24, 1996. The requested changes would revise the SLMCPR from 1.07 to 1.09 for two recirculation loop operation and from 1.08 to 1.10 for single recirculation loop operation based on the cycle-specific analysis of the mixed core of GE12/GE11/GE10 for Cycle 7 fuel parameters. Cycle 7 operation is scheduled to begin in October 1997.

The supplemental letters provided additional information only and did not change the application or affect the proposed no significant hazards determination.

2.0 EVALUATION

In a March 27, 1996, telephone call, GE notified the NRC that the SLMCPR generically calculated in accordance with the GE Standard Application for Reactor Fuel (GESTAR II) may be nonconservative when applied to some actual core and fuel designs. After meeting with the NRC, and in accordance with commitments made to the NRC, GE performed SLMCPR evaluations for all plants utilizing GE fuel and informed the affected plants of the results. The affected plants were then instructed to establish administrative controls to ensure conformance with the revised safety limit. Further review of this issue by GE resulted in the determination that this constituted a reportable condition per 10 CFR Part 21, as documented in the May 24, 1996, letter from GE to the NRC.

The SLMCPR is a specified acceptable fuel design limit as defined by General Design Criterion 10 of 10 CFR Part 50, Appendix A. The SLMCPR is applied to ensure fuel cladding integrity is not lost as a result of over-heating. The SLMCPR defines the minimum allowable critical power ratio (CPR) at which 99.9% of the fuel rods in the core are expected to avoid boiling transition during the most limiting anticipated operational occurrence.

The SLMCPR in TS 2.1.1.2 is proposed to be changed from 1.07 to 1.09 for two loop operation and from 1.08 to 1.10 for single loop operation when the reactor steam dome pressure is  $\geq 785$  psig and core flow  $\geq 10\%$  rated core flow.

The NRC staff has reviewed the proposed changes to TS 2.1.1.2, which are based on the analyses performed using Perry cycle-specific inputs and approved methodologies including GESTAR II (NEDE-24011-P-A-11, Sections 1.1.5 and 1.2.5, and its reference NEDO-10958-A, January 1977), and found them acceptable. Because the R-factor methodology referenced in NEDE-24011-P-A-11 is not applicable to the part length GE11 fuel, a revised R-factor methodology described in NEDC-32505P, "R-Factor Calculation Method for GE11, GE12, and GE13 Fuel", November 1995 was used. The revised R-factor calculation method uses the same NRC-approved equation stated in GESTAR (NEDE-24011-P-A) except that it substitutes rod-integrated powers for the lattice peaking factors to account for the effects of the part-length-rod design.

The staff has reviewed the R-factor calculation method for GE11 and GE12 fuel, the relevant information provided in the topical report of NEDE-32601P, "Methodology and Uncertainties for Safety Limit MCPR Evaluation" (which is under staff review), and the supplemental information provided by the licensee in their letter dated June 16, 1997. The staff has found that the justification for the revised SLMCPR values is comparable to the generic GE11/GE10 and GE12 SLMCPR evaluations and is acceptable for PNPP, since the core MCPR distribution and bundle R-factor distributions evaluated for the nonequilibrium Cycle 7 core is more restrictive than that of the generic GE11/GE10 and GE12 equilibrium core. As previously discussed, by incorporating the revised SLMCPR values, 99.9% of the fuel rods in the core are expected to avoid boiling transition during the most limiting anticipated operational occurrence.

The licensee's letter of October 2, 1997, added a footnote to TS 5.6.5, "Core Operating Limits Report (COLR)". This footnote clarifies that the methods used to determine the core operating limits for Cycle 7 operation shall include the R-factor methodology and the cycle-specific information in NEDE-32601P approved in this safety evaluation. This will ensure that values for cycle-specific parameters are determined such that all applicable limits (e.g., nuclear limits, transient analysis limits, and accident limits) of the safety analysis are met.

Based on our review, the staff concludes that the proposed changes to the TS are acceptable for the PNPP Cycle 7 application since the changes are analyzed based on the NRC-approved method and the most conservative cycle-specific parameters for SLMCPR analysis are used. Operation beyond Cycle 7 will require separate, supporting analysis for the SLMCPR values.

### 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 involves a change to 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 or a change to a surveillance requirement. 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 (62 FR 6569). The amendment also changes record keeping or reporting requirements. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and 51.22(c)(10). 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

Date: November 7, 1997