

January 19, 1994

Docket No. 50-440

Mr. Robert A. Stratman  
Vice President Nuclear - Perry  
Centerior Service Company  
P. O. Box 97, S270  
Perry, Ohio 44081

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Dear Mr. Stratman:

SUBJECT: AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. NPF-58  
(TAC NO. M82091)

The Commission has issued the enclosed Amendment No. 54 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 October 30, 1991.

This amendment revises Technical Specification 3.1.3.2, "Control Rod Maximum Scram Insertion Times," to clarify the conditions under which the plant must be shut down in the event that individual control rod scram insertion times exceeds the allowable values.

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

Sincerely,

Original signed by  
Robert J. Stransky

Robert J. Stransky, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV/V  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 54 to License No. NPF-58
2. Safety Evaluation

cc w/enclosures:  
See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 19, 1994

Docket No. 50-440

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Vice President Nuclear - Perry  
Centerior Service Company  
P. O. Box 97, S270  
Perry, Ohio 44081

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Sincerely,

A handwritten signature in black ink, appearing to read "R. J. Stransky", written over a horizontal line.

Robert J. Stransky, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV/V  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 54 to License No. NPF-58
2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. Robert A. Stratman  
Centerior Service Company

cc:

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OCRE Interim Representative  
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Terry J. Lodge, Esq.  
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Cleveland Electric Illuminating Company  
Perry Nuclear Power Plant  
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Ohio Emergency Management Agency  
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Perry Nuclear Power Plant  
Unit Nos. 1 and 2

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Division of Power Generation  
Ohio Department of Industrial Relations  
P. O. Box 825  
Columbus, Ohio 43216

The Honorable Lawrence Logan  
Mayor, Village of Perry  
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Perry, Ohio 44081

The Honorable Robert V. Orosz  
Mayor, Village of North Perry  
North Perry Village Hall  
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North Perry Village, Ohio 44081

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Ohio Environmental Protection Agency  
DERR--Compliance Unit  
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Mr. Thomas Haas, Chairman  
Perry Township Board of Trustees  
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State of Ohio  
Public Utilities Commission  
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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 NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 54  
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, Pennsylvania Power Company, and Toledo Edison Company (the licensees) dated October 30, 1991, 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:

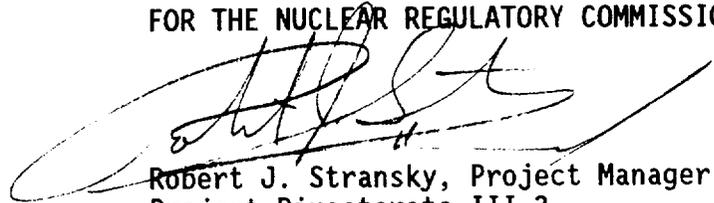
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(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 54 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.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Stransky, Project Manager  
Project Directorate III-3  
Division of Reactor Projects III/IV/V  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of issuance: January 19, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 54

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 contain vertical lines indicating the area of change. Overleaf pages are provided to maintain document completeness.

Remove

3/4 1-6  
3/4 1-7

Insert

3/4 1-6  
3/4 1-7

## REACTIVITY CONTROL SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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4.1.3.1.3 All control rods shall be demonstrated OPERABLE by performance of Surveillance Requirements 4.1.3.2, 4.1.3.3, 4.1.3.4 and 4.1.3.5.

4.1.3.1.4 The scram discharge volume shall be determined OPERABLE by demonstrating:

- a. The scram discharge volume drain and vent valves OPERABLE at least once per 18 months by verifying that the drain and vent valves:
  1. Close within 30 seconds after receipt of a signal for control rods to scram, and
  2. Open when the scram signal is reset.
- b. Proper level sensor response by performance of a CHANNEL FUNCTIONAL TEST of the scram discharge volume scram and control rod block level instrumentation at least once per 31 days.

REACTIVITY CONTROL SYSTEMS

CONTROL ROD SCRAM MAXIMUM INSERTION TIMES

LIMITING CONDITION FOR OPERATION

3.1.3.2 The maximum scram insertion time of each control rod from the fully withdrawn position, based on de-energization of the scram pilot valve solenoids as time zero, shall not exceed the following limits:

<u>Reactor Vessel Dome Pressure (psig)*</u>	<u>Maximum Insertion Times to Notch Position (Seconds)</u>		
	<u>43</u>	<u>29</u>	<u>13</u>
950	0.31	0.81	1.44
1050	0.32	0.86	1.57

APPLICABILITY: OPERATIONAL CONDITIONS 1 and 2.

ACTION:

a. With the maximum scram insertion time of one or more control rods exceeding the maximum scram insertion time limits of Specification 3.1.3.2 as determined by Specification 4.1.3.2.a or b, operation may continue provided that:

1. For all "slow" control rods, i.e., those which exceed the limits of Specification 3.1.3.2, the individual scram insertion times do not exceed the following limits:

<u>Reactor Vessel Dome Pressure (psig)*</u>	<u>Maximum Insertion Times to Notch Position (Seconds)</u>		
	<u>43</u>	<u>29</u>	<u>13</u>
950	0.38	1.09	2.09
1050	0.39	1.14	2.22

Or the requirements of ACTION b are satisfied.

2. For "fast" control rods, i.e., those which satisfy the limits of Specification 3.1.3.2, the average scram insertion times do not exceed the following limits:

<u>Reactor Vessel Dome Pressure (psig)*</u>	<u>Maximum Average Insertion Times to Notch Position (Seconds)</u>		
	<u>43</u>	<u>29</u>	<u>13</u>
950	0.30	0.78	1.40
1050	0.31	0.84	1.53

3. The total number of "slow" control rods does not exceed 7.
4. No "slow" control rod or otherwise inoperable control rod occupies an adjacent location in any direction, including the diagonal, to another such control rod.

Otherwise, be in at least HOT SHUTDOWN within 12 hours.

\*For intermediate reactor vessel dome pressure, the scram time criteria is determined by linear interpolation at each notch position.

## REACTIVITY CONTROL SYSTEMS

### LIMITING CONDITION FOR OPERATION (Continued)

#### ACTION: (Continued)

b. With a "slow" control rod(s) not satisfying ACTION a.1, above:

1. Declare the "slow" control rod(s) inoperable, and
2. Perform the Surveillance Requirements of Specification 4.1.3.2.c at least once per 60 days when operation is continued with three or more "slow" control rods declared inoperable.

Otherwise, be in at least HOT SHUTDOWN within 12 hours.

c. With the maximum scram insertion time of one or more control rods exceeding the maximum scram insertion time limits of Specification 3.1.3.2 as determined by Specification 4.1.3.2.c, operation may continue provided that:

1. "Slow" control rods, i.e., those which exceed the limits of Specification 3.1.3.2, do not make up more than 20% of the 10% sample of control rods tested.
2. Each of these "slow" control rods satisfies ACTION a.1.
3. The eight adjacent control rods surrounding each "slow" control rod are:
  - a) Demonstrated through measurement within 12 hours to satisfy the maximum scram insertion time limits of Specification 3.1.3.2, and
  - b) OPERABLE
4. The total number of "slow" control rods, as determined by Specification 4.1.3.2.c, when added to the total number of ACTION a.3, as determined by Specification 4.1.3.2.a and b, does not exceed 7.

Otherwise, be in at least HOT SHUTDOWN within 12 hours.

d. The provisions of Specification 3.0.4 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.1.3.2 The maximum scram insertion time of the control rods shall be demonstrated through measurement with reactor coolant pressure greater than or equal to 950 psig and, during single control rod scram time tests, the control rod drive pumps isolated from the accumulators:

- a. For all control rods prior to THERMAL POWER exceeding 40% of RATED THERMAL POWER following CORE ALTERATIONS or after a reactor shutdown that is greater than 120 days,
- b. For specifically affected individual control rods\* following maintenance on or modification to the control rod or control rod drive system which could affect the scram insertion time of those specific control rods, and
- c. For at least 10% of the control rods, on a rotating basis, at least once per 120 days of POWER OPERATION.

\*The provisions of Specification 4.0.4 are not applicable for entry into OPERATIONAL CONDITION 2 provided this surveillance is completed prior to entry into OPERATIONAL CONDITION 1.

## REACTIVITY CONTROL SYSTEMS

### CONTROL ROD SCRAM ACCUMULATORS

#### LIMITING CONDITION FOR OPERATION

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3.1.3.3 All control rod scram accumulators shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2 and 5\*.

ACTION:

- a. In OPERATIONAL CONDITIONS 1 or 2:
  1. With one control rod scram accumulator inoperable, within 8 hours:
    - a) Restore the inoperable accumulator to OPERABLE status, or
    - b) Declare the control rod associated with the inoperable accumulator inoperable.Otherwise, be in at least HOT SHUTDOWN within the next 12 hours.
  2. With more than one control rod scram accumulator inoperable, declare the associated control rods inoperable and:
    - a) If the control rod associated with any inoperable scram accumulator is withdrawn, immediately verify that at least one control rod drive pump is operating by inserting at least one withdrawn control rod at least one notch. If no control rod drive pump is operating:
      - (1) If reactor pressure is  $\geq 900$  psig, restart at least one control rod drive pump within 20 minutes or place the reactor mode switch in the Shutdown position.
      - (2) If reactor pressure is  $< 900$  psig, place the reactor mode switch in the Shutdown position.
    - b) Insert the inoperable control rods and disarm the associated directional control valves either:
      - 1) Electrically, or
      - 2) Hydraulically by closing the drive water and exhaust water isolation valves.Otherwise, be in at least HOT SHUTDOWN within 12 hours.
- b. In OPERATIONAL CONDITION 5\*:
  1. With one withdrawn control rod with its associated scram accumulator inoperable, insert the affected control rod and disarm the associated directional control valves within one hour, either:
    - a) Electrically, or
    - b) Hydraulically by closing the drive water and exhaust water isolation valves.

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\*At least the accumulator associated with each withdrawn control rod. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 54 TO FACILITY OPERATING LICENSE NO. NPF-58  
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY, ET AL.  
PERRY NUCLEAR POWER PLANT, UNIT NO. 1  
DOCKET NO. 50-440

1.0 INTRODUCTION

By letter dated October 30, 1991, the Cleveland Electric Illuminating Company, et al. (the licensee) submitted a request to amend the Technical Specifications (TSs) for the Perry Nuclear Power Plant, Unit No. 1. In particular, the licensee requested revision to Technical Specification 3.1.3.2, "Control Rod Maximum Scram Insertion Times," to (1) clarify the conditions under which a plant shutdown is required if one or more control rods does not meet the maximum scram insertion time described in the specification, and (2) delete references to "fast" control rods in Action Statements a.3 and a.4.

2.0 EVALUATION

The intent of Technical Specification 3.1.3.2, "Control Rod Maximum Scram Insertion Times," is to assure that sufficient negative reactivity can be added to shut down the reactor within the time period assumed in various transient and accident analyses. If individual control rods do not insert quickly enough when scrammed, a possibility exists that the reactor may not be shut down quickly enough following a transient to prevent fuel or fuel cladding damage. Specification 3.1.3.2 provides requirements for both individual and average maximum scram insertion times to ensure that the reactor can be shut down as designed, as well as Action Statements to address control rods which do not meet the requirements of the Specification.

The licensee has proposed to revise TS 3.1.3.2 in order to address potential problems with the interpretation of the Action Statements associated with the Specification. In particular, the licensee has proposed to insert a reference in Action Statement a.1 (actions to take if an individual control rod does not meet the requirements of the Specification) to indicate that Action Statement b. (declaration of a control rod as inoperable) is an acceptable alternative if Action Statement a.1 cannot be met. Action Statement b. already contains a reference to Action Statement a.1. This change appears consistent with the current TS and will prevent future confusion. The staff finds this change to be acceptable.

The licensee also proposes to remove erroneous references to "fast" control rods (those that meet the requirements of Specification 3.1.3.2) from Action Statements a.3 and a.4. The Specification contains requirements for the maximum scram insertion times for individual control rods. Action Statement a.1 contains additional requirements for the maximum scram insertion times for individual control rods that cannot meet the requirements of Specification 3.1.3.2. Action Statement a.2 contains requirements for the average maximum insertion times for all "fast" control rods, in the event that one or more control rods does not meet the requirements of the Specification. The average maximum insertion times in Action Statement a.2 are more restrictive than the individual maximum scram insertion times contained in the Specification. The intent of the average maximum scram insertion time requirement is to assure that the plant continues to be operated within the bounds of scram reactivity calculations performed by the General Electric Company. As currently written, Action Statements a.3 and a.4 erroneously apply the average scram insertion requirements to individual control rods. Application of the more restrictive average scram time requirement to individual control rods does not appreciably improve plant safety and could lead to unnecessary plant shutdowns. The staff finds the licensee's proposed changes to Action Statements a.3 and a.4 to be acceptable.

The licensee also proposes to change Action Statements c.2 and c.4 to provide consistency with the changes described above. These changes are editorial in nature and do not detract from the effectiveness of the Action Statements. The staff also finds these changes to be acceptable.

### 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. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding (56 FR 64651). 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: R. Stransky

Date: January 19, 1994