



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

CLEVELAND ELECTRIC ILLUMINATING COMPANY

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

TOLEDO EDISON COMPANY

DOCKET NO. 50-440

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

FACILITY OPERATING LICENSE

License No. NPF-45

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for license filed by the Cleveland Electric Illuminating Company* (CEICO) acting on behalf of itself and as agent for the Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and the Toledo Edison Company (licensees) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Perry Nuclear Power Plant, Unit No. 1 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-148 and the application, as amended, the provisions of the Act, and the regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission, (except as exempted from compliance in Section 2.D below);
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license 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 set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);

*Cleveland Electric Illuminating Company is authorized to act as agent for Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and the Toledo Edison Company, and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

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- E. The Cleveland Electric Illuminating Company is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140 "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Facility Operating License No. NPF-45, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70.
2. Based on the foregoing findings and the Partial Initial Decisions issued December 2, 1983 and September 3, 1985, by the Atomic Safety and Licensing Board regarding this facility, Facility Operating License No. NPF-45, is hereby issued to the Cleveland Electric Illuminating Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and Toledo Edison Company (the licensees) to read as follows:
- A. The license applies to the Perry Nuclear Power Plant, Unit No. 1, a boiling water nuclear reactor and associated equipment (the facility), owned by the Cleveland Electric Illuminating Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and the Toledo Edison Company. The facility is located on the shore of Lake Erie in Lake County, Ohio, approximately 35 miles northeast of Cleveland, Ohio and is described in the licensees' Final Safety Analysis Report, as supplemented and amended, and in the licensees' Environmental Report, as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) The Cleveland Electric Illuminating Company (CEICO) pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the designated location in Lake County, Ohio, in accordance with the procedures and limitations set forth in this license;

- (2) Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and Toledo Edison Company, to possess the facility at the designated location in Lake County, Ohio, in accordance with the procedures and limitations set forth in this license;
 - (3) CEICO, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) CEICO, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material such as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) CEICO, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
 - (6) CEICO, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the 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 or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

CEICO is authorized to operate the facility at reactor core power levels not in excess of 3579 megawatts thermal (100% power) in accordance with the conditions specified herein and in Attachment 1 to this license. The items identified in Attachment 1 to this license shall be completed as specified. Attachment 1 is hereby incorporated into this license. Pending Commission approval, this license is restricted to power levels not to exceed 5 percent of full power (178 megawatts thermal);

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. CEICO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Antitrust Conditions

Cleveland Electric Illuminating Company, Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and the Toledo Edison Company shall comply with the antitrust conditions delineated in Appendix C to this license; Appendix C is hereby incorporated into this license.

(4) Post-Fuel Loading Initial Test Program (Section 14, SSER #3)*

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Inservice Inspection Program (Section 6.6.3, SSER #7)

Within six (6) months after exceeding 5% of rated thermal power, CEICO shall submit the Initial Inservice Inspection Program required by 10 CFR 50.55(a) for the NRC staff's review and approval.

(6) Fire Protection (Section 9.5, SER, SSER #1, 2, 3, 4, 7 and 8)

CEICO shall comply with the requirements of the fire protection program as specified in Attachment 2. Attachment 2 is hereby incorporated into this license.

(7) Detailed Control Room Design Review (Section 18, SSER #7 and 8)

CEICO shall implement the activities remaining to complete the Detailed Control Room Design Review and correct all human engineering discrepancies (HED's) identified in Attachment 3. Attachment 3 is hereby incorporated into this license.

*The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report (SER) and/or its supplements wherein the license condition is discussed.

(8) Emergency Planning (Section 13.3, SSER #7)

- (a) Prior to exceeding 5% of rated thermal power, CEICO shall obtain letters of agreement from all school districts for the supply of buses for evacuation purposes.
- (b) Prior to exceeding 5% of rated thermal power, CEICO shall verify that the training of fire protection personnel in radiological monitoring and decontamination procedures are completed and verify that the necessary decontamination equipment has been provided at the fire department facilities for each reception center.
- (c) In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule (44 CFR Part 350) indicates that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR 50.54(s)(2) will apply.

(9) TDI Diesel Generator Reliability (Section 9.6.3, SSER #6 & 8)

CEICO shall comply with the requirements identified in Attachment 4 relative to the Transamerica Delaval, Inc., diesel engines. Attachment 4 is hereby incorporated into this license.

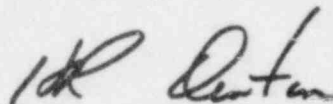
(10) Hydrogen Control Preliminary Design (ASLB M&O, September 3, 1985)

- (a) Prior to exceeding 5% of rated thermal power, CEICO shall have made further confirmatory analysis of equipment in the containment that has not been qualified for pressure survivability, or has narrow margin of pressure survivability. The equipment includes containment vacuum breakers, hydrogen mixing compressor and discharge check valves.
- (b) Prior to exceeding 5% of rated thermal power, CEICO shall ensure that written procedures are available for operation of the hydrogen igniter system.

D. CEICO is exempted from the Section III.D.2(b)(ii) containment airlock testing requirements of Appendix J to 10 CFR Part 50, due to the special circumstance described in Section 6.2.6 of SER Supplement No. 7 authorized by 10 CFR 50.12(a)(2)(iii). This exemption is authorized by law, will not present an undue risk to the public health and safety and is consistent with the common defense and security. The exemption is hereby granted pursuant to 10 CFR 50.12. With the granting of this exemption, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

- E. CEICO shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans, including all amendments and revisions made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Perry Nuclear Power Plant Security Plan," with revisions submitted through November 25, 1985; "Perry Nuclear Power Plant Security Force Training and Qualification Plan," with revisions submitted through September 27, 1985; and "Perry Nuclear Power Plant Safeguards Contingency Plan" (Chapter 8 of the Security Plan), with revisions submitted through October 22, 1985.
- F. Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, CEICO shall report any violations of the requirements contained in Section 2.C of this license in the following manner: initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written followup within thirty (30) days in accordance with the procedures described in 10 CFR 50.73(b), (c) and (e).
- G. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- H. This license is effective as of the date of issuance and shall expire at midnight on March, 18, 2026.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:

1. Attachment 1 - 4
2. Appendix A - Technical Specifications
(NUREG-1162)
3. Appendix B - Environmental Protection
Plan
4. Appendix C - Antitrust Conditions

Date of Issuance: **MAR 18 1986**

ATTACHMENT 1

This attachment identifies specific items which must be completed to the Commission's satisfaction in accordance with the operational models as identified below.

- A. The preoperational tests and testing exceptions identified in the attachment to the February 27, 1986 letter from Mr. Edelman to James G. Keppler shall be completed in accordance with the scheduled commitments contained in that attachment.
- B. The following open or unresolved items must be resolved prior to entering the mode indicated:
 - 1. CEI shall complete installation of all raceway separation barriers required to meet IEEE 384-1974 independence requirements (Inspection Report 50-440/85-018, Item 01). Complete prior to initial criticality.
 - 2. CEI shall provide its program for evaluation of the audibility problems encountered on evacuation of personnel from high noise areas. IE Bulletin 79018 (Inspection Tracking No. 50-440/79018-BB). Complete prior to initial criticality.
 - 3. CEI shall obtain, install, and test IEEE Class 1E qualified isolation transformers in the power supply for Division 3 APRM circuits. Complete prior to exceeding 5% power.
 - 4. CEI shall complete a verification of System Operation Instructions (SOI) in accordance with the schedule set forth in a letter from Edelman to Keppler dated March 4, 1986.
 - 5. CEI shall complete all phases of the Instrument Valve Lineup Verification Special Project Plan 1401 in accordance with the schedule set forth in a letter from Murray R. Edelman to James G. Keppler, dated March 14, 1986.

ATTACHMENT 2

TO NPF-45

FIRE PROTECTION PROGRAM REQUIREMENTS

CEICO shall comply with the following requirements of the fire protection program:

1. CEICO shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report as amended, for the Perry Nuclear Power Plant and as approved in the Safety Evaluation Report (NUREG-0887) dated May 1982 and Supplement Nos. 1 thru 9 thereto, subject to the following provisions:
 - a. CEICO may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

ATTACHMENT 3

TO NPF-45

DETAILED CONTROL ROOM DESIGN REVIEW

CEICO shall comply with the following requirements related to the Detailed Control Room Design Review (DCRDR):

1. Prior to exceeding five percent of thermal rated power, the licensee shall implement corrections to human engineering discrepancies per commitments in the October 14, 1985 letter from M. R. Edelman (CEICO) to B. J. Youngblood (NRC) and February 19, 1986 letter from Mr. R. Edelman (CEICO) to W. R. Butler (NRC) and shall, per commitment in an October 2, 1985 letter from M. R. Edelman to B. J. Youngblood (NRC), provide for NRC review:
 - a. Results of a human factors survey of communications equipment in the control room and at the remote shutdown facilities
 - b. Results of the interim sound surveys in the control room and at the remote shutdown facilities
 - c. Results of the augmented process for verifying that selected improvements provide the necessary correction and do not introduce new human engineering discrepancies
 - d. Commitments and implementation schedules for correction of human engineering discrepancies identified in the above results or justifications for decisions not to correct or to partially correct them.
2. Prior to startup following the first refueling outage, the licensee shall implement corrections to human engineering discrepancies per commitments in the January 10, 1985 Detailed Control Room Design Review Summary Report, in the October 2, 1985 letter from M. R. Edelman (CEICO) to B. J. Youngblood (NRC), and in the October 14, 1985 Supplement to the Detailed Control Room Design Review Summary Report and shall provide for NRC review results of the final sound surveys in the control room and at the remote shutdown facilities.

Additionally, CEICO shall complete the validation of the Perry Nuclear Power Plant Emergency Instructions, and issue a summary report, prior to achieving initial criticality.

ATTACHMENT 4

TO NPF-45

TRANSAMERICA DELAVAL, INC. (TDI) DIESEL ENGINE REQUIREMENTS

CEICO shall comply with the following requirements related to the TDI diesel engines:

1. Changes to the maintenance and surveillance program for the TDI diesel engines, as identified and approved by the NRC staff in the supplemental safety evaluation report in the letter dated November 5, 1985, shall be subject to the provisions of 10 CFR 50.59.

2. Crankshafts shall be inspected as follows:

The oil holes and fillets of the three main bearing journals subject to the highest torsional stresses (Nos. 4, 6, 8) shall be examined with fluorescent liquid penetrant and, as necessary, eddy current, during each 5 year major disassembly. The same inspections on oil holes and fillets shall be performed on at least three crankpin journals between journals 3 and 8.

3. Cylinder blocks shall be inspected at intervals calculated using the cumulative damage index (CDI) model and using inspection methodologies described by Failure Analysis Associates, Inc., (FaAA) in the report entitled "Design Review of TDI R-4 Series Emergency Diesel Generator Cylinder Blocks" (FaAA-84-9-11) dated December 1984. Liquid penetrant inspection of the cylinder liner landing area shall be performed anytime liners are removed.

4. The engines shall be rolled over with the airstart system and the cylinder stopcocks open prior to any planned starts, unless that start occurs within 4 hours of a shutdown. The engines shall also be rolled over with the airstart system and the cylinder stopcocks open after 4 hours, but no more than 8 hours after engine shutdown and then rolled over once again approximately 24 hours after each shutdown. In the event an engine is removed from service for any reason other than the rolling over procedure prior to expiration of the 8 hour or 24 hour periods noted above, that engine need not be rolled over while it is out of service. The licensee shall air roll the engine over with the stopcocks open at the time it is returned to service. The origin of any water detected in the cylinders must be determined and any cylinder head which leaks due to a crack shall be replaced. No cylinder heads that contain a through-wall weld repair where the repair was performed from one side only shall be used on the engines.

5. If inspection of either TDI engine reveals cracks in the crankshaft or in the cylinder block between stud holes of adjacent cylinders, this condition shall be reported promptly to the NRC staff and the affected engine(s) shall be considered inoperable. The engines shall not be restored to "operable" status until the proposed disposition and/or corrective actions have been approved by the NRC staff.

6. Operation beyond the first refueling outage shall require staff approval based on the staff's final review of the Owners Group generic findings and of the overall implementation status of Owners Group recommendations at Perry.