

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

RENEWED FACILITY OPERATING LICENSE NO. DPR-74

1. The U.S. Nuclear Regulatory Commission (the Commission) having previously made the findings set forth in License No. DPR-74 issued on December 23, 1977, has now found that:
 - A. The application to renew License No. DPR-74 filed by Indiana Michigan Power Company (I&M or the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the rules and regulations of the Commission set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Donald C. Cook Nuclear Plant, Unit No. 2 (the facility), has been completed in conformity with Construction Permit No. CPPR-61 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;
 - D. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - E. There is reasonable assurance: (i) that the activities authorized by this renewed 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 rules and regulations of the Commission;
 - F. The licensee is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;

- G. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - H. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public;
 - I. 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 Renewed Facility Operating License No. DPR-74 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this renewed operating license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
2. On the basis of the foregoing findings regarding this facility, Facility Operating License No. DPR-74, issued December 23, 1977, is superseded by Renewed Facility Operating License No. DPR-74, which is hereby issued to the Indiana Michigan Power Company to read as follows:
- A. This renewed operating license applies to the Donald C. Cook Nuclear Plant, Unit No. 2, a pressurized water reactor and associated equipment (the facility), owned by the Indiana Michigan Power Company. The facility is located in Berrien County, Michigan and is described in the "Updated Final Safety Analysis Report" as supplemented and amended and the Environmental Report as supplemented and amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Indiana Michigan Power Company:
 - (1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use and operate, the facility at the designated location in Berrien County, Michigan, in accordance with the procedures and limitations set forth in this renewed operating license;
 - (2) 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 Updated Final Safety Analysis Report, as supplemented and amended;
 - (3) 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 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;

- (4) 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 and equipment calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30 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 renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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

The licensee is authorized to operate the facility at steady state reactor core power levels not to exceed 3468 megawatts thermal in accordance with the conditions specified herein and in Attachment 1 to the renewed operating license. The preoperational tests, startup tests and other items identified in Attachment 1 to this renewed operating license shall be completed. Attachment 1 is an integral part of this renewed operating license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and Appendix B, as revised through Amendment No. 270 are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

(a) Deleted by Amendment No. 76

(b) Deleted by Amendment No. 2

(c) Leak Testing of Emergency Core Cooling System Valves

Indiana Michigan Power Company shall prior to completion of the first inservice testing interval leak test each of the two valves in series in the

residual heat removal, safety injection and boron injection systems in accordance with the specifications of Section XI of the American Society of Mechanical Engineers Code. In addition, prior to completion of the first inservice testing interval, test connections which allow individual leak testing of the charging pump system discharge check valves shall be installed and the check valves shall be leak tested. The tests shall be repeated at the conclusion of each subsequent inservice inspection interval.

- (d) Deleted by Amendment No. 39
- (e) Deleted by Amendment No. 5
- (f) Deleted by Amendment No. 2
- (g) Deleted by Amendment No. 60
- (h) Deleted by Amendment No. 63
- (i) Deleted by Amendment No. 19
- (j) Power Operation with Fewer than Four Reactor Coolant Pumps in Operation

Indiana Michigan Power Company shall not operate the reactor at power levels above P-7 (as defined in Table 3.3.1-1 of Specification 3.3.1 of Appendix A to this renewed operating license) with fewer than four reactor coolant loops in operation until safety analyses for fewer than four loop operation have been submitted and approval for fewer than four loop operation at power levels above P-7 has been granted by the Commission by Amendment of this license.
- (k) Deleted by Amendment No. 16
- (l) Deleted by Amendment No. 63
- (m) Deleted by Amendment No. 19
- (n) Deleted by Amendment No. 28
- (o) Indiana Michigan Power Company shall implement and maintain, in effect, all provisions of the approved Fire Protection Program as described in the Updated Final Safety Analysis Report for the facility and as approved in the SERs dated December 12, 1977, July 31, 1979, January 30, 1981, February 7, 1983, November 22, 1983, December 23, 1983, March 16, 1984, August 27, 1985, June 30, 1986, January 28, 1987, May 26, 1987, June 16, 1988, June 17, 1988, June 7, 1989, February 1, 1990, February 9, 1990, March 26, 1990, April 26, 1990, March 31, 1993,

April 8, 1993, December 14, 1994, January 24, 1995, April 19, 1995, June 8, 1995, and March 11, 1996, subject to the following provision:

The licensee 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.

- (p) Deleted by Amendment No. 121
- (q) Deleted by Amendment No. 2
- (r) Deleted by Amendment No. 68
- (s) Deleted by Amendment No. 261
- (t) Deleted by Amendment No. 63
- (u) Deleted by Amendment No. 261
- (v) Deleted by Amendment No. 269
- (w) Deleted by Amendment No. 261
- (x) Deleted by Amendment No. 261
- (y) Deleted by Amendment No. 261
- (z) The 72-hour allowed outage time of Technical Specification 3.8.1.1 Action "b" which was entered at 0923, on December 7, 2003, may be extended one time by an additional 72 hours to complete repair and testing of the 2 AB diesel generator.

D. Physical Protection

The Indiana Michigan Power Company shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822), and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans¹, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Donald C. Cook Nuclear Plant Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan, Revision 0," submitted by letter dated October 12, 2004.

¹ The Training and Qualification Plan and Safeguards Contingency Plan are Appendices to the Security Plan.

- E. Deleted by Amendment No. 63
- F. In all places of this renewed operating license, the reference to the Indiana and Michigan Electric Company is amended to read Indiana Michigan Power Company.
- G. Deleted by Amendment No. 269
- H. Deleted by Amendment No. 269
- I. Deleted by Amendment No. 261
 - (1) Deleted by Amendment No. 261
 - (2) Deleted by Amendment No. 261
- J. The licensee is authorized to use digital signal processing instrumentation in the reactor protection system.
- K. Updated Final Safety Analysis Report

The Indiana Michigan Power Company Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. The Indiana Michigan Power Company shall complete these activities no later than December 23, 2017, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed operating license. Until that update is complete, Indiana Michigan Power Company may make changes to the programs and activities described in the supplement without prior Commission approval, provided that Indiana Michigan Power Company evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

- L. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of ASTM E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion.
3. This renewed operating license is effective as of the date of issuance and shall expire at midnight, December 23, 2037.

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FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments:

1. Preoperational Tests, Startup Tests and Other Items Which Must Be Completed Prior to Proceeding to Succeeding Operational Modes.
2. Appendix A – Technical Specifications
3. Appendix B – Environmental Technical Specifications

Date of Issuance: August 30, 2005

ATTACHMENT TO RENEWED LICENSE NO. DPR-74

PREOPERATIONAL TESTS, START-UP TESTS AND
OTHER ITEMS WHICH MUST BE COMPLETED PRIOR TO
PROCEEDING TO SUCCEEDING OPERATIONAL MODES

This attachment identifies certain preoperational tests, start-up tests and other items which must be completed to the Commission's satisfaction prior to proceeding to certain specified Operational Modes. Indiana Michigan Power Company shall not proceed beyond the authorized Operational Modes without prior written authorization from the Commission.

- A. Indiana and Michigan Electric Company may at the license issue date proceed directly to Operational Mode 6 (initial fuel loading) and may subsequently proceed to Operational Mode 1 (power operation) except as noted below.
- B. The following items must be completed prior to proceeding to Operational Mode 6 (initial fuel loading):
 - 1. Satisfactory completion of the following preoperational tests:
 - a. The (CVCS) Boron Makeup (S/7) preoperational test.
- C. The following items must be completed prior to proceeding to Operational Mode 4 (hot shutdown):
 - 1. Evaluation of water hammers experienced in the nonessential service water system. (Operations)
 - 2. Evaluation of complete power loss (AC & DC) to one train of engineered safeguards resulting in complete loss of status lights or the complete loss of power to the other train resulting in complete loss of alarm annunciators. (Operations)
 - 3. Evaluation of effects of loss of reactor coolant system wide range temperature indication on loss of the one distribution bus. (Operations)
- D. The following items must be completed prior to proceeding to Operational Mode 2 (initial criticality):
 - 1. Deleted by Amendment 2.
 - 2. Deleted by Amendment 2.
 - 3. Deleted by Amendment 2.
 - 4. Deleted by Amendment 2.

5. Deleted by Amendment 2.

Amendment No. 2 6. Prior to Mode 1 operation not to exceed 678 megawatts thermal (twenty percent of rated power) resolution of the following conditions is required. Written approval by the Commission is required prior to operation at greater than twenty percent of rated power.

A. Deleted by Amendment No. 70.

Amendment No. 6 B. Deleted by Amendment No. 70.

* Amendments 2, 4, and 6 change 6.