DEC 2 3 1977

Docket No. 50-316

Indiana & Michigan Electric Company
Indiana & Michigan Power Company
ATTN: Mr. John A. Tillinghast
Vice President
P. O. Box 18
Bowling Green Station
New York New York 10004

Gentlemen:

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NO. DPR-74
(Donald C. Cook Nuclear Plant, Unit No. 2)

The Nuclear Regulatory Commission has issued Facility Operating License No. DPR-74 (enclosed) to Indiana & Michigan Electric Company and Indiana & Michigan Power Company for the Donald C. Cook Nuclear Plant, Unit No. 2 authorizing operation at 3391 megawatts thermal subject to the conditions delineated therein. However, the operation of the facility is temporarily restricted to the sequence of operational modes described in Attachment 1 to the license until the preoperational tests, startup tests and other items noted in Attachment 1 are completed to the written satisfaction of the Commission. A copy of the Notice of Issuance is also enclosed.

The Commission has also issued Supplement No. 7 to the Safety Evaluation Report. Two copies are enclosed for your information and use.

Three signed copies of Amendment 7 to Indemnity Agreement B-61 are enclosed for your review and acceptance. Please have both licensees sign all copies and return one copy to the Division of Project Management.

Sincerely,
Original Signed By
Roger S. Boyd

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosures:
1. License No. DPR-74
2. Federal Register Notice
3. Supplement No. 7 to Safety Evaluation Report
4. Amendment 7 to B-61

see SER + tech specs Compt. 1 GD

MILO21080151

ccs w/encls:
See page 2

OFFICE	DPM:LWR #2	DPM:LWR #2	DPM:LWR #2	DPM:AD/LWR	DPM:DD	DPM:DIR
SURNAME	JLee:mt	MMMlynczak	KKniel	DBVassallo	RCDAYoung	RSBoyd
DATE	12/22/77	12/22/77	12/22/77	12/22/77	12/24/77	12/24/77

Original Signed By
Roger S. Boyd

Docket No. 50-316

Indiana & Michigan Electric Company
Indiana & Michigan Power Company
ATTN: Mr. John A. Tillinghast
Vice President
P. O. Box 18
Bowling Green Station
New York, New York 10004

Gentlemen:

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NO. DPR-74
(Donald C. Cook Nuclear Plant, Unit No. 2)

The Nuclear Regulatory Commission has issued Facility Operating License No. DPR-74 (enclosed) to Indiana & Michigan Electric Company and Indiana & Michigan Power Company for the Donald C. Cook Nuclear Plant, Unit No. 2 authorizing operation at 3391 megawatts thermal subject to the conditions delineated therein. INSERT A copy of the Notice of Issuance is also enclosed.

The Commission has also issued Supplement No. 7 to the Safety Evaluation Report. Two copies are enclosed for your information and use.

Three signed copies of Amendment 7 to Indemnity Agreement B-61 are enclosed for your review and acceptance. Please have both licensees sign all copies and return one copy to the Division of Project Management.

Sincerely,

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosures:
1. License No. DPR-74
2. Federal Register Notice
3. Supplement No. 7 to Safety Evaluation Report
4. Amendment 7 to B-61

ccs w/encls:
See page 2

OFFICE	DPM:LWR #2	DPM:LWR #2	DPM:LWR #2	DPM:AD	DPM:DD	DPM
SURNAME	JLee:mt	MMMlynczak	KKniel	DBVassallo	RCDeYoung	RSBoyd
DATE	12/21/77	12/ /77	12/ /77	12/ /77	12/ /77	12/ /77

Indiana & Michigan Electric Company
Indiana & Michigan Power Company

DEC 23 1977

cc: Mr. R. W. Jurgensen
Chief Nuclear Engineer
American Electric Power Service Corporation
2 Broadway
New York, New York 10004

Gerald Charnoff, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20006

Mr. David Dinsmore Comey
Executive Director
Citizens for a Better Environment
59 East Van Buren Street
Chicago, Illinois 60605

Executive Office of the Governor
Division of Intergovernmental Relations
Lewis Cass Building, 2nd Floor
Lansing, Michigan 49813

State Board of Health
ATTN: Director, Bureau of Engraving
1330 West Michigan Street
Indianapolis, Indiana 46206

Mr. Wade Schuler, Supervisor
Lake Township
Baroda, Michigan 49101

Mr. W. Mabry, Mayor
City of Bridgman, Michigan 49106

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection
Agency
Federal Activities Branch
Region V Office
ATTN: EIS Coordinator
230 South Dearborn Street
Chicago, Illinois 60604

Mr. Bruce Blanchard
Environmental Projects Review
U. S. Department of the Interior
Room 4256
18th and C Streets, N. W.
Washington, D. C. 20240

Defense Mapping Agency
Aerospace Center (ADL)
St. Louis Air Force Station
Missouri 63118

Mr. Bert Lindenfeld
Herald-Palladium
Michigan and Oak Streets
Benton Harbor, Michigan 49022

Ms. Rebecca Hanmer
ATTN: Jack Anderson
Office of Federal Activities
Environmental Protection
Agency
Room M-535, Waterside Mall
401 M Street, S.W.
Washington, D. C. 20460

OFFICE➤						
SURNAME➤						
DATE➤						

INDIANA AND MICHIGAN ELECTRIC COMPANY
INDIANA AND MICHIGAN POWER COMPANY

DOCKET NO. 316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

FACILITY OPERATING LICENSE

License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) having found that:

A. The application for license filed by Indiana and Michigan Electric Company and Indiana and Michigan Power Company (the licensees) 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 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 (facility) has been substantially 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. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

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 rules and regulations of the Commission;

E. Indiana and Michigan Power Company is technically qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission.

F. Indiana and Michigan Power Company and Indiana and Michigan Electric Company are financially qualified to engage in activities authorized by this operating license in accordance with the rules and regulations of the Commission;

G. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

OFFICE➤						
SURNAME➤						
DATE➤						

H. The issuance of this 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 Facility Operating License No. DPR-74, subject to the conditions for protection of the environment set forth herein, is in accordance with Appendix D to 10 CFR Part 50 (currently known as 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 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. Facility Operating License No. DPR-74 is hereby issued to the Indiana and Michigan Electric Company and the Indiana and Michigan Power Company to read as follows:

A. This 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 and Michigan Electric Company and the Indiana and Michigan Power Company. The facility is located in Berrien County, Michigan and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 12 through 79) and the Environmental Report as supplemented and amended (Supplements 1 through 4).

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Indiana and Michigan Electric Company and Indiana and Michigan Power Company:

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess and use, and Indiana and Michigan Power Company to operate, the facility at the designated location in Berrien County, Michigan, in accordance with the procedures and limitations set forth in this 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 Final Safety Analysis Report, as supplemented and amended;

OFFICE➤						
SURNAME➤						
DATE➤						

(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 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 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

Indiana and Michigan Power Company is authorized to operate the facility at steady state reactor core power levels not in excess of 3391 megawatts thermal in accordance with the conditions specified herein and in Attachment 1 to this license. The preoperational tests, startup tests and other items identified in Attachment 1 to this license shall be completed. Attachment 1 is an integral part of this license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A attached hereto are hereby incorporated in this license. The Technical Specifications contained in Appendix B to Facility Operating License No. DPR-58 issued on

OFFICE➤						
SURNAME➤						
DATE➤						

October 25, 1974 for Donald C. Cook Nuclear Plant, Unit No. 1 (Docket No. 50-315), as revised through Amendment No. 22, also are hereby incorporated in this license. Indiana and Michigan Power Company shall operate the facility in accordance with the Technical Specifications, Appendices A and B.

(3) Additional Conditions

(a) Analysis of Reactor Vessel Supports and Internals

Indiana and Michigan Power Company shall submit by September 30, 1979, an analysis which defines the loads on the reactor coolant system and internals for a postulated break at or very near the cold leg of the reactor pressure vessel nozzle and evaluates: (a) the full restraint capability of the reactor coolant system, (b) the structural capability of the internals, and (c) the safety margins of each. The required analysis shall be performed using the approved hydraulic model referenced in WCAP-8708, "MULTIFLEX, A Fortran IV Computer Program for Analyzing Thermal-Hydraulic Structure System Dynamics." If modifications to the facility are indicated by the results of the analysis, Indiana and Michigan Power Company shall submit them for review and implement them on a schedule acceptable to the Commission.

(b) Steam Generator Subcompartment Pressure Response Analysis

Indiana and Michigan Power Company shall submit prior to Mode 2 operation for Commission review and approval an analysis of short-term steam generator subcompartment pressure response. The analysis shall be performed using the THD computer code and shall define: (a) the adequacy of the steam generator supports to withstand asymmetric loads resulting from a postulated steamline break within the steam generator subcompartment, and (b) the adequacy of the steam generator enclosure to withstand the calculated pressure differential across the enclosure after a postulated steamline break.

(c) Leak Testing of Emergency Core Cooling System Valves

Indiana and 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

OFFICE➤						
SURNAME➤						
DATE➤						

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) Overpressure Mitigating System

Indiana and Michigan Power Company shall achieve full implementation of its proposed overpressure mitigating system which utilizes power operated relief valves with a low pressure setpoint before twelve effective full power months of operation of the facility.

(e) New Thermal Design Basis/WRB-1 Heat Transfer Correlation

Indiana and Michigan Power Company shall limit the reactor thermal power to 1695 MW_t (50% of maximum rated power) until the Commission has approved the WRB-1 correlation and the Improved Thermal Design Procedure (Westinghouse Topical Reports WCAP-8762 "New Westinghouse Correlation WRB-1 for Predicting Critical Heat Flux in Rod Bundles with Mixing Vane Grids" and WCAP-8567 "Improved Thermal Design Procedure") or until the technical specifications are modified to reflect the results of Commission approved thermal design calculations.

During the period when power operation is limited to 1695 MW_t, the reactor flux trip shall be set to 2035 MW_t (60% of maximum rated power).

(f) Electrical Connectors

Indiana and Michigan Power Company shall replace all safety-related ITT-Cannon electrical connectors in the lower containment with qualified splices prior to Mode 2 operation. This facility modification shall be comparable to the modification made to the Donald C. Cook Nuclear Plant, Unit 1.

(g) Containment Long-Term Temperature and Pressure Response

Indiana and Michigan Power Company shall submit an analysis of the long-term containment temperature and pressure response to a postulated steamline break using the LOTIC-3 computer code within five months of approval by the Commission of the LOTIC-3 code.

(h) Containment Sump Design Verification

Indiana and Michigan Power Company shall complete tests to verify containment sump design before November 1978 and submit the results for Commission review and approval.

OFFICE➤					
SURNAME➤					
DATE➤					

(i) Leak Rate Testing of Containment Isolation Valves

Indiana and Michigan Power Company shall install prior to startup, following the first regularly scheduled refueling outage, test connections to allow Type C leak testing of containment isolation valves. Indiana and Michigan Power Company shall modify the containment isolation valves in the component cooling water system which are identified by and associated with the following containment penetration numbers: CPN 25(1), 25(2), 25(3), 25(4), 72(1), 72(2), 72(3) and 72(4). Indiana and Michigan Power Company shall modify to allow pneumatic leak rate testing the isolation valves identified by and associated with the following containment penetration numbers: CPN 38, 39 and 56.

(j) Power Operation with Fewer Than Four Reactor Coolant Pumps in Operation

Indiana and Michigan Power Company shall not operate the reactor at power levels above P-7 (as defined in Table 3.3-1 of Specification 3.3.1.1 of Appendix A to this 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) Electrical Modification of the Auxiliary Feedwater System

Indiana and Michigan Power Company shall convert prior to startup, following the first regularly scheduled refueling outage, the throttle-stop steam admission valve to the turbine driven auxiliary feedwater pump and the four motor-operator feedwater valves to the steam generators from the turbine driven auxiliary feedwater pump from alternating current to direct current power

(l) Residual Heat Removal System Low Flow Alarm

Indiana and Michigan Power Company shall prior to startup, following the first regularly scheduled refueling outage, develop and submit for Commission review and approval the control logic for an alarm designed to alert the

OFFICE➤						
SURNAME➤						
DATE➤						

reactor operator to possible loss of flow in the residual heat removal system. Following initial startup and prior to installation of the alarm, Indiana and Michigan Power Company shall station an operator at a local panel to monitor cooldown flow when the residual heat removal system is in operation and the vessel head is in place.

(m) 600 Volt Containment Power Penetrations

Indiana and Michigan Power Company shall modify the 600 volt containment electrical power penetration circuits to meet the requirements of Regulatory Guide 1.63 prior to startup following the first regularly scheduled refueling outage. This modification consists of the installation of redundant circuit breakers in the 600 volt containment electrical power penetration circuits to protect the penetration seals by a trip of the 600 volt switchgear breakers in the event of a failure of the molded case circuit breakers.

(n) Instrument Trip Setpoints

Indiana and Michigan Power Company shall submit for Commission review within six months of the date of issuance of this operating license the following values for each Reactor Protection System and Engineered Safety Features instrumentation channel:

(a) the technical specification trip setpoint value;

(b) the technical specification allowable value (the technical specification trip setpoint plus the instrument drift assumed in the accident analysis);

(c) the instrument drift assumed to occur during the interval between technical specification surveillance tests;

OFFICE➤						
SURNAME➤						
DATE➤						

(d) the components of the cumulative instrument bias; and

(e) the maximum margin between the technical specification trip setpoint and the trip value assumed in the accident analysis.

(o) Fire Protection

Indiana and Michigan Power Company shall prior to startup, following the first regularly scheduled refueling outage, provide for Commission review the following:

(a) results of penetration fire stop testing;

(b) results of testing of control room fire detectors;

(c) details of the implementation of the emergency shutdown system which provides for compliance with the Commission's position that the system shall be capable of performing its function given the loss of offsite power;

(d) a schedule for implementation of changes to the fire protection system;

(e) an update of the Final Safety Analysis Report to include a description of the upgraded fire protection system.

(p) Emergency Planning

Indiana and Michigan Power Company shall submit for Commission review prior to Mode 2 operation all documentation required to support its revised emergency plan.

OFFICE➤						
SURNAME➤						
DATE➤						

(q) Qualification of Electrical Equipment

Indiana and Michigan Power Company shall prior to Mode 2 operation make available for Commission review documentation for test procedures used to qualify electrical equipment in the lower containment for steamline break in accordance with 10 CFR Part 50, Appendix B.

(r) Seismic Qualification Review

Indiana and Michigan Power Company shall prior to June 1, 1978 complete the documentation of seismic qualification procedures for safety-related electrical and mechanical equipment.

(s) Diesel Generator Lockout

Indiana and Michigan Power Company shall prior to Mode 1 operation modify the design of the control circuitry for the emergency diesel generators to provide an alarm in the control room to alert the reactor operator should the associated diesel generator become incapable of responding to an emergency start signal due to open knife switches in the control circuitry of the generator.

The licensees shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). The approved security plan consists of proprietary documents, collectively titled, "Donald C. Cook Nuclear Plant Industrial Security Manual," with revisions as follows:

	Letter Submittal Date
Original	August 15, 1972
Revisions Dated:	
September 21, 1972	September 21, 1972
January 15, 1973	January 22, 1973
November 16, 1973	November 27, 1973
May 10, 1974	May 24, 1974
October 7, 1974	November 13, 1974
October 2, 1975	November 14, 1975
March 12, 1976	April 5, 1976
September 16, 1976	October 4, 1976
December 3, 1976	December 20, 1976
January 3, 1977	February 3, 1977

OFFICE➤						
SURNAME➤						
DATE➤						

In addition the licensees shall fully implement the physical protection commitments of their proprietary letters to the Director, Office of Nuclear Reactor Regulation dated July 2, 1976 and December 13, 1977.

Further, the licensees shall fully comply with the applicable requirements of 10 CFR Part 73 with specific attention to the requirements of 10 CFR Part 73.55 except for any requirement involving construction and installation of equipment not already in place, and shall diligently accomplish the necessary construction and installation of equipment, so as to be able to fully implement the requirements of 10 CFR 73.55 by August 24, 1978.

E. This license is subject to the following additional conditions for the protection of the environment:

(1) The licensees will comply with appropriate water quality standards, in accordance with Federal, State and local regulations (including changes as required by the Federal Water Pollution Control Act Amendments of 1972).

(2) If harmful effects or evidence of unacceptable damage are detected by the monitoring programs, the licensees shall provide to the Commission an analysis of the problem and a plan of action to be taken to eliminate or significantly reduce the detrimental effects or damage.

(3) Before engaging in an operational activity not evaluated by the Commission, the licensees will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than evaluated in the Final Environmental Statement, the licensees shall provide a written evaluation of such activities and obtain prior approval of the Director, Office of Nuclear Reactor Regulation for the activities.

OFFICE➤						
SURNAME➤						
DATE➤						

F. In accordance with the requirement imposed by the October 8, 1977 Order of the United States Court of Appeals for the District of Columbia in Natural Resources Defense Council vs. Nuclear Regulatory Commission, No. 74-1385 abd 74-1586 (cert. granted sub nom Vermont Yankee Nuclear Power Corp. vs. Natural Resources Defense Council, 45 U.S.L.W. 3570, February 22, 1977) that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license issued herein shall be subject to the outcome of such proceedings.

G. This license is effective as of the date of issuance and shall expire at midnight, March 25, 2009.

Original Signed By
Roger S. Boyd
Roger S. Boyd, Director
Division of Project Management
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

Date of Issuance: December 23, 1977

DPM
RSBoyd
12/24/77

see page 11 for clarity

	AD/FP:DSE	D:FP:DSE	DPM:AD	ELD	ELD	DPM:OD
	VAMoore	for HRDenton	DBVassallo	JRutberg	R. Black	RCDeYoung
	12/22/77	12/22/77	12/22/77	12/23/77	12/22/77	12/24/77

OFFICE	DPM:LWR #2	DPM:LWR #2	STS:DOR	SB:DOR	OA	FP:DSE
SURNAME	JLee:mt	MMMlynczak KKhiel	JMosburg	RClark	JSaltzman	FCota GKnighton
DATE	12/21/77	12/22/77	12/22/77	12/22/77	12/22/77	12/22/77

Original Signed By
Roger S. Boyd

DEC 2 3 1977

ATTACHMENT TO LICENSE DPR-74

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

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

A. Indiana and Michigan Power 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. Review of licensee's seismic analysis of conduit supports, cable trays and instruments (IE Reports 77-06 and 77-09 - Construction),

2. Replacement of electrical connectors with splices (IE Bulletin 77-05 - Construction).

3. Review of open design changes and deviation reports (IE Report 77-23 - Construction).

4. Review of 50.55(e) report of seismic support of Class IE instruments and tubing (50.55e report dated September 2, 1977 - Construction).

5. Installation of fire barriers on cable trays in cable spreading room below control room. (Construction).

6. Resolution of items identified in special inspection of electrical qualification records for steamline break. (Construction).

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-316

INDIANA AND MICHIGAN ELECTRIC COMPANY
INDIANA AND MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT UNIT NO. 2

NOTICE OF ISSUANCE OF A FACILITY OPERATING LICENSE

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. DPR-74 to Indiana and Michigan Electric Company and Indiana and Michigan Power Company authorizing operation of the Donald C. Cook Nuclear Plant, Unit No. 2 at steady state reactor core power levels not in excess of 3391 megawatts thermal, in accordance with the provisions of the license and the Technical Specifications. However, the facility is temporarily restricted from operating at full rated power until certain tests and other items noted in the license conditions are completed to the written satisfaction of the Commission. The Donald C. Cook Nuclear Plant, Unit No. 2, is a pressurized water nuclear reactor located at the licensees' site in Berrien County, Michigan.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license. The Commission has also made appropriate findings which are set forth in the license regarding the environmental impact associated with operation of the facility. The license also includes the condition that the license is

OFFICE➤						
SURNAME➤						
DATE➤						

subject to the outcome of the proceeding in Natural Resources Defense Council vs. NRC (D. C. Circuit) (July 21, 1976), Nos. 74-1385 and 74-1586. The application for the license complies with the standards and requirements of the Act and the Commission's rules and regulations.

The license is effective as of its date of issuance and shall expire on March 25, 2009.

A copy of (1) Facility Operating License No. DPR-74, complete with Technical Specifications (Appendices "A" and "B"); (2) the report of the Advisory Committee on Reactor Safeguards, dated December 13, 1977; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated September 10, 1973 and Supplements 1 through 7 thereto (Supplement No. 7 relates solely to issuance of DPR-74); (4) the Final Safety Analysis Report and amendments thereto; (5) the licensees' Environmental Report dated February 1971 and supplements thereto; (6) the Draft Environmental Statement dated December 1972; (7) the Final Environmental Statement dated August 1973; and (8) Supplement No. 1 to the Final Environmental Statement, dated November 1977 (NUREG-0385) are available for public inspection at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C. and the Maude Preston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085.

OFFICE➤						
SURNAME➤						
DATE➤						

A copy of the Safety Evaluation Report and Supplements 1 through 7, the Final Environmental Statement and the license may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management. Copies of Supplement No. 1 to the Final Environmental Statement (Document No. NUREG-0385) may be purchased, at current costs, from the National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161.

Dated at Bethesda, Maryland, this 23rd day of December, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
K. Kniel

Karl Kniel, Chief
Light Water Reactors
Branch No. 2
Division of Project Management

OFFICE➤	DPM:LWR #2	DPM:LWR #2	EHD	DPM:LWR #2		
SURNAME➤	JLee:mt	MMYnczak	TBlack	KKniel		
DATE➤	12/23/77	12/23/77	12/23/77	12/23/77		

Advisory Committee on Reactor Safeguards, dated December 13, 1977; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated September 10, 1973 and Supplements 1 through 7 thereto (Supplement No. 7 relates solely to issuance of DPR-74); (4) the Final Safety Analysis Report and amendments thereto; (5) the licensees' Environmental Report dated February 1971 and supplements thereto; (6) the Draft Environmental Statement dated December 1972; (7) the Final Environmental Statement dated August 1973; and (8) Supplement No. 1 to the Final Environmental Statement, dated November 1977 (NUREG-0385) are available for public inspection at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C. and the Maude Preston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085.

A copy of the Safety Evaluation Report and Supplements 1 through 7, the Final Environmental Statement and the license may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management. Copies of Supplement No. 1 to the Final Environmental Statement (Document No. NUREG-0385) may be purchased, at current costs, from the National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161.

Dated at Bethesda, Maryland, this day of

FOR THE NUCLEAR REGULATORY COMMISSION

Karl Kniel, Chief
Light Water Reactors
Branch No. 2

OFFICE➤	DPM:LWR #2	DPM:LWR #2	Division of	Project Management		DPM:LWR #2
SURNAME➤	JLee:mt	MMLynczak			R. Black	KKniel
DATE➤	12/9/77	12/22/77			12/23/77	12/22/77

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

Docket Nos. 50-315
50-316

AMENDMENT TO INDEMNITY AGREEMENT NO. B-61

AMENDMENT NO. 7

Effective DEC 23 1977, Indemnity Agreement No. B-61, between Indiana and Michigan Power Company and Indiana and Michigan Electric Company, and the Atomic Energy Commission, dated May 26, 1972, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1301	(From 12:01 a.m., May 26, 1972, to 12 midnight, October 24, 1974, inclusive)
DPR-58	(From 12:01 a.m., October 25, 1974)
SNM-1753	(From 12:01 a.m., August 18, 1977, to 12 midnight, DEC 22 1977, inclusive)
DPR-74	(From 12:01 a.m., DEC 23 1977)

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Jerome Saltzman, Chief
Antitrust and Indemnity Group
Office of Nuclear Reactor Regulation

Accepted _____, 1977

By _____
INDIANA AND MICHIGAN POWER COMPANY

Accepted _____, 1977

By _____
INDIANA AND MICHIGAN ELECTRIC COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2
FACILITY OPERATING LICENSE NO. DPR-74
DECEMBER 23, 1977

Internal Distribution, Excluding Enclosure 3 of Transmittal Letter (To Be Distributed Separately)

Docket File
NRC PDR
Local PDR
LWR #2 File*
Attorney, ELD
R. S. Boyd*
R. C. DeYoung*
D. B. Vassallo*
K. Kniel
M. Mlynczak
J. Lee
F. J. Williams*
H. Smith*
B. Scott*
IE (5)
N. Dube*
M. Jinks (4)
W. Miller*
V. A. Moore
H. Denton*
R. H. Vollmer*
M. L. Ernst*
W. P. Gammill*
R. J. Mattson*
J. Knight
D. F. Ross
R. L. Tedesco
B. Scharf (15)
D. Skovholt
A. Toalston*
E. Hughes*
EP Project Manager
EP Licensing Assistant*
H. Bristow*
S. Duncan*
V. Stello*
K. Goller
J. McGough
D. Eisenhut
Project Manager, OR
Branch Chief, OR
Licensing Assistant, OR *

bcc: JRBuchanan, NSIC
TBAbernathy, TIC
ASRosenthal, ASLAB
JYore, ASLBP
ACRS (16)

*w/o Technical Specifications

ISSUANCE OF FACILITY OPERATING LICENSE REVIEW LIST

Docket No(s): 50-316 License No(s): DPR-74

Licensee: Indiana & Michigan Electric Company/Indiana & Michigan Power Company

Facility Designation: Donald C. Cook Nuclear Plant, Unit No. 2

PART I

	Date
Notice of Consideration of Issuance of License:	
Published in the Federal Register	6/29/72
Action Date	
OR	
Initial Decision or Order	N/A
Safety Review:	
Safety Evaluation Report Issued (Original)	9/10/73
ACRS Letter Issued	
Environemtnal Review:	
Final Environmental Statement Issued; Supplement 1 Issued	8/73 11/77
Published in the Federal Register	8/7/73 11/25/77
Antitrust Review:	
AIG Concurrences	N/A
Notifications Required by Act & Commission Rules (date initial application forwarded):	
State Officials	2/9/71
Local Officials	8/30/71
Water Quality Certification: 401 Type; Suppl. Certificate	
Submitted by Applicant	2/13/74 11/27/74
Transmitted to EPA	2/27/74 12/5/74
License Fee: Amount $ 877,335 Paid	12/23/77
Indemnity Agreement: AIG concurrence (attach cy to ltr)	12/22/77
Status of outstanding construction items checked with IE:	
QA Program: Required to be operational*	
In Effect	
Final Inspection Report (if available)	12/23/77
Technical Specifications: DPM Concurrence	12/23/77
DSE Concurrence (N/A)	

*90 days prior to fuel loading or 30 days prior to hearing if QA item in contention

NOV 1977

ISSUANCE OF FACILITY OPERATING LICENSE REVIEW LIST (contd)

	Date
Public Announcement (to be released-attach cy if available)	
Issuance Package: ELD Concurrence	
Letter to Licensee	12/22/77
Operating License	12/22/77
Federal Register Notice of Issuance	12/22/77
Transmittal to SECY	

PART II

	Date Originated	Date Sent
Operating License	12/21/77	12/23/77
Transmittal to SECY (w/Federal Register Notice of Issuance)		12/23/77
Transmittal to SEE & SNR		12/28/77
Letter to Licensee	12/21/77	12/23/77
cc w/encl:		
State Officials		" "
Local Officials		" "
Intervenors, et al		" "
EPA		" "
ACRS (16)		" "
Mr. Bruce Blanchard Environmental Projects Review Department of the Interior Room 4256 18th and C Street, N.W. Washington, D. C. 20240		" "
For less than full power license:		
Ms. Rebecca Hanmer ATTN: Jack Anderson Office of Federal Activities Environmental Protection Agency Room W-535, Waterside Mall 401 M Street, S.W. Washington, D. C. 20460		" "
~~Mr. Sheldon Meyers, EPA~~		
FR Notice Filing Date		
FR Publication Date		
Citation		

NOV 1977

NRC ISSUES OPERATING LICENSE FOR UNIT 2
OF DONALD C. COOK NUCLEAR PLANT IN MICHIGAN

A license authorizing operation of Unit 2 of the Donald C. Cook Nuclear Power Plant near Benton Harbor, Michigan, was issued on 12/19/77 to Indiana and Michigan Power Company and Indiana and Michigan Electric Company by the Nuclear Regulatory Commission Office of Nuclear Reactor Regulation.

Unit 2 uses a pressurized water reactor and will have an electrical capacity of about 1100 megawatts. The plant site is on Lake Michigan in Berrien County near the City of Bridgman and about 11 miles southwest of Benton Harbor.

The term of the license is 40 years from the date construction ~~of the plant~~ was authorized in March 1969.

Before the license was issued, the facility was inspected by representatives of the NRC staff to assure that it has been satisfactorily completed and is ready for fuel loading.

On the same site, Unit 1, of similar size and design, has been in operation since ~~1974.~~ 1975.

#

Words added re gradual increase to 100% power by written authorization of Comm.

IE Report
12/23/77

Karl Kniel
Rm 148
Phillips Bldg.

ENCLOSURE A

Items to be completed before fuel loading (Mode 6)

1. Satisfactory completion of the (CVCS) Boron Makeup (S/7) Preoperational test.

Karl Kniel
Rm 148
Phillips Bldg

ENCLOSURE B

Items to be completed before heatup (Mode 4)

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)

Karl Knicl
Rm 148
Phillips Bldg

ENCLOSURE C

Items to be completed before initial criticality (Mode 2)

1. Review of licensee's seismic analysis of conduit supports, cable trays and instruments (IE Reports 77-06 and 77-09 - Construction).

2. Replacement of electrical connectors with splices (IE Bulletin 77-05 - Construction).

3. Review of open design changes and deviation reports (IE Report 77-23 - Construction).

4. Review of 50.55(e) report of seismic support of Class 1E instruments and tubing (50.55e report dated September 2, 1977 - Construction).

5. Installation of fire barriers on cable trays in cable spreading room below control room (Construction).

6. Resolution of items identified in special inspection of electrical qualification records for steamline break - Enclosure D. (Construction)

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

DEC 23 1977

Docket No. 50-316

Indiana & Michigan Electric Company
Indiana & Michigan Power Company
ATTN: Mr. John A. Tillinghast
Vice President
P. O. Box 18
Bowling Green Station
New York, New York 10004

Gentlemen:

SUBJECT: ISSUANCE OF FACILITY OPERATING LICENSE NO. DPR-74
(Donald C. Cook Nuclear Plant, Unit No. 2)

The Nuclear Regulatory Commission has issued Facility Operating License No. DPR-74 (enclosed) to Indiana & Michigan Electric Company and Indiana & Michigan Power Company for the Donald C. Cook Nuclear Plant, Unit No. 2 authorizing operation at 3391 megawatts thermal subject to the conditions delineated therein. However, the operation of the facility is temporarily restricted to the sequence of operational modes described in Attachment 1 to the license until the preoperational tests, startup tests and other items noted in Attachment 1 are completed to the written satisfaction of the Commission. A copy of the Notice of Issuance is also enclosed.

The Commission has also issued Supplement No. 7 to the Safety Evaluation Report. Two copies are enclosed for your information and use.

Three signed copies of Amendment 7 to Indemnity Agreement B-61 are enclosed for your review and acceptance. Please have both licensees sign all copies and return one copy to the Division of Project Management.

Sincerely,

Roger S. Boyd, Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosures:
1. License No. DPR-74
2. Federal Register Notice
3. Supplement No. 7 to Safety Evaluation Report
4. Amendment 7 to B-61

ccs w/encls:
See page 2

Indiana & Michigan Electric Company
Indiana & Michigan Power Company

DEC 23 1977

cc: Mr. R. W. Jurgensen
Chief Nuclear Engineer
American Electric Power Service Corporation
2 Broadway
New York, New York 10004

Gerald Charnoff, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20006

Mr. David Dinsmore Comey
Executive Director
Citizens for a Better Environment
59 East Van Buren Street
Chicago, Illinois 60605

Executive Office of the Governor
Division of Intergovernmental Relations
Lewis Cass Building, 2nd Floor
Lansing, Michigan 49813

State Board of Health
ATTN: Director, Bureau of Engraving
1330 West Michigan Street
Indianapolis, Indiana 46206

Mr. Wade Schuler, Supervisor
Lake Township
Baroda, Michigan 49101

Mr. W. Mabry, Mayor
City of Bridgman, Michigan 49106

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Federal Activities Branch
Region V Office
ATTN: EIS Coordinator
230 South Dearborn Street
Chicago, Illinois 60604

Mr. Bruce Blanchard
Environmental Projects Review
U. S. Department of the Interior
Room 4256
18th and C Streets, N. W.
Washington, D. C. 20240

Defense Mapping Agency
Aerospace Center (ADL)
St. Louis Air Force Station
Missouri 63118

Mr. Bert Lindenfeld
Herald-Palladium
Michigan and Oak Streets
Benton Harbor, Michigan 49022

Ms. Rebecca Hanmer
ATTN: Jack Anderson
Office of Federal Activities
Environmental Protection Agency
Room W-535, Waterside Mall
401 M Street, S.W.
Washington, D. C. 20460

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

INDIANA AND MICHIGAN ELECTRIC COMPANY
INDIANA AND MICHIGAN POWER COMPANY

DOCKET NO. 316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

FACILITY OPERATING LICENSE

License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) having found that:

   A. The application for license filed by Indiana and Michigan Electric Company and Indiana and Michigan Power Company (the licensees) 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 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 (facility) has been substantially 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. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   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 rules and regulations of the Commission;

   E. Indiana and Michigan Power Company is technically qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission.

   F. Indiana and Michigan Power Company and Indiana and Michigan Electric Company are financially qualified to engage in activities authorized by this operating license in accordance with the rules and regulations of the Commission;

   G. The licensees have 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 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 Facility Operating License No. DPR-74, subject to the conditions for protection of the environment set forth herein, is in accordance with Appendix D to 10 CFR Part 50 (currently known as 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 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. Facility Operating License No. DPR-74 is hereby issued to the Indiana and Michigan Electric Company and the Indiana and Michigan Power Company to read as follows:

A. This 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 and Michigan Electric Company and the Indiana and Michigan Power Company. The facility is located in Berrien County, Michigan and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 12 through 79) and the Environmental Report as supplemented and amended (Supplements 1 through 4).

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Indiana and Michigan Electric Company and Indiana and Michigan Power Company:

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess and use, and Indiana and Michigan Power Company to operate, the facility at the designated location in Berrien County, Michigan, in accordance with the procedures and limitations set forth in this 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 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 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 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

Indiana and Michigan Power Company is authorized to operate the facility at steady state reactor core power levels not in excess of 3391 megawatts thermal in accordance with the conditions specified herein and in Attachment 1 to this license. The preoperational tests, startup tests and other items identified in Attachment 1 to this license shall be completed. Attachment 1 is an integral part of this license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A attached hereto are hereby incorporated in this license. The Technical Specifications contained in Appendix B to Facility Operating License No. DPR-58 issued on

October 25, 1974 for Donald C. Cook Nuclear Plant, Unit No. 1 (Docket No. 50-315), as revised through Amendment No. 22, also are hereby incorporated in this license. Indiana and Michigan Power Company shall operate the facility in accordance with the Technical Specifications, Appendices A and B.

(3) Additional Conditions

(a) Analysis of Reactor Vessel Supports and Internals

Indiana and Michigan Power Company shall submit by September 30, 1979, an analysis which defines the loads on the reactor coolant system and internals for a postulated break at or very near the cold leg of the reactor pressure vessel nozzle and evaluates: (a) the full restraint capability of the reactor coolant system, (b) the structural capability of the internals, and (c) the safety margins of each. The required analysis shall be performed using the approved hydraulic model referenced in WCAP-8708, "MULTIFLEX, A Fortran IV Computer Program for Analyzing Thermal-Hydraulic Structure System Dynamics." If modifications to the facility are indicated by the results of the analysis, Indiana and Michigan Power Company shall submit them for review and implement them on a schedule acceptable to the Commission.

(b) Steam Generator Subcompartment Pressure Response Analysis

Indiana and Michigan Power Company shall submit prior to Mode 2 operation for Commission review and approval an analysis of short-term steam generator subcompartment pressure response. The analysis shall be performed using the TMD computer code and shall define: (a) the adequacy of the steam generator supports to withstand asymmetric loads resulting from a postulated steamline break within the steam generator subcompartment, and (b) the adequacy of the steam generator enclosure to withstand the calculated pressure differential across the enclosure after a postulated steamline break.

(c) Leak Testing of Emergency Core Cooling System Valves

Indiana and 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) Overpressure Mitigating System

Indiana and Michigan Power Company shall achieve full implementation of its proposed overpressure mitigating system which utilizes power operated relief valves with a low pressure setpoint before twelve effective full power months of operation of the facility.

(e) New Thermal Design Basis/WRB-1 Heat Transfer Correlation

Indiana and Michigan Power Company shall limit the reactor thermal power to 1695 MW_t (50% of maximum rated power) until the Commission has approved the WRB-1 correlation and the Improved Thermal Design Procedure (Westinghouse Topical Reports WCAP-8762 "New Westinghouse Correlation WRB-1 for Predicting Critical Heat Flux in Rod Bundles with Mixing Vane Grids" and WCAP-8567 "Improved Thermal Design Procedure") or until the technical specifications are modified to reflect the results of Commission approved thermal design calculations.

During the period when power operation is limited to 1695 MW_t, the reactor flux trip shall be set to 2035 MW_t (60% of maximum rated power).

(f) Electrical Connectors

Indiana and Michigan Power Company shall replace all safety-related ITT-Cannon electrical connectors in the lower containment with qualified splices prior to Mode 2 operation. This facility modification shall be comparable to the modification made to the Donald C. Cook Nuclear Plant, Unit 1.

(g) Containment Long-Term Temperature and Pressure Response

Indiana and Michigan Power Company shall submit an analysis of the long-term containment temperature and pressure response to a postulated steamline break using the LOTIC-3 computer code within five months of approval by the Commission of the LOTIC-3 code.

(h) Containment Sump Design Verification

Indiana and Michigan Power Company shall complete tests to verify containment sump design before November 1978 and submit the results for Commission review and approval.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

(i) Leak Rate Testing of Containment Isolation Valves

Indiana and Michigan Power Company shall install prior to startup, following the first regularly scheduled refueling outage, test connections to allow Type C leak testing of containment isolation valves. Indiana and Michigan Power Company shall modify the containment isolation valves in the component cooling water system which are identified by and associated with the following containment penetration numbers: CPN 25(1), 25(2), 25(3), 25(4), 72(1), 72(2), 72(3) and 72(4). Indiana and Michigan Power Company shall modify to allow pneumatic leak rate testing the isolation valves identified by and associated with the following containment penetration numbers: CPN 38, 39 and 56.

(j) Power Operation with Fewer Than Four Reactor Coolant Pumps in Operation

Indiana and Michigan Power Company shall not operate the reactor at power levels above P-7 (as defined in Table 3.3-1 of Specification 3.3.1.1 of Appendix A to this 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) Electrical Modification of the Auxiliary Feedwater System

Indiana and Michigan Power Company shall convert prior to startup, following the first regularly scheduled refueling outage, the throttle-stop steam admission valve to the turbine driven auxiliary feedwater pump and the four motor-operator feedwater valves to the steam generators from the turbine driven auxiliary feedwater pump from alternating current to direct current power

(l) Residual Heat Removal System Low Flow Alarm

Indiana and Michigan Power Company shall prior to startup, following the first regularly scheduled refueling outage, develop and submit for Commission review and approval the control logic for an alarm designed to alert the

reactor operator to possible loss of flow in the residual heat removal system. Following initial startup and prior to installation of the alarm, Indiana and Michigan Power Company shall station an operator at a local panel to monitor cooldown flow when the residual heat removal system is in operation and the vessel head is in place.

(m) 600 Volt Containment Power Penetrations

Indiana and Michigan Power Company shall modify the 600 volt containment electrical power penetration circuits to meet the requirements of Regulatory Guide 1.63 prior to startup following the first regularly scheduled refueling outage. This modification consists of the installation of redundant circuit breakers in the 600 volt containment electrical power penetration circuits to protect the penetration seals by a trip of the 600 volt switchgear breakers in the event of a failure of the molded case circuit breakers.

(n) Instrument Trip Setpoints

Indiana and Michigan Power Company shall submit for Commission review within six months of the date of issuance of this operating license the following values for each Reactor Protection System and Engineered Safety Features instrumentation channel:

(a) the technical specification trip setpoint value;

(b) the technical specification allowable value (the technical specification trip setpoint plus the instrument drift assumed in the accident analysis);

(c) the instrument drift assumed to occur during the interval between technical specification surveillance tests;

(d) the components of the cumulative instrument bias; and

(e) the maximum margin between the technical specification trip setpoint and the trip value assumed in the accident analysis.

(o) Fire Protection

Indiana and Michigan Power Company shall prior to startup, following the first regularly scheduled refueling outage, provide for Commission review the following:

(a) results of penetration fire stop testing;

(b) results of testing of control room fire detectors;

(c) details of the implementation of the emergency shutdown system which provides for compliance with the Commission's position that the system shall be capable of performing its function given the loss of offsite power;

(d) a schedule for implementation of changes to the fire protection system;

(e) an update of the Final Safety Analysis Report to include a description of the upgraded fire protection system.

(p) Emergency Planning

Indiana and Michigan Power Company shall submit for Commission review prior to Mode 2 operation all documentation required to support its revised emergency plan.

(q) Qualification of Electrical Equipment

Indiana and Michigan Power Company shall prior to Mode 2 operation make available for Commission review documentation for test procedures used to qualify electrical equipment in the lower containment for steamline break in accordance with 10 CFR Part 50, Appendix B.

(r) Seismic Qualification Review

Indiana and Michigan Power Company shall prior to June 1, 1978 complete the documentation of seismic qualification procedures for safety-related electrical and mechanical equipment.

(s) Diesel Generator Lockout

Indiana and Michigan Power Company shall prior to Mode 1 operation modify the design of the control circuitry for the emergency diesel generators to provide an alarm in the control room to alert the reactor operator should the associated diesel generator become incapable of responding to an emergency start signal due to open knife switches in the control circuitry of the generator.

The licensees shall maintain in effect and fully implement all provisions of the Nuclear Regulatory Commission approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). The approved security plan consists of proprietary documents, collectively titled, "Donald C. Cook Nuclear Plant Industrial Security Manual," with revisions as follows:

	Letter Submittal Date
Original	August 15, 1972
Revisions Dated:	
September 21, 1972	September 21, 1972
January 15, 1973	January 22, 1973
November 16, 1973	November 27, 1973
May 10, 1974	May 24, 1974
October 7, 1974	November 13, 1974
October 2, 1975	November 14, 1975
March 12, 1976	April 5, 1976
September 16, 1976	October 4, 1976
December 3, 1976	December 20, 1976
January 3, 1977	February 3, 1977

In addition the licensees shall fully implement the physical protection commitments of their proprietary letters to the Director, Office of Nuclear Reactor Regulation dated July 2, 1976 and December 13, 1977.

Further, the licensees shall fully comply with the applicable requirements of 10 CFR Part 73 with specific attention to the requirements of 10 CFR Part 73.55 except for any requirement involving construction and installation of equipment not already in place, and shall diligently accomplish the necessary construction and installation of equipment, so as to be able to fully implement the requirements of 10 CFR 73.55 by August 24, 1978.

E. This license is subject to the following additional conditions for the protection of the environment:

(1) The licensees will comply with appropriate water quality standards, in accordance with Federal, State and local regulations (including changes as required by the Federal Water Pollution Control Act Amendments of 1972).

(2) If harmful effects or evidence of unacceptable damage are detected by the monitoring programs, the licensees shall provide to the Commission an analysis of the problem and a plan of action to be taken to eliminate or significantly reduce the detrimental effects or damage.

(3) Before engaging in an operational activity not evaluated by the Commission, the licensees will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than evaluated in the Final Environmental Statement, the licensees shall provide a written evaluation of such activities and obtain prior approval of the Director, Office of Nuclear Reactor Regulation for the activities.

F. In accordance with the requirement imposed by the October 8, 1977 Order of the United States Court of Appeals for the District of Columbia in Natural Resources Defense Council vs. Nuclear Regulatory Commission, No. 74-1385 abd 74-1586 (cert. granted sub nom Vermont Yankee Nuclear Power Corp. vs. Natural Resources Defense Council, 45 U.S.L.W. 3570, February 22, 1977) that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license issued herein shall be subject to the outcome of such proceedings.

G. This license is effective as of the date of issuance and shall expire at midnight, March 25, 2009.

Roger S. Boyd, Director
Division of Project Management
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

Date of Issuance: December 23, 1977

ATTACHMENT TO LICENSE DPR-74

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

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

A. Indiana and Michigan Power 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. Review of licensee's seismic analysis of conduit supports, cable trays and instruments (IE Reports 77-06 and 77-09 - Construction).

2. Replacement of electrical connectors with splices (IE Bulletin 77-05 - Construction).

3. Review of open design changes and deviation reports (IE Report 77-23 - Construction).

4. Review of 50.55(e) report of seismic support of Class IE instruments and tubing (50.55e report dated September 2, 1977 - Construction).

5. Installation of fire barriers on cable trays in cable spreading room below control room. (Construction).

6. Resolution of items identified in special inspection of electrical qualification records for steamline break. (Construction).

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-316

INDIANA AND MICHIGAN ELECTRIC COMPANY
INDIANA AND MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT UNIT NO. 2

NOTICE OF ISSUANCE OF A FACILITY OPERATING LICENSE

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued Facility Operating License No. DPR-74 to Indiana and Michigan Electric Company and Indiana and Michigan Power Company authorizing operation of the Donald C. Cook Nuclear Plant, Unit No. 2 at steady state reactor core power levels not in excess of 3391 megawatts thermal, in accordance with the provisions of the license and the Technical Specifications. However, the facility is temporarily restricted from operating at full rated power until certain tests and other items noted in the license conditions are completed to the written satisfaction of the Commission. The Donald C. Cook Nuclear Plant, Unit No. 2, is a pressurized water nuclear reactor located at the licensees' site in Berrien County, Michigan.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license. The Commission has also made appropriate findings which are set forth in the license regarding the environmental impact associated with operation of the facility. The license also includes the condition that the license is

subject to the outcome of the proceeding in Natural Resources Defense Council vs. NRC (D. C. Circuit) (July 21, 1976), Nos. 74-1385 and 74-1586. The application for the license complies with the standards and requirements of the Act and the Commission's rules and regulations.

The license is effective as of its date of issuance and shall expire on March 25, 2009.

A copy of (1) Facility Operating License No. DPR-74, complete with Technical Specifications (Appendices "A" and "B"); (2) the report of the Advisory Committee on Reactor Safeguards, dated December 13, 1977; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated September 10, 1973 and Supplements 1 through 7 thereto (Supplement No. 7 relates solely to issuance of DPR-74); (4) the Final Safety Analysis Report and amendments thereto; (5) the licensees' Environmental Report dated February 1971 and supplements thereto; (6) the Draft Environmental Statement dated December 1972; (7) the Final Environmental Statement dated August 1973; and (8) Supplement No. 1 to the Final Environmental Statement, dated November 1977 (NUREG-0385) are available for public inspection at the Commission's Public Document Room at 1717 H Street, N. W., Washington, D. C. and the Maude Preston Palenske Memorial Library, 500 Market Street, St. Joseph, Michigan 49085.

A copy of the Safety Evaluation Report and Supplements 1 through 7, the Final Environmental Statement and the license may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management. Copies of Supplement No. 1 to the Final Environmental Statement (Document No. NUREG-0385) may be purchased, at current costs, from the National Technical Information Service, U. S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161.

Dated at Bethesda, Maryland, this 23rd day of December, 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

Karl Kniel, Chief
Light Water Reactors
Branch No. 2
Division of Project Management

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON D. C. 20555

Docket Nos. 50-315
50-316

AMENDMENT TO INDEMNITY AGREEMENT NO. B-61

AMENDMENT NO. 7

Effective DEC 23 1977, Indemnity Agreement No. B-61, between Indiana and Michigan Power Company and Indiana and Michigan Electric Company, and the Atomic Energy Commission, dated May 26, 1972, as amended, is hereby further amended as follows:

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1301	(From 12:01 a.m., May 26, 1972, to 12 midnight, October 24, 1974, inclusive)
DPR-58	(From 12:01 a.m., October 25, 1974)
SNM-1753	(From 12:01 a.m., August 18, 1977, to 12 midnight, [illegible] inclusive)
DPR-74	(From 12:01 a.m., DEC 23 1977)

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Jerome Saltzman, Chief
Antitrust and Indemnity Group
Office of Nuclear Reactor Regulation

Accepted _____, 1977

By _____
INDIANA AND MICHIGAN POWER COMPANY

Accepted _____, 1977

By _____
INDIANA AND MICHIGAN ELECTRIC COMPANY