



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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 229
License No. DPR-58

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated September 14, 1998, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

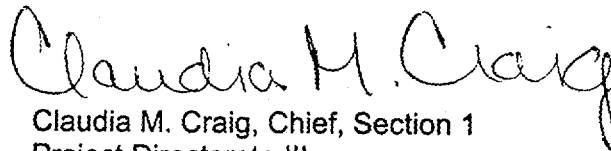
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. DPR-58 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 229, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications..

3. This license amendment is effective as of the date of issuance, with full implementation within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: October 21, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 229

TO FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

3/4 5-6

B 3/4 5-2

INSERT

3/4 5-6

B 3/4 5-2

3/4 **LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS**
 3/4.5 **EMERGENCY CORE COOLING SYSTEMS (ECCS)**

SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

<u>Boron Injection Throttle Valves</u>	<u>Safety Injection Throttle Valves</u>
Valve Number	Valve Number
1. 1-SI-141 L1	1. 1-SI-121 N
2. 1-SI-141 L2	2. 1-SI-121 S
3. 1-SI-141 L3	
4. 1-SI-141 L4	

h. By performing a flow balance test during shutdown following completion of modifications to the ECCS subsystem that alter the subsystem flow characteristics and verifying the following flow rates:

<u>Boron Injection System Single Pump*</u>	<u>Safety Injection System Single Pump**</u>
Loop 1 Boron Injection Flow 117.5 gpm	Loop 1 and 4 Cold Leg Flow \geq 300 gpm
Loop 2 Boron Injection Flow 117.5 gpm	Loop 2 and 3 Cold Leg Flow \geq 300 gpm
Loop 3 Boron Injection Flow 117.5 gpm	**Combined Loop 1, 2, 3 and 4 Cold Leg Flow (single pump) less than or equal to 640 gpm. Total SIS (single pump) flow, including miniflow, shall not exceed 675 gpm unless the pump is specifically qualified to a higher flow up to a maximum of 700 gpm.
Loop 4 Boron Injection Flow 117.5 gpm	

*The flow rate in each Boron Injection (BI) line should be adjusted to provide 117.5 gpm (nominal) flow in each loop. Under these conditions there is zero miniflow and 80 gpm plus or minus 5 gpm simulated RCP seal injection line flow.

The actual flow in each BI line may deviate from the nominal so long as:

- a) the difference between the highest and lowest flow is 25 gpm or less.
- b) the total flow to the four branch lines does not exceed 470 gpm.
- c) the minimum flow (total flow) through the three most conservative (lowest flow) branch lines must not be less than 300 gpm.
- d) the charging pump discharge resistance ($2.31 \times P_d/Q_d^2$) must not be less than $4.73E-3$ ft/gpm² and must not be greater than $9.27E-3$ ft/gpm², (P_d is the pump discharge pressure at runout; Q_d is the total pump flow rate.)

3/4 BASES

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS (Continued)

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 152°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration*, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

* Observing these limits while flow balancing the SI pumps in the injection mode will ensure they are not exceeded in the recirculation mode (RHR pumps provide a suction pressure boost) due to the higher system resistance resulting from splitting of the SI trains when in the recirculation lineup.



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INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 212
License No. DPR-74

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated September 14, 1998, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.


2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-74 is hereby amended to read as follows:

- (2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 212, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance, with full implementation within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION



Claudia M. Craig, Chief, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: October 21, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 212

FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NO. 50-316

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE

3/4 5-6

B 3/4 5-2

INSERT

3/4 5-6

B 3/4 5-2

SURVEILLANCE REQUIREMENTS (Continued)

2. At least once per 18 months.

Boron Injection
Throttle Valves

Valve Number

1. 2-SI-141 L1
2. 2-SI-141 L2
3. 2-SI-141 L3
4. 2-SI-141 L4

Safety Injection
Throttle Valves

Valve Number

1. 2-SI-121 N
2. 2-SI-121 S

h. By performing a flow balance test during shutdown following completion of modifications to the ECCS subsystem that alter the subsystem flow characteristics and verifying the following flow rates:

<u>Boron Injection System Single Pump</u>	<u>Safety Injection System Single Pump**</u>
Loop 1 Boron Injection Flow 117.5 gpm	Loop 1 and 4 Cold Leg Flow greater than or equal to 300 gpm
Loop 2 Boron Injection Flow 117.5 gpm	Loop 2 and 3 Cold Leg Flow greater than or equal to 300 gpm
Loop 3 Boron Injection Flow 117.5 gpm	** Combined Loop 1,2,3 and 4 Cold Leg Flow (single pump) less than or equal to 640 gpm.
Loop 4 Boron Injection Flow 117.5 gpm	Total SIS (single pump) flow, including miniflow, shall not exceed 675 gpm unless the pump is specifically qualified to a higher flow up to a maximum of 700 gpm.

* The flow rate in each boron injection (BI) line should be adjusted to provide 117.5 gpm (nominal) flow into each loop. Under these conditions there is zero mini-flow and 80 gpm plus or minus 5 gpm simulated RCP seal injection line flow. The actual flow in each BI line may deviate from the nominal so long as:

- a) the difference between the highest and lowest flow is 25 gpm or less.
- b) the total flow to the four branch lines does not exceed 470 gpm.
- c) the minimum flow through the three most conservative (lowest flow) branch lines must not be less than 300 gpm,
- d) the charging pump discharge resistance ($2.31 \cdot P_d / Q_d^2$) must not be less than $4.73E-3 \text{ ft/gpm}^2$ and must not be greater than $9.27E-3 \text{ ft/gpm}^2$, (P_d is the pump discharge pressure at runout; Q_d is the total pump flow rate).

3/4 BASES

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 and 3/4.5.3 ECCS SUBSYSTEMS (Continued)

With the RCS temperature below 350°F, one OPERABLE ECCS subsystem is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the limited core cooling requirements.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 152°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that at a minimum, the assumptions used in the safety analysis are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration,* (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analysis, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analysis.

* Observing these limits while flow balancing the SI pumps in the injection mode will ensure they are not exceeded in the recirculation mode (RHR pumps providing a suction pressure boost) due to the higher system resistance resulting from splitting of the SI trains when in the recirculation lineup.