

June 28, 1990

Docket Nos. 50-315  
and 50-316

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Mr. Milton P. Alexich, Vice President  
Indiana Michigan Power Company  
c/o American Electric Power Service Corporation  
1 Riverside Plaza  
Columbus, Ohio 43216

Dear Mr. Alexich:

SUBJECT: AMENDMENT NOS. 140AND127TO FACILITY OPERATING LICENSE NOS. DPR-58  
AND DPR-74: (TAC NOS. 75036 AND 75037)

The Commission has issued the enclosed Amendment No.140 to Facility Operating License No. DPR-58 and Amendment No.127 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your application dated January 27, 1986 and supplemented on December 21, 1988.

These amendments allow the modification of the reactor protection system to change the logic for the reactor coolant pump breaker position above permissive P-8 from one out of four breakers open to two out of four breakers open.

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

Sincerely,

/s/

Joseph Gitter, Project Manager  
Project Directorate III-1  
Division of Reactor Projects - III,  
IV, V & Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 140 to DPR-58
2. Amendment No. 127 to DPR-74
3. Safety Evaluation

cc w/enclosures:  
See next page

LA/PD31:DRSP  
MRShuttleworth  
/ /90

PM/PD31:DRSP  
JGitter  
5/7/90

(A)D/PD31:DRSP  
DDIanni  
5/7/90

OGC  
S. E. Turk  
5/16/90

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

June 28, 1990

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and 50-316

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Indiana Michigan Power Company  
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1 Riverside Plaza  
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Sincerely,

A handwritten signature in cursive script that reads "Joseph Gitter".

Joseph Gitter, Project Manager  
Project Directorate III-1  
Division of Reactor Projects - III,  
IV, V & Special Projects  
Office of Nuclear Reactor Regulation

Enclosures:

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2. Amendment No. 127 to DPR-74
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cc w/enclosures:  
See next page

Mr. Milton Alexich  
Indiana Michigan Power Company

Donald C. Cook Nuclear Plant

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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 140  
License No. DPR-58

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated January 27, 1986 and supplemented on December 21, 1988, 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.

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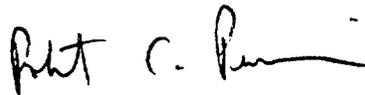
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-58 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 140, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert C. Pierson, Acting Director  
Project Directorate III-1  
Division of Reactor Projects - III,  
IV, V & Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 28, 1990

ATTACHMENT TO LICENSE AMENDMENT NO.

FACILITY OPERATING LICENSE NO. DPR-58

DOCKET NO. 50-315

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE

3/4 3-5

3/4 3-8

B 2-7

INSERT

3/4 3-5

3/4 3-8

B 2-7

TABLE 3.3-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
16. Undervoltage-Reactor Coolant Pumps	4-1/bus	2	3	1	6 <sup>#</sup>
17. Underfrequency-Reactor Coolant Pumps	4-1/bus	2	3	1	6 <sup>#</sup>
18. Turbine Trip					
A. Low Fluid Oil Pressure	3	2	2	1	7 <sup>#</sup>
B. Turbine Stop Valve Closure	4	4	4	1	7 <sup>#</sup>
19. Safety Injection Input from ESF	2	1	2	1, 2	1
20. Reactor Coolant Pump Breaker Position Trip					
Above P-7	1/breaker	2	1/breaker per operating loop	1	11
21. Reactor Trip Breakers	2	1	2	1, 2 3*, 4*, 5*	1, 13 14
22. Automatic Trip Logic	2	1	2	1, 2 3*, 4*, 5*	1 14

## LIMITING SAFETY SYSTEM SETTINGS

### BASES

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#### Undervoltage and Underfrequency - Reactor Coolant Pump Busses

The Undervoltage and Underfrequency Reactor Coolant Pump bus trips provide reactor core protection against DNB as a result of loss of voltage or underfrequency to more than one reactor coolant pump. The specified set points assure a reactor trip signal is generated before the low flow trip set point is reached. A 0.1 second time delay is incorporated in each of these trips to prevent spurious reactor trips from momentary electrical power transients.

#### Turbine Trip

A Turbine Trip causes a direct reactor trip when operating above P-7. Each of the turbine trips provide turbine protection and reduce the severity of the ensuing transient. No credit was taken in the accident analyses for operation of these trips. Their functional capability at the specified trip settings is required to enhance the overall reliability of the Reactor Protection System.

#### Safety Injection Input from ESF

If a reactor trip has not already been generated by the reactor protective instrumentation, the ESF automatic actuation logic channels will initiate a reactor trip upon any signal which initiates a safety injection. This trip is provided to protect the core in the event of a LOCA. The ESF instrumentation channels which initiate a safety injection signal are shown in Table 3.3-3.

#### Reactor Coolant Pump Breaker Position Trip

The Reactor Coolant Pump Breaker Position Trip is an anticipatory trip which provides reactor core protection against DNB resulting from the opening of two or more pump breakers above P-7. This trip is blocked below P-7. The open/close position trip assures a reactor trip signal is generated before the low flow trip setpoint is reached. No credit was taken in the accident analyses for operation of this trip. The functional capability at the open/close position settings is required to enhance the overall reliability of the Reactor Protection System.

TABLE 3.3-1 (Continued)

- ACTION 8 - (Deleted.)
- ACTION 9 - (Deleted.)
- ACTION 10 - (Deleted.)
- ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hour.
- ACTION 12 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.
- ACTION 13 - With one of the diverse trip features (Undervoltage or shunt trip attachment) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and apply ACTION 1. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.
- ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

REACTOR TRIP SYSTEM INTERLOCKS

<u>DESIGNATION</u>	<u>CONDITION AND SETPOINT</u>	<u>FUNCTION</u>
P-6	With 2 of 2 Intermediate Range Neutron Flux Channels less than $6 \times 10^{-11}$ amps.	P-6 prevents or defeats the manual block of source range reactor trip.



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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 127  
License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Indiana Michigan Power Company (the licensee) dated January 27, 1986 and supplemented on December 21, 1988, 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.

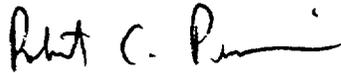
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-74 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 127, 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 its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert C. Pierson, Acting Director  
Project Directorate III-1  
Division of Reactor Projects - III,  
IV, V & Special Projects  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: June 28, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 127

FACILITY OPERATING LICENSE NO. DPR-74

DOCKET NO. 50-316

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the attached pages. The revised pages are identified by amendment number and contain marginal lines indicating the area of change.

REMOVE

3/4 3-4

3/4 3-7

B 2-8

INSERT

3/4 3-4

3/4 3-7

B 2-8



TABLE 3.3-1 (Continued)  
 REACTOR TRIP SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
16. Undervoltage-Reactor Coolant Pumps	4-1/bus	2	3	1	6 #
17. Underfrequency-Reactor Coolant Pumps	4-1/bus	2	3	1	6 #
18. Turbine Trip					7 #
A. Low Fluid Oil Pressure	3	2	2	1	
B. Turbine Stop Valve Closure	4	4	3	1	6 #
19. Safety Injection Input from ESF	2	1	2	1, 2	1
20. Reactor Coolant Pump Breaker Position Trip					11
Above P-7	1/breaker	2	1/breaker per operat- ing loop	1	
21. Reactor Trip Breakers	2	1	2	1, 2, 3*, 4*, 5*	1, 13, 14
22. Automatic Trip Logic	2	1	2	1, 2, 3*, 4*, 5*	1, 14

TABLE 3.3-1 (Continued)

- ACTION 11 - With less than the Minimum Number of Channels OPERABLE, operation may continue provided the inoperable channel is placed in the tripped condition within 1 hours.
- ACTION 12 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours and/or open the reactor trip breakers.
- ACTION 13 - With one of the diverse trip features (Undervoltage or shunt trip attachment) inoperable, restore it to OPERABLE status within 48 hours or declare the breaker inoperable and apply ACTION 1. The breaker shall not be bypassed while one of the diverse trip features is inoperable except for the time required for performing maintenance to restore the breaker to OPERABLE status.
- ACTION 14 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or open the reactor trip breakers within the next hour.

REACTOR TRIP SYSTEM INTERLOCKS

<u>DESIGNATION</u>	<u>CONDITION AND SETPOINT</u>	<u>FUNCTION</u>
P-6	With 2 of 2 Intermediate Range Neutron Flux Channels $< 6 \times 10^{-11}$ amps.	P-6 prevents or defeats the manual block of source range reactor trip.

## 2.2 LIMITING SAFETY SYSTEM SETTINGS

### BASES

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#### Safety Injection Input from ESF

If a reactor trip has not already been generated by the reactor protective instrumentation, the ESF automatic actuation logic channels will initiate a reactor trip upon any signal which initiates a safety injection. This trip is provided to protect the core in the event of a LOCA. The ESF instrumentation channels which initiate a safety injection signal are shown in Table 3.3-3.

#### Reactor Coolant Pump Breaker Position Trip

The Reactor Coolant Pump Breaker Position Trip is an anticipatory trip which provides reactor core protection against DNB resulting from the opening of two or more pump breakers above P-7. This trip is blocked below P-7. The open/close position trip assures a reactor trip signal is generated before the low flow trip setpoint is reached. No credit was taken in the accident analyses for operation of this trip. The functional capability at the open/close position settings is required to enhance the overall reliability of the Reactor Protection System.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO.140 TO FACILITY OPERATING LICENSE NO. DPR-58  
AND AMENDMENT NO.127 TO FACILITY OPERATING LICENSE NO. DPR-74  
INDIANA MICHIGAN POWER COMPANY  
DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By letter dated January 27, 1986, Indiana Michigan Power Company (IMPC) proposed changes to D. C. Cook Units 1 and 2 Technical Specifications (TS). In the D. C. Cook design, the reactor coolant pump (RCP) breaker position provides an anticipatory reactor trip for low flow in one loop in a one out of four trip logic. The proposed modification changes the one out of four above P-8 (permissive above 35% reactor power) to a two out of four logic for all power levels above the P-7 set point (permissive above 10% reactor power). This logic change is to avoid spurious reactor trip on false signal from a single RCP breaker auxiliary contact. On staff's request, IMPC provided additional information in a letter dated December 21, 1988, which included review of the change and evaluation of staff's concerns by Westinghouse.

2.0 EVALUATION

The Westinghouse standard design of the reactor protection system (RPS) includes anticipatory reactor trips for RCP power supply underfrequency, undervoltage, and the RCP circuit breaker open position. These anticipatory reactor trips are provided for impending loss of reactor coolant flow and intended to enhance the overall reliability of the RPS. The low flow reactor trip is the design protection provided by three redundant channels for each loop. Above P-8, the loss of flow in any loop, as sensed by two out of three channels, actuates a reactor trip. The proposed deletion of reactor trip for one out of four RCP breaker open logic above P-8, only removes one of the three anticipatory trips in any loop. The remaining two anticipatory trips (undervoltage and underfrequency) will adequately provide the required protection before the low flow trip is actuated in any one of the loops. Additionally, no credit is taken for the reactor trips on a single RCP breaker position above P-8 in any accident analysis for D. C. Cook Units 1 and 2.

The proposed change will incorporate a two out of four RCP breaker open logic as an anticipatory reactor trip. This modification is provided as a standard feature or as a retrofit option for all Westinghouse PWR units. The change will remove this potential source of spurious trip due to a single failure and

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provide a reduction in undue challenges to the RPS. The proposed modification affects only the coincident logic of RPS and does not degrade either its performance or conformance to system functional requirements. The staff agrees with the Westinghouse conclusion that the diversity and redundancy of RPS will be maintained for the single loop loss of flow event.

The proposed changes to the Technical Specifications correctly reflect the coincident logic change and the bases section of the proposed changes provides an acceptable basis for the new logic and functional requirements.

Based on the above evaluation, the staff concludes that the proposed modification of RCP breaker position trip logic in RPS is acceptable. Additionally, the proposed changes to the Technical Specifications do not involve an unreviewed safety question and are also acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes in a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change in a surveillance requirement. We have determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

### 4.0 CONCLUSION

We have concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: June 28, 1990

Principal Contributor: I. Ahmed, NRR/SICB