March 6, 1995

Mr. E. E. Fitzpatrick, Vice President
Indiana Michigan Power Company
c/o American Electric Power Service Corporation
1 Riverside Plaza
Columbus, OH 43215

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT NOS. 1 AND 2 - ISSUANCE OF AMENDMENTS RE: PRESSURIZER SAFETY VALVE POSITION INDICATOR ACOUSTIC MONITOR (TAC NOS. M84831 AND M84832)

Dear Mr. Fitzpatrick:

The Commission has issued the enclosed Amendment No.191 to Facility Operating License No. DPR-58 and Amendment No. 177 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated August 12, 1992, as supplemented April 12, 1993.

The amendments change the minimum channels operable for the pressurizer safety valve position indicator acoustic monitor to two out of three total from one per valve. The amendments also delete footnotes which are no longer applicable.

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,

ORIGINAL SIGNED BY

John B. Hickman, Project Manager
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosures: 1. Amendment No. 191 to DPR-58
2. Amendment No. 177 to DPR-74
3. Safety Evaluation

cc w/encls: See next page

DOCUMENT NAME: G:\WPDOCS\DCCOOK\C084831.AMD

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|---|---|---|---|---|---|---|---|---|---|---|
| NAME | CJamerson | | JHickman | | JWermiel | | Suttal | | JHannon | |
| DATE | 2/2/95 | | 2/2/95 | | 2/7/95 | | 2/23/95 | | 3/4/95 | |

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DATED: March 6, 1995

AMENDMENT NO. 191TO FACILITY OPERATING LICENSE NO. DPR-58-D. C. COOK-UNIT 1
AMENDMENT NO. 177TO FACILITY OPERATING LICENSE NO. DPR-74-D. C. COOK-UNIT 2

Docket File
PUBLIC
PDIII-1 Reading
J. Roe
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cc: Plant Service list

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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 191
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 August 12, 1992 as supplemented April 12, 1993, 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. 191, 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 180 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Cynthia A Carpenter Sr

John N. Hannon, Director
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 6, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 191

TO 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 vertical lines indicating the area of change.

| REMOVE | INSERT |
|---|---|
| 3/4 3-55 | 3/4 3-55 |

TABLE 3.3-11
POST-ACCIDENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE |
|---|---|
| 1. Containment Pressure | 2 |
| 2. Reactor Coolant Outlet Temperature- $T_{HOT}$ (Wide Range) | 2 |
| 3. Reactor Coolant Inlet Temperature- $T_{COLD}$ (Wide Range) | 2 |
| 4. Reactor Coolant Pressure-Wide Range | 2 |
| 5. Pressurizer Water Level | 2 |
| 6. Steam Line Pressure | 2/Steam Generator |
| 7. Steam Generator Water Level- Narrow Range | 1/Steam Generator |
| 8. Refueling Water Storage Tank Water Level | 2 |
| 9. Boric Acid Tank Solution Level | 1 |
| 10. Auxiliary Feedwater Flow Rate | 1/Steam Generator* |
| 11. Reactor Coolant System Subcooling Margin Monitor | 1** |
| 12. PORV Position Indicator -- Limit Switches*** | 1/Valve |
| 13. PORV Block Valve Position Indicator -- Limit Switches | 1/Valve |
| 14. Safety Valve Position Indicator -- Acoustic Monitor | 2 Out of 3 Total |
| 15. Incore Thermocouples (Core Exit Thermocouples) | 2/Core Quadrant |
| 16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication) | One Train (3 Channels/Train) |
| 17. Containment Sump Level | 1 |
| 18. Containment Water Level | 2 |

* Steam Generator Water Level Channels can be used as a substitute for the corresponding auxiliary feedwater flow rate channel instrument.

** PPC subcooling margin readout can be used as a substitute for the subcooling monitor instrument.

*** Acoustic monitoring of PORV position (1 channel per three valves - headered discharge) can be used as a substitute for the PORV Indicator - Limit Switches instruments.

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

INDIANA MICHIGAN POWER COMPANY

DOCKET NO. 50-316

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 177
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 August 12, 1992 as supplemented April 12, 1993, 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:

   Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 177 , 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 180 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Cynthia A Carpenter for

John N. Hannon, Director
Project Directorate III-1
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: March 6, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 177

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 vertical lines indicating the area of change.

| REMOVE | INSERT |
|---|---|
| 3/4 3-46 | 3/4 3-46 |

TABLE 3.3-10

POST-ACCIDENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE |
|---|---|
| 1. Containment Pressure | 2 |
| 2. Reactor Coolant Outlet Temperature - $T_{HOT}$ (Wide Range) | 2 |
| 3. Reactor Coolant Inlet Temperature - $T_{COLD}$ (Wide Range) | 2 |
| 4. Reactor Coolant Pressure - Wide Range | 2 |
| 5. Pressurizer Water Level | 2 |
| 6. Steam Line Pressure | 2/Steam Generator |
| 7. Steam Generator Water Level - Narrow Range | 1/Steam Generator |
| 8. Refueling Water Storage Tank Water Level | 2 |
| 9. Boric Acid Tank Solution Level | 1 |
| 10. Auxiliary Feedwater Flow Rate | 1/Steam Generator* |
| 11. Reactor Coolant System subcooling Margin Monitor | 1** |
| 12. PORV Position Indicator - Limit Switches*** | 1/Valve |
| 13. PORV Block Valve Position Indicator - Limit Switches | 1/Valve |
| 14. Safety Valve Position Indicator - Acoustic Monitor | 2 Out of 3 Total |
| 15. Incore Thermocouples (Core Exit Thermocouples) | 2/Core Quadrant |
| 16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication) | One Train (3 Channels/Train) |
| 17. Containment Sump Level | 1 |
| 18. Containment Water Level | 2 |

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* Steam Generator Water Level Channels can be used as a substitute for the corresponding auxiliary feedwater flow rate channel instrument.

** PPC subcooling margin readout can be used as a substitute for the subcooling monitor instrument.

*** Acoustic monitoring of PORV position (1 channel per three valves - headered discharge) can be used as a substitute for the PORV Indicator - Limit Switches instruments.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 191 TO FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO. 177 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 August 12, 1992 and supplemented April 12, 1993, the Indiana Michigan Power Company (the licensee) requested amendments to the Technical Specifications (TS) appended to Facility Operating License Nos. DPR-58 and DPR-74 for the Donald C. Cook Nuclear Plant, Unit Nos. 1 and 2. The proposed amendments would change the minimum channels operable for the pressurizer safety valve position indicator acoustic monitor to two out of three total from one per valve. The amendments would also delete certain footnotes which are no longer applicable.

## 2.0 EVALUATION

The D. C. Cook Nuclear Plant reactor coolant system is protected against overpressurization by control and protective circuits such as the pressurizer pressure high reactor trip and by the three power-operated relief and three safety valves connected to the top of the pressurizer. Upon opening, these valves discharge steam into the pressurizer relief tank which condenses and collects the valve effluent.

The purpose of the pressurizer safety valve acoustic monitor is to provide the operator with information regarding safety valve position. Two independent monitoring systems exist that alert the operator to the passage of steam from the safety valves due to valve lift. An acoustic flow monitor on the discharge of each safety valve detects acoustic vibrations generated from the steam flowing through the valve, and actuates an alarm in the control room. Due to the magnitude of the acoustic vibrations and the sensitivity of the instrumentation, all three monitors were added to meet the requirements of NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations," and NUREG-0737, "Clarification of TMI Action Plan Requirements," and are environmentally qualified, unlike the downstream temperature sensors.

During normal operation the acoustic monitors are not used to detect valve leakage. A temperature sensor downstream of the acoustic sensor generates a

signal that actuates a control room alarm when a temperature increase is experienced in the line, as would be the case if the valve released steam.

The licensee utilizes the temperature sensor installed downstream of the affected pressurizer safety valve as backup indication of flow through this valve. This sensor provides indication and alarm in the control room and on the plant computer. The licensee's experience has shown that these sensors perform effectively to detect leakage.

In addition, licensee experience has also shown that when one of the pressurizer safety valves opens, all three safety valve acoustic leak detection channels are actuated. This is caused by the sensitivity of the accelerometers and the fact that the three safety valves and their associated acoustic monitor sensors are in close proximity to each other. If the safety valve associated with the inoperable valve position acoustic monitor channel discharges, the remaining two valve acoustic monitor channels would alert the operator. Further the safety valve discharges into the pressurizer relief tank. The temperature, pressure, and liquid level of the tank are indicated and alarmed in the control room. A change in these parameters would alarm and alert the operator of a safety valve discharge condition. Also, when a pressurizer safety valve lifts, it can be heard in the control room, and would therefore alert the operators.

In a conference call with the NRC staff on January 27, 1992, the licensee confirmed that the electronics of the acoustic monitors are sufficiently independent to allow isolation of the affected acoustic monitor without affecting the remaining operable acoustic monitors. The licensee also committed in that call to perform appropriate surveillance, i.e., channel check to determine functionality at an appropriate frequency.

The licensee also conducted a review of emergency and abnormal procedures which reference the acoustic monitors. In an emergency situation, the operator does not use a signal from the pressurizer safety valve position indicator acoustic monitors as an action initiator. The operator responds to other indications of loss of reactor coolant inventory. As the operator does not have direct control of the pressurizer safety valve, "where" the loss of inventory is occurring is of less importance than compensating for the loss of inventory. In addition, the Cook Nuclear Plant emergency operating procedures do not reference the pressurizer safety valve position indicator acoustic monitors.

Finally, the safety valve position indication is considered Type D, Category 2 instrumentation and is not required to be incorporated in the Post-Accident Monitoring TS at all. The listing of the safety valve position indication was deleted from the *improved* "Standard Technical Specifications Westinghouse Plants," NUREG-1431, issued September 1992.

The licensee's proposed amendments would change the minimum channels operable for the pressurizer safety valve position indicator acoustic monitor to two out of three total from one per valve. Based on the above discussions regarding the existence of backup instrumentation and the staff position that these instruments are not required to be included in the TS, the staff finds the proposed TS change to be acceptable.

The licensee also proposed the deletion of the "*****" footnote for the "Safety Valve Position Indicator -- Acoustic Monitor" TS. The "*****" footnote provided a one time exemption for one acoustic monitor for a specific operating cycle. This footnote was previously deleted by amendments 186 and 172 for Units 1 and 2, respectively.

## 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendments. The State official had no comments.

## 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change the requirements with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has 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 the amendments involve no significant hazards consideration and there has been no public comment on such finding (60 FR 6302). Accordingly, the 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 the amendments.

## 5.0 CONCLUSION

The staff has 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.

Principal Contributor: J. Hickman

Date: March 6, 1995