Docket No. 50-315

February 3, 1992

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

Dear Mr. Fitzpatrick:

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT 1 - AMENDMENT NO. 161 TO FACILITY OPERATING LICENSE NO. DPR-58 (TAC NO. M82659)

The Commission has issued the enclosed Amendment No. 161 to Facility Operating License No. DPR-58 for the Donald C. Cook Nuclear Plant, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application dated January 22, 1992.

This amendment modifies Technical Specification (TS) 3.3.3.8 to allow the pressurizer safety valve position indicator acoustic monitor QR-107A (Instrument 14 in Table 3.3-11) to be exempt from the Table 3.3-11 requirements until the end of the current fuel cycle which is anticipated to end in June 1992. Currently, the TS allows the monitor to be inoperable for 30 days. The monitor was declared inoperable on January 6, 1992. This amendment is being treated as an emergency TS change in accordance with 10 CFR 50.91(a)(5).

This emergency request is similar to the proposal reviewed and approved by the NRC staff on December 23, 1991 where a similar acoustic monitor went out of service on Unit 2.

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 Stang, Project Manager
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 161 to DPR-58
2. Safety Evaluation

cc w/enclosures:
See next page

OFC	:LA:PDIII-1	:PM:PDIII-1	:SICB	:D:PDIII-1	:OGC
NAME	:MShuttleworth	:JStang:jkd	:SNewberry	:LMarsh	:SCutter
DATE	:1/30/92	:1/30/92	:2/3/92	:2/3/92	:2/3/92

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DATED: February 3, 1992

AMENDMENT NO. 161 TO FACILITY OPERATING LICENSE NO. DRP-58-D. C. COOK

Docket File
NRC & Local PDRs
PDIII-1 Reading
D.C. Cook Plant File
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L. Marsh
P. Shuttleworth
J. Stang
OGC-WF
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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. 161
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 22, 1992, 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. 161 , 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

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 3, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 161

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	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	1/Valve*****
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.

** PRODAC 250 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.

**** The requirements for these instruments will become effective after the level transmitters are modified or replaced and become operational. The schedule for modification or replacement of the transmitters is described in the Bases.

***** Pressurizer safety valve (SV-45A) position indicator acoustic monitor QR-107A is exempted from the above requirements until the end of Cycle 12.

Amendment No. ~~106~~, ~~112~~ (Effective before start up following the refueling outage currently scheduled in 2/89).

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 161 TO FACILITY OPERATING LICENSE NO. DPR-58

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 1

DOCKET NO. 50-315

1.0 INTRODUCTION

By letter dated January 22, 1992, the Indiana Michigan Power Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-58 for the Donald C. Cook Nuclear Plant, Unit No. 1. The proposed amendment would modify TS 3.3.3.8 to allow pressurizer safety valve position indicator acoustic monitor QR-107A (Instrument 14 in Table 3.3-11) to be exempted from Table 3.3-11 requirements until the end of the current fuel cycle, which is anticipated to be June 1992. Currently, the TS only allow this monitor to be inoperable for 30 days, with a subsequent action to be in hot shutdown within the next 12 hours. As a result of a monthly surveillance test conducted January 6, 1992 and the following analysis of the surveillance data on January 17, 1991, the licensee declared the monitor inoperable and entered the TS action statement, retroactive to January 6, 1992. Despite their troubleshooting efforts, the licensee has remained in the action statement. This 30-day period expires February 5, 1992 at 1700 hours. Due to insufficient time to allow for 30-day notice in the Federal Register, the licensee has submitted this change as an emergency TS change request.

The emergency TS relief requested by the licensee is similar to a request reviewed and approved by the staff for Unit 2 in December 1991. The licensee will be performing a detailed root cause analysis and design review of the acoustic monitoring system during the upcoming Unit 2 outage in February 1992.

2.0 EVALUATION

The D. C. Cook Nuclear Plant, Unit 1, 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 will sense when one of the pressurizer safety valves lifts. The acoustic 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 plans to utilize 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.

The system in Unit 1 has 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 valves discharge 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.

If the affected safety valve were to lift, the sensitivity of the remaining operable acoustic monitors is sufficient to detect any substantial flow through the affected safety valve discharge line.

In a conference call 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. Additionally, the licensee committed to review all emergency and abnormal procedures and instructions which may reference the affected acoustic monitor and revise them as necessary to properly reflect the use or reference to the backup instrumentation which will be used. In response to concerns that the temperature sensor downstream of the pressurizer safety valves may not receive routine surveillance to verify operability, the licensee committed to perform appropriate surveillance, i.e., channel check to determine functionality and an appropriate frequency.

The licensee's proposed Technical Specification change request has the impact of extending the allowable outage time for the acoustic monitor position indication for one of three pressurizer safety valves from one month to approximately five and one-half months. Based on the above discussions regarding the existence of backup instrumentation and the licensee's commitments to modify procedures as necessary and perform surveillance on backup instrumentation, the staff finds the proposed Technical Specification change to be acceptable.

3.0 EMERGENCY CIRCUMSTANCES

In its letter dated January 22, 1992, the licensee indicated that unless this proposed change were approved, they would at 1700 on February 5, 1991 exceed the action statement time limit for this component and be required to be in hot shutdown within the following 12 hours. The licensee indicated that their troubleshooting efforts have conclusively proven that the cause of the erratic operation with the acoustic monitor is not any of the components located in the control room. The cause is believed to be the charge converter located in the pressurizer doghouse. The only portion of the instrumentation that has not been conclusively tested is the in-containment hardware (accelerometer, charge converter and cabling).

Since access to the suspect components is not possible at power, the licensee would otherwise be required to shutdown at the end of the 30-day allowable outage time for this equipment, which would then allow them to enter containment and repair the affected components. Hence, there is not time to publish Notice of Consideration in the Federal Register.

The licensee has also, in accordance with 10 CFR 50.91(a)(5), provided information that the need for the emergency arose as a result of the declaration of inoperability and entry into a 30-day allowable outage time which occurred on January 6, 1991. Subsequent troubleshooting efforts to confirm that repairs could not be finished at power were only recently completed. Thus, the need for the emergency change could not have been avoided.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the amendment, would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

(3) Involve a significant reduction in a margin of safety.

The proposed changes do not involve a significant hazards consideration because the operation of Donald C. Cook, Unit 1 in accordance with these changes would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

Although the proposed exemption results in the operator having one less source of information on plant status, it does not create a significant increase in the probability or consequences of an accident previously evaluated. Acoustic monitor QR-107A does not perform a function vital to safe shutdown or to the isolation of the reactor or

the reactor coolant system pressure boundary. These monitors were added to meet the requirements of NUREG-0578 and NUREG-0737. Other instrumentation exists that provides the operator with indication of safety valve actuation. In addition, the subject acoustic monitor being inoperable will not result in an uncontrolled release of radiation to the environment and will not initiate an accident.

(2) Create the possibility of new or different kind of accident from any accident previously evaluated.

As previously stated, the purpose of the acoustic monitor is to provide the operator with information regarding safety valve position that may assist in the mitigation of the consequences of an accident. However, the operator has other mechanisms for obtaining equivalent information. In addition, the signals generated by this monitor do not initiate any other equipment actuation, nor will its inoperability initiate any accident. Consequently, the proposed TS change does not create the possibility of a new or different kind of accident from any previously evaluated.

(3) Involve a significant reduction in a margin of safety.

The proposed change results in the operator having one less source of information on plant status. Consequently, the margin of safety is reduced slightly. However, this reduction in safety is not significant for several reasons. First, the operator is provided with other viable flow detection devices to determine safety valve position, i.e., the temperature sensor on the discharge line, and pressurizer relief tank level, temperature, and pressure indications. In addition, previous experience with an identical system in Cook Nuclear Plant Unit 2 has shown that, when one of the pressurizer safety valves open, the other two safety valve acoustic monitor channels are actuated. The operators will also be aware of a safety valve opening, since it can be heard in the control room.

Accordingly, the Commission has determined that this amendment to Facility Operating License No. DPR-58 involves no significant hazards consideration.

5.0 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.

6.0 ENVIRONMENTAL CONSIDERATION

This amendment changes 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 or changes in surveillance requirements. 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 made a final determination that this amendment involves no significant hazards consideration. Accordingly, this amendment meets 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 this amendment.

7.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Stang

Date: February 3, 1992