

August 23, 2001

Mr. Robert P. Powers, Senior Vice President
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SUBJECT: DONALD C. COOK NUCLEAR PLANT, UNIT 2 - ISSUANCE OF AMENDMENT
(TAC NOS. MA9870 AND MA9871)

Dear Mr. Powers:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 137 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Unit 2. The amendment approves a change in the Updated Final Safety Analysis Report (UFSAR) in response to your application dated September 1, 2000.

The amendment approves a change to the UFSAR for the moderator temperature coefficient currently assumed as an initial condition for the loss of all nonemergency alternating current power and loss of normal feedwater transients.

A copy of our related safety evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

John F. Stang, Senior Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-316

Enclosures: 1. Amendment No. 137 to DPR-74
2. Safety Evaluation

cc w/encls: See next page

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DISTRIBUTION

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ACCESSION NUMBER: **ML012210515**

*Provided SE input by memo

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DATE	08/20/01	08/20/01	07/13/01	08/22/01	08/23/01

OFFICIAL RECORD COPY

Donald C. Cook Nuclear Plant, Units 1 and 2

cc:

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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. 137
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 1, 2000, 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, by Amendment No. 137, Facility Operating License No. DPR-74 is hereby amended to authorize a change in the moderator temperature coefficient currently in the Updated Final Safety Analysis Report (UFSAR) assumed as an initial condition for the loss of all nonemergency alternating current power and loss of normal feedwater transients, as set forth in the license amendment application dated September 1, 2000, and evaluated in the associated safety evaluation by the Commission's Office of Nuclear Reactor Regulation. The licensee shall update the UFSAR by adding a description of this change, as authorized by this amendment, and in accordance with 10 CFR 50.71(e).
3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Date of Issuance: August 23, 2001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 137 TO FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT 2

DOCKET NOS. 50-316

1.0 INTRODUCTION

By application dated September 1, 2000, the Indiana Michigan Power Company (the licensee) requested review and approval of a change to the Updated Final Safety Analysis Report (UFSAR) for the Donald C. Cook (D. C. Cook) Nuclear Plant, Unit 2. The proposed amendment would allow changes to the UFSAR regarding the modeling of the pressurizer heater operation and spray effectiveness as they relate to certain transients that are analyzed for pressurizer overflow. Specifically, the proposed amendments would approve a change to the moderator temperature coefficient (MTC) value currently listed in the UFSAR as an initial condition for the loss of all nonemergency alternating current power (LOAC) and loss of normal feedwater (LONF) transients. The current LOAC and LONF licensing basis analyses for D. C. Cook has been revised to include the proper modeling of the pressurizer heaters and sprays. In order to continue to meet the acceptance criterion that the pressurizer does not become water-solid during an LOAC or an LONF transient, a change in the initial condition of the MTC from the part-power limit value of +5 pcm/°F to the full power limit value of 0 pcm/°F is required. A zero MTC remains conservative for these analyses.

2.0 EVALUATION

The current analyses of record for the LOAC and LONF transients contain the following initial conditions and input parameters:

- a) Pressurizer heaters have not been modeled.
- b) The pressurizer spray model contains a potential nonconservative modeling assumption. This modeling assumption affects the effectiveness of the spray at pressurizer-water levels approaching a water-solid pressurizer condition (i.e., > 90 percent volume).

c) Assumed initial MTC of +5 pcm/°F at 102 percent of licensed power.

The licensee proposes to revise the analyses for both the LOAC and LONF transients to include proper modeling of the pressurizer heaters and sprays. The preliminary results of the reanalyses confirm that all acceptance criteria continue to be met; in particular, the pressurizer does not become water solid. However, in order to achieve an acceptable result, the revised analyses require a change of the MTC from the part-power limit value of +5 pcm/°F (current value in the UFSAR for both Units 1 and 2) to the full power value of 0 pcm/°F for Unit 2.

The MTC curve in the Technical Specifications (TSs) for both D. C. Cook, Units 1 and 2, permits values of the MTC as a function of core power. The curve shows a constant value of +5 pcm/°F for core power from 0 percent to 70 percent of full power. Above 70 percent, the allowed value decreases linearly to 0 pcm/°F at full power. The analyses of the LOAC and the LONF transients assume full power as the initial condition. When reviewing their record of analyses, the licensee determined that the value of the initial MTC was not changed to reflect the TS limits. The MTC value of +5 pcm/°F in the analyses of record for the LOAC and the LONF transients, therefore, conflicts with the TSs, which limit the MTC at full power to 0 pcm/°F.

The positive MTC of +5 pcm/°F in the licensing analyses is very conservative; however, the recent need to revise the accident models has resulted in a need to revise the input assumptions to more accurately reflect the plant limiting conditions for operation. The proposed change to the UFSAR removes some of the excess conservatism in the existing calculations and uses a limiting value established within the existing TSs. Because the licensee's revised analyses are consistent with the established limiting conditions for operation as stated in the TSs, the staff finds the licensee's proposed changes to the UFSAR for Unit 2 acceptable.

3.0 SUMMARY

Based on the above considerations, the staff finds that the change to the value of the MTC from the part-power limit value +5 pcm/°F to the full-power limit value of 0 pcm/°F, assumed as an initial condition for the LOAC and the LONF transients, is acceptable. Under this change, there is reasonable assurance that the facility will operate within the acceptance criteria of the UFSAR and the health and safety of the public will not be endangered. The proposed change is therefore acceptable. As described in the licensee's September 1, 2000, application, following NRC approval, the licensee will update the UFSAR to change the value of the MTC assumed as an initial condition for the LOAC and LONF transient analyses from +5 pcm/°F to 0 pcm/°F, as authorized by this license amendment and in accordance with 10 CFR 50.71(e).

4.0 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.

5.0 ENVIRONMENTAL CONSIDERATION

These amendments change the requirements with respect to 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 (65 FR 56953). 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.

6.0 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: Y. Orechwa

Date: August 23, 2001