

November 12, 2003

Mr. Mano K. Nazar  
American Electric Power  
Senior Vice President and Chief Nuclear Officer  
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 NO. MB8202)

Dear Mr. Nazar:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 263 to Facility Operating License No. DPR-74 for the Donald C. Cook Nuclear Plant, Unit 2. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated March 27, 2003, as supplemented August 15, 2003.

The amendment lowers the trip setpoint and allowable value contained in TS Table 3.3-4 for the pressurizer pressure low safety injection signal. The amendment also lowers the value for the P-11 setpoint on Page 3/4 3-22a of the TS. These changes increase the margin between the low pressurizer pressure safety injection actuation setpoint and the minimum pressurizer pressure that occurs immediately following a reactor trip.

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 by DSpaulding for/***

Mohammed A. Shuaibi, Senior Project Manager, Section 1  
Project Directorate III  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-316

Enclosures: 1. Amendment No. 263 to DPR-74  
2. Safety Evaluation

cc w/encls: See next page

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**\*Input Provided By Memo  
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Donald C. Cook Nuclear Plant, Units 1 and 2

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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. 263  
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 March 27, 2003, as supplemented August 15, 2003, 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. 263, 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 its date of issuance and shall be implemented within 45 days.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA by MShuaibi for/***

L. Raghavan, 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: November 12, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 263

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 3-22a  
3/4 3-23

INSERT

3/4 3-22a  
3/4 3-23

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 263 TO FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-316

## 1.0 INTRODUCTION

By application dated March 27, 2003, as supplemented August 15, 2003, the Indiana Michigan Power Company (the licensee) requested an amendment to the Technical Specifications (TSs) for the Donald C. Cook Nuclear Plant (D. C. Cook), Unit 2. The proposed amendment would (1) lower the trip setpoint and allowable value contained in TS Table 3.3-4 for the pressurizer pressure low safety injection (SI) signal, and (2) lower the value for the P-11 setpoint on Page 3/4 3-22a of the TS.

The proposed setpoint reduction would increase the margin between the low pressurizer pressure SI actuation setpoint and the minimum pressurizer pressure that occurs immediately following a reactor trip. As stated by the licensee in Reference 2, with the existing low pressurizer pressure SI actuation setpoint, this margin is only 20 to 40 psi. This small margin results in an unnecessary distraction for operators responding to the reactor trip since it indicates that SI actuation may be imminent even though diverse indications of plant conditions reveal that SI is not necessary.

The supplement dated August 15, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the Nuclear Regulatory Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on May 27, 2003 (68 FR 28853).

## 2.0 EVALUATION

### 2.1 Regulatory Evaluation

The NRC staff reviewed the licensee's application to verify that the proposed changes comply with applicable regulations and the D. C. Cook Unit 2 licensing basis. These regulations include Title 10 of the *Code of Federal Regulations*, Section 50.46 (10 CFR 50.46), "Acceptance criteria for emergency core cooling systems (ECCS) for light water nuclear power reactors;" and 10 CFR Part 50, Appendix K, "ECCS Evaluation Models." The staff used Chapter 15 of NUREG-0800, "Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants LWR Edition," as guidance during the review.

## 2.2 Technical Evaluation

The low pressurizer pressure instrumentation provides one of several signals that are used to initiate an SI, turbine trip, feedwater isolation, and auxiliary feedwater flow. The low pressurizer pressure condition will initiate an SI during a loss-of-coolant accident (LOCA), a main steam system depressurization event, or a feedwater line break. Following the initiation of the SI signal, cooling water will be delivered to the reactor coolant system (RCS) and the steam generators to maintain the reactor core in a safe condition.

The licensee proposed to change the low pressurizer pressure SI trip setpoint from  $\geq 1900$  psig to  $\geq 1815$  psig, and the low pressurizer pressure SI allowable value from  $\geq 1890$  psig to  $\geq 1805$  psig. The NRC staff reviewed the relevant sections in the Updated Final Safety Analysis Report (UFSAR), Chapter 14, for each accident as described in References 1 and 2 to confirm the methodologies used are in accordance with the D. C. Cook Unit 2 licensing basis.

As stated in Reference 2, there are five D. C. Cook Unit 2 accident analyses that credit initiation of SI on the low pressurizer pressure signal. These accidents are: large-break LOCA; small-break LOCA; steamline break (SLB); feedline break (FLB); and SLB mass and energy release outside containment. The safety analyses performed for each of these accidents assumed a low pressurizer pressure SI setpoint of 1700 psig, and the results show the following: the acceptance criteria specified in 10 CFR 50.46 are met for the LOCA events, the departure from nucleate boiling ratio (DNBR) limit was not exceeded for the steam line break, and the reactor coolant pressure was within 110 percent of the design pressure. In addition, the proposed setpoint change is consistent with the existing analysis of record for the SLB mass and energy release outside of containment. Furthermore, the ability to successfully mitigate this transient is demonstrated.

The revised low pressurizer pressure SI trip setpoint and allowable value have been selected by the licensee to ensure that the engineered safety features will be activated as assumed in the safety analysis. The licensee did not perform new analyses for the five events that take credit for SI actuation on low pressurizer pressure, i.e., the safety analyses continue to assume the same low pressurizer pressure setpoint of 1700 psig. The existing TS low pressurizer pressure setpoint of 1900 psig provides 200 psi total allowance for the pressurizer pressure measurement uncertainty. The allowable value of 1890 psig in the existing TS provided 10 psi allowance to account for the instrument calibration and drift. In order to account for the uncertainty allowance per the setpoint methodology (Ref. 2), a trip setpoint value of 1809.6 psig or greater must be specified to account for total measurement channel uncertainty. With the proposed TS value of 1815 psig, a margin of 115 psi is present, which is greater than the 109.6 psi needed for the total measurement channel uncertainty allowance. The acceptance criteria for the five accident analyses, which used a low pressurizer pressure SI setpoint of 1700 psig and was previously approved by the staff, continue to be met with the revised TS setpoint of the 1815 psig. Therefore, the staff concludes the revised trip setpoint of 1815 psig is acceptable.

The P-11 interlock allows the pressurizer pressure SI trip function to be blocked when the pressurizer pressure is below the P-11 setpoint. Thus, the SI trip function would be blocked during a normal cooldown, thereby preventing an inadvertent SI initiation while the RCS is being depressurized as part of the cooldown procedure. The proposed change of the P-11 setpoint from  $\geq 2010$  psig to  $\geq 1915$  psig maintains the  $\geq 100$  psi margin between the low pressurizer

pressure trip setpoint and the P-11 setpoint. This is consistent with Westinghouse practice and is acceptable.

In Reference 2, the licensee discussed the impact of the proposed changes on procedures and the manner in which the licensee plans to provide training to operators on these impacts. The licensee indicated that it will present the new setpoints and the basis for the change to licensed operators as either classroom or familiarization training. The licensee also indicated that procedures for implementing TS changes contain provisions to ensure that the necessary procedure revisions and training will occur. Based on its review of the licensee's application, the staff has concluded that the licensee's plan for implementing the proposed change adequately covers procedure changes and training.

### 2.3. Summary

The NRC staff evaluated the licensee's request to amend the D. C. Cook Unit 2 TS to lower the low pressurizer pressure SI trip setpoint and allowable value, and the P-11 interlock setpoint to 1815 psig, 1805 psig, and 1915 psig, respectively. As described in the evaluation in Section 2.2 above, the NRC staff concludes that the proposed trip setpoint bounds the setpoint of 1700 psig assumed in the existing analyses of record for the plant. The existing small-break and large-break LOCA analyses continue to comply with 10 CFR 50.46, and 10 CFR Part 50 Appendix K requirements. The SLB analysis continues to ensure the minimum DNBR remains above the DNBR limit. The FLB analysis continues to ensure that the maximum RCS pressure would remain below the 110 percent design pressure limit and that the 10 CFR Part 100 requirements are still met. The proposed setpoint change is consistent with the existing analysis of record for the SLB mass and energy release outside of containment, and the ability to successfully mitigate this transient is demonstrated. In addition, the licensee's plan for implementing the proposed change adequately covers procedure changes and training. Therefore, the staff finds the license amendment request acceptable.

### 3.0 STATE CONSULTATION

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

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes the requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes the surveillance requirements. The staff has determined that the amendment involves 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 amendment involves no significant hazards consideration and there has been no public comment on such finding (68 FR 28853). Accordingly, the 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 the amendment.

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

## 6.0 REFERENCES

1. Letter from J. Pollock, Indiana Michigan Power, to US Nuclear Regulatory Commission, "License Amendment Request to Revise Low Pressurizer Pressure Safety Injection Setpoint, Facility Operating License No. DPR-74," dated March 27, 2003.
2. Letter from Bakken III, A. C., Indiana Michigan Power, to US Nuclear Regulatory Commission, "Response to Request For Additional Information Regarding License Amendment Request to Revise Low Pressurizer Pressure Safety Injection Setpoint (TAC No. MB8202)," dated August 15, 2003.
3. Title 10 of the *Code of Federal Regulations*, Part 50.46, "Acceptance criteria for emergency core cooling systems for light water nuclear power reactors," Revised as of January 1, 2003.
4. Title 10 of the *Code of Federal Regulations*, Part 50 Appendix K, "ECCS Evaluation Models," Revised as of January 1, 2003.
5. Title 10 of the *Code of Federal Regulations*, Part 100, "Reactor Site Criteria," revised as of January 1, 2003.
6. D. C. Cook Updated Final Safety Analysis Report, Chapter 14, version 18.1.

Principal Contributor: Martha Barillas

Date: November 12, 2003