



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 237 TO FACILITY OPERATING LICENSE NO. DPR-58

AND AMENDMENT NO. 219 TO FACILITY OPERATING LICENSE NO. DPR-74

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-315 AND 50-316

1.0 INTRODUCTION

By letter dated November 5, 1999, the Indiana Michigan Power Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License Nos. DPR-58 and DPR-74 for the Donald C. Cook Nuclear Plant, Units 1 and 2 (DC Cook). The proposed amendment would revise Unit 1 and 2 TS 3.5.1, Action "a" and "b," to reflect monitoring pressure data in the Reactor Coolant System instead of the pressurizer. The amendment would also revise Unit 1 and 2 TS Surveillance Requirement (SR) 4.5.1.c to require verification that power is removed from each emergency core cooling system accumulator isolation valve operator instead of verification that each accumulator isolation valve breaker is physically removed from the circuit. Furthermore, the licensee proposes to make administrative changes to Unit 1 and 2 TS Bases 3/4.5.1.

2.0 EVALUATION

2.1 Proposed Changes to Unit 1 and 2 TS Requirement 3.5.1, Action "a" and "b"

Unit 1 and 2 TS 3.5.1, Action "a" and "b," describe credible plant operation limits under conditions of one inoperable accumulator. Unit 1 and 2 TS 3.5.1, Action "a," currently states "With one accumulator inoperable, due to boron concentration not within limits, restore boron concentration to within limits within 72 hours or be in at least MODE 3 within the next 6 hours and reduce pressurizer pressure to less than or equal to 1000 psig within the following 6 hours." The licensee proposes to replace the word "pressurizer" with the phrase "reactor coolant system." The licensee proposes the TS to read as "With one accumulator inoperable, due to boron concentration not within limits, restore boron concentration to within limits within 72 hours or be in at least MODE 3 within the next 6 hours and reduce *reactor coolant system* pressure to less than or equal to 1000 psig within the following 6 hours."

Unit 1 and 2 TS 3.5.1, Action "b," currently states "With one accumulator inoperable for reasons other than boron concentration not within limits, restore the accumulator to OPERABLE status within 1 hour, or be in at least MODE 3 within the next 6 hours and reduce pressurizer pressure

to less than or equal to 1000 psig within the following 6 hours." The licensee proposes to also replace the word "pressurizer" with the phrase "reactor coolant system." The licensee proposes the TS to read as "With one accumulator inoperable for reasons other than boron concentration not within limits, restore the accumulator to OPERABLE status within 1 hour, or be in at least MODE 3 within the next 6 hours and reduce *reactor coolant system* pressure to less than or equal to 1000 psig within the following 6 hours."

The licensee also proposes to modify a footnote that references the applicability of Unit 1 and 2 TS 3.5.1 to MODES 1, 2, and 3. The footnote currently states "Pressurizer Pressure above 1000 psig." Again, the licensee proposes to replace the word "pressurizer" with "reactor coolant system." The footnote is proposed to read as "*Reactor Coolant System* Pressure above 1000 psig."

The purpose of Unit 1 and 2 TS 3.5.1 is to ensure that the accumulators are operated under the correct operating conditions. Accumulators are large tanks filled with borated water that inject coolant in to the Reactor Coolant System (RCS) when RCS conditions are less than 600 psig (i.e., during a loss-of-coolant accident at low pressures). Action "a" and "b" require reducing pressurizer pressure to less than or equal to 1000 psig within 6 hours if an accumulator becomes inoperable. The purpose of the Unit 1 and 2 footnote is to clarify the mode applicability of the TS.

The licensee proposes to change the word "pressurizer" to the phrase "reactor coolant system" in TS 3.5.1, Actions "a" and "b." The change is intended to provide consistency with the plant design. The licensee's present pressurizer pressure instrumentation is calibrated to read at standard operating conditions in the range of 1700 - 2500 psig. When the pressurizer pressure falls below 1700 psig, the instrument scale can no longer show the true reading. The pressure of 1500 psig would be off the instrument's scale. There is no other pressurizer pressure instrumentation calibrated for lower pressure levels. Therefore, the licensee proposes to use the RCS pressure indicators, which are calibrated to a range of 0 - 5000 psig, to meet the conditions of TS 3.5.1. The licensee states that "RCS pressure and pressurizer pressure instrumentation measure a similar parameter in the primary coolant system. Since the RCS is a closed loop fluid system (the pressurizer is connected to the RCS- emphasis added), pressure instruments should indicate approximately the same value. There is no significant difference between the instrument reading because they are corrected for range, height, and accuracy. There is no significant change in the margin of pressure between when the accumulators are required to be aligned at 1000 psig and the upper limit for nitrogen cover-pressure of 658 psig specified in TS 3.5.1.d. Since there is no wide-range pressurizer pressure instrumentation and the pressurizer pressure narrow-range instruments are calibrated for a 1700-2500 psig range, RCS pressure indicators are used for TS SR 4.5.1.c. Using RCS pressure wide-range indicators is acceptable because they have a calibrated range of 0-5000 psig, which provides a more accurate indication of RCS pressure at the TS applicability requirement of 1000 psig."

The NRC staff finds that the proposed change does not constitute a reduction in safety and does not alter the requirement of TS 3.5.1, Action "a" or "b." Monitoring the RCS pressure at low pressure conditions is equivalent to monitoring the pressurizer pressure at low pressure conditions. The proposed change is intended to provide consistency with plant design and therefore allow clarity and consistency in the TS. Furthermore, the change is consistent with

NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," Revision 1, and similar changes have been made at the Byron and Braidwood nuclear facilities. Therefore, the staff finds the proposed change acceptable.

## 2.2 Proposed Changes to Unit 1 and 2 Surveillance Requirement 4.5.1.c

Unit 1 and 2 TS Surveillance Requirement (SR) 4.5.1.c currently states "At least once per 31 days when the RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit." The licensee proposes to replace the phrase "is disconnected by removal of the breaker from the circuit" with "is removed from each accumulator isolation valve." The licensee proposes the TS to read as *"At least once per 31 days when RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is removed from each accumulator isolation valve operator."*

The licensee is proposing this change to reflect the actual design of the plant. Unit 1 TS SR 4.5.1.c was revised on March 30, 1976, to reflect guidance in NUREG-0452, "Standard Technical Specifications - Westinghouse Pressurized Water Reactors." However, the licensee has determined that the past procedure did not support literal compliance with the SR in "removal of the breaker from the circuit." The past procedure involved molded-case circuit breakers (MCCB), which supply power to the accumulator isolation valve operators, being placed in the "OFF" position, so that the associated accumulator isolation valves could not operate. However, the MCCB were not designed for ready physical removal, and it was decided that the past procedure could therefore not meet the TS. Additionally, physical removal of the breaker from the circuit in the MCCB is difficult and dangerous. Therefore, the licensee proposes to delete the words "by removal of the breaker from the circuit" in order to allow for power to be removed from the isolation valve operator without physical removal of the circuit breaker. The necessary protection against a single active failure is provided with the control power being removed from the accumulator isolation valve motor-operator. Removal of the control power will ensure that an active failure will not result in the inadvertent actuation of the accumulators. Thus, physical removal of the breaker from the circuit is unnecessary. In addition, the proposed change to the surveillance requirement provides clear description on what is an acceptable method for removing power from the accumulator isolation valves. Stating the requirement in this manner satisfies the Bases for the TS while reflecting the actual plant design, which precluded ready physical removal of the breaker.

The staff finds that the proposed changes do not represent a reduction in safety or alter any requirement. Power removed from the accumulator isolation valve motor-operator does provide adequate assurance that there will be no undetected closure of an accumulator motor-operated isolation valve operate. The proposed change is consistent with NUREG-143, and the Byron and Braidwood nuclear facilities have amended their TS, as approved by the NRC, in similar fashion. Therefore, the proposed changes are acceptable.

## 2.3 Proposed Changes to Unit 1 and 2 TS Bases 3/4.5.1

The third paragraph in the Unit 1 and 2 TS Bases 3/4.5.1 currently states "The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Std. 279- 1971, which requires that bypasses of a protective function be removed

automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required." The licensee proposes to spell out the word "Standard." The licensee also proposes to add the sentence "Verification every 31 days that power is removed from each accumulator isolation valve operator when the RCS pressure is greater than 2000 psig ensure that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve," to the end of the paragraph. The TS bases paragraph is proposed to read as "The accumulator power operated isolation valves are considered to be "operating bypasses" in the context of IEEE Standard 279-1971, which requires that bypasses of a protective function be removed automatically whenever permissive conditions are not met. In addition, as these accumulator isolation valves fail to meet single failure criteria, removal of power to the valves is required. *Verification every 31 days that power is removed from each accumulator isolation valve operator when the RCS pressure is greater than 2000 psig, ensure that an active failure could not result in the undetected closure of an accumulator motor operated isolation valve.*

The sixth paragraph of Unit 1 and 2 TS Bases 3/4.5.1 currently states "If the accumulator cannot be returned to OPERABLE status within the associated completion time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and pressurizer pressure reduced to less than or equal to 1000 psig within 12 hours." The licensee proposes replace the word "pressurizer" with the acronym "RCS." The licensee proposes the TS Bases to read as "If the accumulator cannot be returned to OPERABLE status within the associated completion time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 6 hours and RCS pressure reduced to less than or equal to 1000 psig within 12 hours."

The purpose of TS Bases 3/4.5.1 is to detail and outline operability bases for accumulators. The licensee proposes to replace the word "pressurizer" with the acronym "RCS" (reactor coolant system) to provide consistency with the TS and plant design. The licensee proposes to add the text to the third paragraph to reflect guidance provided in NUREG - 1431 for SR 4.5.1.c.

The NRC staff finds that the proposed change does not constitute a reduction in safety and does not alter any requirement. Monitoring the RCS pressure at low pressure conditions is equivalent to monitoring the pressurizer pressure at low pressure conditions, and therefore substitution of the acronym "RCS" for "pressurizer" is acceptable. The proposed change is intended to provide consistency with plant design and therefore allow clarity and consistency in the TS. Furthermore, the change is consistent with NUREG - 1431 and similar changes have been made at the Byron and Braidwood nuclear facilities. Adding guidance to the TS from NUREG-1431 is intended to benefit and clarify the SR for the reader. Therefore, the staff finds the proposed changes acceptable.

#### 2.4 Proposed Unit 1 and 2 Administrative Changes to TS Pages 3/4 5-1, 3/4 5-2, B 3/4 5-1

The licensee proposes to make administrative changes to the format of Unit 1 and 2 TS pages 3/4 5-1, 3/4 5-2, and B 3/4 5-1 in an ongoing effort to improve their appearance. The changes include adding "3/4 LIMITING CONDITION FOR OPERATION AND SURVEILLANCE REQUIREMENTS" to the header, adding the acronym "ECCS" in the header, adding "Page" in

the footer, and deleting "NO." in the footer. For the TS Bases pages, these changes include rearranging the order of the text in the header, deleting "NO." in the footer, and adding "Page" in the footer.

The staff finds that the proposed administrative changes do not represent a reduction in safety or alter the TS requirements. The administrative changes are intended to maintain consistency and enhance usability and clarity of the TS. Therefore, the staff finds the proposed changes are acceptable.

### 3.0 SUMMARY

The proposed amendment would revise Unit 1 and 2 TS 3.5.1, Action "a" and "b," to reflect monitoring pressure data from the Reactor Coolant System instead of the pressurizer. The amendment would also revise Unit 1 and 2 TS SR 4.5.1.c to require verification that power is removed from each emergency core cooling system accumulator isolation valve operator instead of verification that each accumulator isolation valve breaker is removed from the circuit. Furthermore, the licensee proposes to make administrative changes to Unit 1 and 2 TS Bases 3/4.5.1. The proposed amendment does not cause changes to accident initiators or precursors, or to the accident analyses, and does not involve a significant reduction of safety.

Based on the above evaluation, the staff finds that the proposed changes to the TS are acceptable.

### 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 or change the 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 previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding (64 FR 65735). 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

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AMENDMENT NO. TO FACILITY OPERATING LICENSE NO. DPR-58, DONALD C. COOK  
NUCLEAR PLANT, UNIT 1

AMENDMENT NO. TO FACILITY OPERATING LICENSE NO. DPR-74, DONALD C. COOK  
NUCLEAR PLANT, UNIT 2

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