March 27, 2003

Mr. A. Christopher Bakken III, 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, UNITS 1 AND 2 - REQUEST FOR ADDITIONAL INFORMATION REGARDING, "LICENSE AMENDMENT REQUEST TO EXTEND REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURES ACTUATION SYSTEM SURVEILLANCE TIME REQUIREMENTS AS EVALUATED IN WCAP-15376" (TAC NOS. MB6324 AND MB6325)

Dear Mr. Bakken:

By application dated August 30, 2002, as supplemented February 27, 2003, the Indiana Michigan Power Company (the licensee) submitted a license amendment request that would revise the technical specifications for the Donald C. Cook Nuclear Plant, Units 1 and 2. This application proposed extending selected reactor trip system and engineered safety features actuation system surveillance and completion times as evaluated in WCAP-15376, "Risk-Informed Assessment of the RPS and ESFAS Surveillance Test and Reactor Trip Breaker Test and Completion Times."

The Nuclear Regulatory Commission (NRC) staff has reviewed the application and identified that it does not contain adequate technical information in sufficient detail to enable the staff to make an independent assessment regarding the proposed license amendment. The NRC staff finds that additional information is needed as identified in the enclosed request for additional information (RAI).

The contents of the enclosed RAI were discussed with Mr. Toby Woods, et al., of your staff on March 12, 2003, during a telephone conference call. A mutually agreeable target date of April 1, 2003, for your response was established.

If circumstances result in the need to revise the target date, please contact me at (301) 415-4018 at the earliest opportunity.

Sincerely,

/RA/

Harold K. Chernoff, Project Manager, Section 1
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-315 and 50-316

Enclosure: Request for Additional Information

cc w/encl: See next page

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/RA/

Harold K. Chernoff, Project Manager, Section 1
Project Directorate III
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Docket Nos. 50-315 and 50-316

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

DONALD C. COOK, UNITS 1 AND 2

EXTEND REACTOR TRIP SYSTEM AND ENGINEERED SAFETY FEATURES

ACTUATION SYSTEM SURVEILLANCE AND COMPLETION TIME

REQUIREMENTS AS EVALUATED IN WCAP-15376

DOCKET NOS. 50-315 AND 50-316

The following questions have been generated during the Nuclear Regulatory Commission (NRC) staff review of the license amendment application, which proposes extending selected reactor trip system and engineered safety features actuation system surveillance and completion times as evaluated in WCAP-15376, **"**Risk-Informed Assessment of the RPS and ESFAS Surveillance Test and Reactor Trip Breaker Test and Completion Time."

1. NUREG-1431, Rev. 2, "Standard Technical Specifications Westinghouse Plants," includes specific requirements for MASTER and SLAVE relay testing which are incorporated into the analysis of WCAP-15376. Technical justification needs to provide the basis for not including these testing requirements as defined in the NUREG-1431. This justification should address, but not be limited to, frequency of testing, expected duration of testing, and technical details of the type of testing performed. In the August 30, 2002, submittal, Attachment 3, Table 3.1, Note 12 states, "The master and slave relays at CNP do not have TS requirements." Explain the basis and technical acceptability of this statement.

2. Confirmation is required to show that the reactor protection system (RPS) site reliability data has been evaluated/reviewed ensuring conformity with WCAP-15376 and NUREG/CR-5500, "Reliability Study: Westinghouse Reactor Protection System, 1984-1995," Volume 2, April 1999.

3. The proposed changes to technical specification (TS) Table 4.3-1 functional units 21 and 23 incorporate a 4-month frequency (at least once per 124 days) for surveillance testing. A 4-month frequency is not a direct replacement for 62 days on a STAGGERED TEST BASIS. Application of the provisions of TS 4.0.2, which permits a 25 percent extension of surveillance intervals, to the 4-month frequency results in a 31 day allowed surveillance extension. Application of TS 4.0.2 to the 62 days on a STAGGERED TEST BASIS term results in a 15.5 day allowed surveillance extension. This difference from NUREG-1431, Rev. 2, "Standard Technical Specifications Westinghouse Plants," and TSTF-411, "Surveillance Test Interval Extensions for Components of the Reactor Protection System (WCAP-15376)," Revision 1, should be explained and technically justified.

4. The proposed changes to TS Table 4.3-1 functional units 19 and 22 and Table 4.3-2 functional units 1, 2, 3, 4, 6, and 10 incorporate an SA (at least once per 184 days) frequency for surveillance testing. An SA frequency is not a direct replacement for 92 days on a STAGGERED TEST BASIS. Application of the provisions of TS 4.0.2 to the

SA frequency results in a 46 day allowed surveillance extension. Application of TS 4.0.2 to the 92 days on a STAGGERED TEST BASIS term results in a 23 day allowed surveillance extension. This difference from NUREG-1431, Rev. 2, and TSTF-411, should be explained and technically justified.

5. In the August 30, 2002, submittal, Attachment 3, Table 3.2, some of the "Agree" entries in the column titled, "CNP Plant-specific Parameter," are marked with a superscript "**" footnote. The footnote states, "Events without automatic protection are addressed by procedure, which directs a reactor trip when required to maintain plant control or safety margins." It is unclear how this footnote affects the meaning of the, "CNP Plant-specific Parameter," column entries. Confirmation is needed that the signal actuation source for each event in the table conforms to the WCAP-15376 analyses assumptions.

6. Reference needs to be provided to plant procedures that require timely completion of common cause evaluations for failures of RPS channels with extended testing frequencies and additional testing for plausible common cause failures. The wording on page 8 of Enclosure 2 to the August 30, 2002, does not explicitly identify procedures that require this action.

7. The discussion on pages 8-9 of Enclosure 2 to the August 30, 2002, submittal states that, "Only those instrument channels that have hardware installed to permit testing in bypass without using lifting leads or installing jumpers are routinely tested in bypass." This statement does not definitively prohibit surveillance testing in bypass for instrument channels that do not have hardware installed to permit testing in bypass without lifting leads or installing jumpers. The safety evaluation report (SER) for WCAP-10271-P-A, Supplement 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," states that, "Testing of the RTS analog channels in the bypassed condition[s] by use of temporary jumpers or lifting leads is not acceptable." Clarification of conformance with this implementation requirement is needed.

8. The SERs for WCAP-10271-P-A, Supplement 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and WCAP-10271-P-A, Supplement 2, Revision 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System," require that any increase in instrument drift due to extended surveillance test intervals (STIs) be properly accounted for in the setpoint calculation methodology. Additional guidance was provided in a letter dated April 27, 1988, C. Rossi, NRC, to R. Janecek, BWR Owners' Group. This guidance document states that, "...licensees need only to confirm that the setpoint drift which could be expected under the extended STIs has been studied and either 1) has been shown to remain within the existing allowance in the RPS and engineered safety features actuation system (ESFAS) instrument setpoint calculation, or 2) the allowance and setpoint have been adjusted to account for the additional expected drift." Discussion on page 15 of the August 30, 2002, submittal states that for the Foxboro Spec 200 components in the RTS and ESFAS, a study has confirmed that the one percent rack drift assumption used in the current setpoint methodology bounds the manufacturers drift specification and is consistent with field data. This does not appear to directly address the evaluation of expected behavior for extended STIs. Similarly, the discussion of the remainder of the affected

instrumentation does not directly address the established acceptance criteria from the April 27, 1988, guidance letter. In fact, a qualitative assessment is discussed. Confirmation should be provided that any increase in instrument drift due to extended STIs has been, or will be, properly accounted for in the setpoint calculation methodology.

9. NRC Inspection Report 50-315/99032(DRS); 50-315/99032(DRS) dated February 4, 2000, closed Manual Chapter 0350 Restart Case Specific Checklist Item No. 3C, "Failure to Consider Instrument Uncertainties, Setpoints, and/or Instrument Bias," and Confirmatory Action Letter Item No. 9, "Instrument Uncertainties Incorporated into Procedures and Analyses." In both cases, a conclusion was documented that sufficient evidence of completed work and/or corrective actions had established a basis for closing these items, while recognizing additional work and/or corrective actions would be completed. Confirmation of the completion of work and/or corrective actions associated with these two items should be provided.

10. In the August 30, 2002, submittal, Note 5 to Table 3.1 of Attachment 3 states that, "Because "infrequent" slave relay failures are the norm at Cook Nuclear Plant (CNP), the WCAP 15376 analysis is applicable to CNP". This conclusion does not appear to be fully explained or supported. A technical basis for this conclusion needs to be provided.

11. In the August 30, 2002, submittal, it is noted in Attachment 3, page 13 that the probabilistic risk assessment (PRA) Peer Review recommended that, "Common cause screening could be improved, and plant-specific common cause screening should be considered." How do these statements affect the WCAP-10271 SER requirement concerning treatment and identification of common cause failures? The basis for the conclusion that the Level A and Level B Facts and Observations from the PRA Peer Review are, "not relevant," should also be provided. Additionally, the schedule for the resolution of the PRA Peer Review Level A and Level B Facts and Observations should be provided.

12. On page 3 of Attachment 3 to letter dated February 27, 2003, a ratio based comparison of CNP large early release frequency (LERF)/core damage frequency (CDF) and WCAP-15376 LERF/CDF values is provided. The CNP values result in 11.5 percent of CDF sequences progressing to LERF. For WCAP-15376 4.7 percent of CDF sequences progress to LERF. An attempt is then made to establish an estimate of the CNP specific increase in LERF for the proposed changes by applying the CNP derived ratio of 11.5 percent to the WCAP-15376 deterministically established values for CDF for 2/4 and 2/3 logic. The technical and regulatory bases should be provided for either: 1) the similarity of the CNP PRA model to the WCAP-15376 model, such that direct comparisons are technically valid, or 2) technical evaluation of the CNP cutsets proving that the ratio of CDF sequences that lead to LERF would not be affected by the proposed completion time and surveillance extensions of WCAP-15376 for each piece of equipment. The response to this question should encompass the application of this LERF/CDF ratio in the response to NRC Condition and Limitation 3 on page 5 of Attachment 3 to letter dated February 27, 2003.

13. Recognizing the reliance on the technical work originally performed in support of WCAPs-10271, -14333, a discussion of potential cumulative risk impacts, if any, from implementation of WCAP-15376 proposed TS changes, should be provided.

14. On page 6 & 7 of Attachment 3 to letter dated February 27, 2003, the response to NRC Condition and Limitation 4, does not appear to directly (quantitatively) address the applicability of the WCAP-15376 model assumptions. WCAP-15376, Table 8.28 provides human error probabilities for six activities. The applicability of these values needs to be quantitatively addressed.

15. Technical justifications need to be provided for deviations from the surveillance testing frequencies or completion times in WCAP-15376 or TSTF-411 Rev. 1. These justifications need to include a risk-based assessment of the deviation (e.g., the proposed change to TS Table 4.3-1 functional unit 2 requests a change to a quarterly frequency rather than the accepted 184 days).