May 19, 2004

Mr. Mano K. Nazar
Senior Vice President and Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE DONALD C. COOK NUCLEAR PLANT, UNIT 1 AND 2 LICENSE RENEWAL APPLICATION

Dear Mr. Nazar:

By letter dated October 31, 2003, Indiana Michigan Power Company submitted an application pursuant to 10 CFR Part 54, to renew the operating licenses for the Donald C. Cook Nuclear Plant (Cook), Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission's (NRC). The NRC staff is reviewing the information contained in the license renewal application (LRA) and has identified, in the enclosure, areas where additional information is needed to complete the review. Specifically, the request for additional information (RAI) is Enclosure 1, from the Cook LRA Sections 4.3, 4.6, B.1.41, and B.1.3.

Based on discussions with Richard Grumbir of your staff, a mutually agreeable date for your response is within 30 days of the date of this letter. If you have any questions regarding this letter or if circumstances result in your need to revise the response date, please contact me at (301) 415-4053 or by e-mail at jgr@nrc.gov.

Sincerely,

/RA/ Samson Lee for

Jonathan Rowley, Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-315 and 50-316

Enclosure: As stated

cc w/encl: See next page

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Donald C. Cook Nuclear Plant, Units 1 and 2

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DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2
LICENSE RENEWAL APPLICATION
REQUEST FOR ADDITIONAL INFORMATION (RAI)

Cook LRA Section 4.3, "Metal Fatigue"

RAI 4.3.1-1

Section 4.3.1 of the LRA discusses the fatigue evaluation of the Unit 1 auxiliary spray line that was performed in response to NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems." The LRA indicates that this fatigue evaluation is contained in WCAP-14070, "Evaluation of Cook Units 1 and 2 Auxiliary Spray Piping per NRC Bulletin 88-08," July 1994. Provide a copy of WCAP-14070.

RAI 4.3.2-1

Section 4.3.2 of the LRA discusses the evaluation of non-Class 1 components. The LRA indicates Indiana Michigan Power Company (I&M) determined that only the RCS sampling system piping could exceed 7000 thermal cycles during the period of extended operation. The LRA further indicates that a calculation was prepared to justify operation of the RCS sampling system piping for 99,000 cycles. The LRA then concludes that the RCS sample system piping analysis is not a TLAA. Clarify whether the RCS sampling system piping calculation was prepared to support the Cook LRA. If the RCS sampling system piping calculation was prepared to support the LRA, then the sampling system piping analysis should be considered a TLAA that has been projected to the end of the period of extended operation in accordance with 10 CFR 54.21(c)(1)(ii).

RAI 4.3.3-1

Section 4.3.3 of the LRA discusses I&M's evaluation of the impact of the reactor water environment on the fatigue life of components. The discussion references the fatigue sensitive component locations for an early vintage Westinghouse plant identified in NUREG/CR-6260, "Application of NUREG/CR-5999 Interim Fatigue Curves to Selected Nuclear Power Plant Components." The LRA indicates that the design usage factors provided in Table 5-98 of NUREG/CR-6260 were used for the evaluation of the charging nozzle, safety injection nozzle and RHR tee. The design usage factors were based on an evaluation of the Turkey Point facility, including a plant specific evaluation of the RHR piping and detailed finite element analyses of the charging and safety injection nozzles. Discuss the applicability of these analyses to the Cook facility. The discussion should include a comparison of piping sizes and thicknesses, including the design of the thermal sleeves between Cook and Turkey Point. The discussion should also include a comparison of the number and type of design transients cycles between Cook and Turkey Point.

Cook LRA Section 4.6, "Containment Liner Plate and Penetration Fatigue"

RAI 4.6.1-1

Section 4.6.1 of the LRA discusses the evaluation of the containment liner. The LRA indicates that the liner was evaluated in 1999 after the discovery of localized thinning of the liner. Indicate the amount and extent of the localized liner thinning. Describe how the fatigue evaluation of the locally thinned area was performed.

RAI 4.6.2-1

Section 4.6.2 of the LRA discusses the evaluation of the containment penetrations. The LRA indicates that although mechanical penetrations should have been designed to meet the fatigue provisions of the ASME Code, the original stress analyses of most penetrations only address pipe break loads. The LRA indicates that recent analyses of the main steam and residual heat removal penetrations demonstrated that these penetrations satisfy the fatigue exemption provisions of ASME Section III, Section N-415.1. These penetrations were found acceptable for the period of extended operation in accordance with 10 CFR 50.21(c)(1)(i). I&M indicates that the potential for fatigue cracking of the remaining penetrations will be managed by ASME Section XI. However, the NRC staff has not endorsed the use of the ASME Section XI inspection program in lieu of meeting design basis fatigue limits for the period of extended operation. I&M should either propose a plant specific fatigue aging management program for the penetrations in accordance with 10 CFR 54.21(c)(1)(iii) or provide an evaluation which demonstrates the penetrations will be acceptable for the period of extended operation in accordance with 10 CFR 54.21(c)(1)(i) or 10 CFR 54.21(c)(1)(ii).

Cook LRA Section B.1.41, "Water Chemistry Control - Chemistry One-Time Inspection"

RAI B.1.41-1

LRA Section B.1.41, "Water Chemistry Control - Chemistry One-Time Inspection," describes a new program for verifying the effectiveness of the chemistry control programs. The application does not include all of the information necessary for the staff to review the program. According to the description, on page B-131 of the LRA, the program will be consistent with the Section XI.M32 of the GALL. However, the same description also states that the scope of the program will be narrower than that of GALL Section XI.M32. Since the differences between the applicant's program and the GALL program are not evident, the staff requests that the applicant address the following:

(a) Program Scope List the systems, components, and locations within the scope of this program. Discuss how this scope was determined.

(b) Parameters Monitored/Inspected Describe the parameters to be measured for each inspection included in this program, and explain how these parameters relate to the degradation mechanisms/aging effects for the components within the scope of the program.

(c) Detection of Aging Effects Describe the criteria for prioritizing the components within the scope of this program and the method for defining the inspection sample set. In addition, describe the various methods for detecting the aging effects and the bases (standards) for these methods.

(d) Monitoring and Trending Describe how monitoring and trending of plant-specific and industry-wide experience are being used to support the effectiveness of this program.

(e) Acceptance Criteria Describe the acceptance criteria for each inspection covered by this program, and the actions taken resulting from unexpected or unacceptable results.

(f) Operating Experience Although this is a new program, the staff requests that the applicant discuss the review of recent surveillance and/or maintenance results that were used to determine which components to include in the scope of a chemistry one-time inspection.

Cook LRA Section B.1.3, "Boral Surveillance Aging Management Program"

RAI B.1.3-1

(a) Discuss the correlation between measurements of the physical properties of Boral coupons and the integrity of the Boral panels in the storage racks.

(b) Are the wrappers for the storage racks vented to allow the escape of the hydrogen gas that would be generated if the Boral corrodes? If they are not vented, what measures are taken to prevent them from bulging?

(c) What is the accuracy of the neutron attenuation and thickness measurement techniques used for monitoring the Boral coupons? What is the accuracy of the neutron attenuation and thickness measurements required to detect degradation of the Boral panels in the spent fuel racks?

(d) The most recent coupon tests found no "significant" changes. Provide the justification for this statement, including the amount of change that was found.

(e) Describe the "minor corrosion pitting" found during the most recent Boral coupon testing (application, p. B-25). Discuss the trending procedure required to ensure that the pitting will not increase to affect the functionality of the Boral.

(f) Describe the corrective actions that would be implemented if coupon test results are not acceptable.

(g) The Boral Surveillance AMP (application, p. B-25) states that no program changes were considered necessary as a result of industry experience with hydrogen gas generation. Discuss the technical basis for this conclusion.

(h) The UFSAR supplement (application, p. A-12) and the Boral Surveillance AMP (application, p. B-23) list specific gravity as one of the parameters monitored. However,

specific gravity is not discussed as part of the acceptance criteria in the AMP. How is the specific gravity used to manage aging of the storage racks?

(i) In September 2003, an inspection of Boral test coupons at Seabrook Nuclear Station revealed bulging and blistering of the aluminum cladding. Discuss the impact, if any, that this event is considered to have on the Boral Surveillance Program at Cook.