July 28, 2004

Mr. Mano K. Nazar
Senior Vice President and Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF DONALD C. COOK NUCLEAR PLANT, UNITS 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 (CNP), Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (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 enclosed requests for additional information (RAIs) are from CNP LRA Section 3.1 (Enclosure).

Based on discussions with Mr. 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/
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

July 28, 2004

Mr. Mano K. Nazar
Senior Vice President and Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF DONALD C. COOK NUCLEAR PLANT, UNITS 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 (CNP), Units 1 and 2, for review by the U.S. Nuclear Regulatory Commission (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 enclosed requests for additional information (RAIs) are from CNP LRA Section 3.1 (Enclosure).

Based on discussions with Mr. 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/
Jonathan Rowley, Project Manager
License Renewal Section A
License Renewal and Environmental Impacts Program
Division of Regulatory Improvements Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-315 and 50-316

Enclosure: As stated

cc w/encl: See next page
ADAMS Accession No.: ML042100372
DISTRIBUTION: See next page

Document Name: C:\MyFiles\Copies\Formal 3.1.2 RAIs.wpd

OFFICE	PM:RLEP	LA:RLEP	SC:RLEP
NAME	JRowley	MJenkins	SLee
DATE	7/28/04	7/28/04	7/28/04

OFFICIAL RECORD COPY

DISTRIBUTION: Ltr. to M. Nazar, Re: DC Cook Dated: July 28, 2004
Accession No: **ML042100372**

HARD COPY
RLEP RF
J. Rowley (PM)

E-MAIL:
RidsNrrDrip
RidsNrrDe
G. Bagchi
K. Manoly
W. Bateman
J. Calvo
R. Jenkins
P. Shemanski
J. Fair
RidsNrrDssa
RidsNrrDipm
D. Thatcher
R. Pettis
G. Galletti
C. Li
M. Itzkowitz (RidsOgcMailCenter)
R. Weisman
M. Mayfield
A. Murphy
S. Smith (srs3)
S. Duraiswamy
Y. L. (Renee) Li
RLEP Staff

C. Marco
J. Strasma, RIII
OPA

Donald C. Cook Nuclear Plant, Units 1 and 2

cc:

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, IL 60532-4351

Township Supervisor
Lake Township Hall
P.O. Box 818
Bridgman, MI 49106

U.S. Nuclear Regulatory Commission
Resident Inspector's Office
7700 Red Arrow Highway
Stevensville, MI 49127

David W. Jenkins, Esquire
Indiana Michigan Power Company
One Cook Place
Bridgman, MI 49106

Mayor, City of Bridgman
P.O. Box 366
Bridgman, MI 49106

Special Assistant to the Governor
Room 1 - State Capitol
Lansing, MI 48909

Mr. John A. Zwolinski
Director, Design Engineering and
Regulatory Affairs
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

Michigan Department of Environmental
Quality
Waste and Hazardous Materials Div.
Hazardous Waste & Radiological
Protection Section
Nuclear Facilities Unit
Constitution Hall, Lower-Level North
525 West Allegan Street
P.O. Box 30241
Lansing, MI 48909-7741

David A. Lochbaum
Nuclear Safety Engineer
Union of Concern Scientists
1707 H Street NW, Suite 600
Washington, DC 20036

Michael J. Finissi, Plant Manager
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

Mr. Joseph N. Jensen, Site Vice President
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

Mr. Fred Emerson
Nuclear Energy Institute
1776 I Street, N.W., Suite 400
Washington, DC 20006-3708

Richard J.Grumbir
Project Manager, License Renewal
Indiana Michigan Power Company
Nuclear Generation Group
500 Circle Drive
Buchanan, MI 49107

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

Donald C. Cook (CNP) LRA Section 3.1, "Reactor Vessel, Internals and Reactor Coolant System"

RAI 3.1.2-1

In Table 3.1.2-1, the applicant has identified cracking as an aging effect requiring management for Reactor Vessel and CRDM Pressure Boundary components manufactured from nickel-based alloys and stainless steel alloys exposed to treated (borated) water environments. The applicant identified the flange leak tubes as the components that are subject to cracking. The applicant stated that the flange leak tubes in Unit 1 are made from nickel-based alloys and the flange leak tubes from Unit 2 are made from stainless steel. The aging effect is managed by the Water Chemistry Control, Inservice Inspection, and Alloy 600 Aging Management (Unit 1 only) programs. The applicant stated that the component, material, environment, aging effect and aging management program (AMP) is consistent with NUREG-1801.

NUREG-1801 Item A 2.1-F states that a plant-specific AMP needs to be evaluated because existing programs may not be capable of mitigating or detecting crack initiation and growth due to SCC in the vessel flange leak detection line. The applicant has not identified how SCC will be managed in the stainless steel flange leak tubes.

The staff requests that the applicant identify the AMP that will be used to mitigate or detect crack initiation and growth due to SCC in the stainless steel vessel flange leak tubes. Included should be a discussion about corrective actions involving repair/replacement.

RAI 3.1.2-2

In Table 3.1.2-2, the applicant has identified that loss of material is an aging effect requiring management for Class 1 valve components manufactured from low alloy steel and exposed to an external ambient environment. The aging effect is managed by the Boric Acid Corrosion Prevention Program. The applicant identified the components as Class 1 valve bodies and bonnets $\geq$ 2½", and bolting material (for valves and blind flanges). The aging effect is not identified in GALL for this component, however, the AMP is consistent with the NUREG-1801 AMP description in Section XI.M10. The aging effect for the bolting material (for valves and blind flanges) is consistent with GALL for this component, environment, and material and the AMP is consistent with the NUREG-1801 AMP description in Section XI.M10. The applicant stated that the Boric Acid Corrosion Prevention Program relies on the implementation of recommendations in NRC Generic Letter (GL) 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," to monitor the condition of ferritic steel components on which borated reactor water may leak. The applicant stated that periodic visual inspection of adjacent structures, components, and supports for evidence of leakage and corrosion is an element of the GL 88-05 monitoring program.

The applicant did not identify which aging mechanisms could lead to loss of material in the above components that are fabricated from alloy steel or carbon steel, although the AMP credited with aging management appears to imply that the applicant only considers potential

leakage of the borated coolant as a mechanism that could induce loss of material from the external surfaces of these components. Alloy steel and carbon steel components may also be susceptible to general corrosion in atmospheric environments if the atmospheres are damp, moist or humid.

The staff requests that the applicant identify the aging mechanism that CNP has determined are capable of inducing loss of material in alloy steel or carbon steel of the above components that are exposed externally to the inside environments. In addition, the applicant is requested to describe the inside environment and whether the applicant is managing the water vapor content in the inside environment to low humidity levels. The staff seeks further clarification on whether the applicant considers loss of material due to general corrosion as an applicable aging effect for external surfaces of alloy steel or carbon steel components that are exposed to the inside environment. If not, the applicant is requested to provide technical justification why CNP does not consider general corrosion to be an aging mechanism that needs management in the external surfaces of alloy steel or carbon steel components during the extended periods of operation.

RAI 3.1.2-3

In Table 3.1.2-2, the applicant has identified that loss of material is an aging effect requiring management for Reactor Coolant Pump components manufactured from low alloy steel and exposed to an external ambient environment. The aging effect is managed by the Boric Acid Corrosion Prevention Program. The applicant identified the components requiring management are the main flange bolts. The aging effect is not identified in GALL for this component, however, the AMP is consistent with the NUREG-1801 AMP description in Section XI.M10. The aging effect for the main flange bolts is consistent with GALL for this component, environment, and material and the AMP is consistent with the NUREG-1801 AMP description in Section XI.M10. The applicant stated that the Boric Acid Corrosion Prevention Program relies on the implementation of recommendations in NRC Generic Letter (GL) 88-05, “Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants,” to monitor the condition of ferritic steel components on which borated reactor water may leak. The applicant stated that periodic visual inspection of adjacent structures, components, and supports for evidence of leakage and corrosion is an element of the GL 88-05 monitoring program.

The applicant did not identify which aging mechanisms could lead to loss of material in the above components that are fabricated from alloy steel or carbon steel, although the AMP credited with aging management appears to imply that the applicant only considers potential leakage of the borated coolant as a mechanism that could induce loss of material from the external surfaces of these components. Alloy steel and carbon steel components may also be susceptible to general corrosion in atmospheric environments if the atmospheres are damp, moist or humid.

The staff requests that the applicant identify the aging mechanism that CNP has determined are capable of inducing loss of material in alloy steel or carbon steel of the above components that are exposed externally to the inside environments. In addition, the applicant is requested to describe the inside environment and whether the applicant is managing the water vapor content in the inside environment to low humidity levels. The staff seeks further clarification on

whether the applicant considers loss of material due to general corrosion as an applicable aging effect for external surfaces of alloy steel or carbon steel components that are exposed to the inside environment. If not, the applicant is requested to provide technical justification why CNP does not consider general corrosion to be an aging mechanism that needs management in the external surfaces of alloy steel or carbon steel components during the extended periods of operation.