

July 2, 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 Sections B.1.1, B.1.2, B.1.9, and 4.7.2 (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 2, 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 Sections B.1.1, B.1.2, B.1.9, and 4.7.2 (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.: ML041840194

DISTRIBUTION: See next page

Document Name: C:\ORPCheckout\FileNET\ML041840194.wpd

OFFICE	PM:RLEP	LA:RLEP	SC:RLEP
NAME	JRowley	MJenkins	SLee
DATE	6/30/04	6/30/04	7/2/04

OFFICIAL RECORD COPY

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

M. Schneider
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

Attorney General
Department of Attorney General
525 West Ottawa Street
Lansing, MI 48913

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 B.1.1, “Alloy 600 Aging Management”

RAI B.1.1.2-1

The applicant’s commitment did not identify that the lessons learned from industry initiatives and research will become part of the Alloy 600 Aging Management Program. Since the program has not been developed, the applicant has not demonstrated that the Alloy 600 Aging Management Program will identify and assist in managing the effects of Age Related Degradation Mechanisms (ARDM).

The staff requests the applicant to modify commitment A.2.1.1 and the Program Description to state that lessons learned from industry initiatives and research will be used as part of the Alloy 600 Aging Management Program. The commitment needs to state that the Alloy 600 Aging Management Program will be submitted for staff review and approval three years prior to the period of extended operation to determine if the program demonstrates an ability to manage the effects of aging per 10 CFR 50.54.21(a)(3).

RAI B.1.1.2-2

Detection of Aging Effects: The applicant stated that the Alloy 600 aging Program will be able to detect cracking by PWSCC prior to loss of component intended function. The applicant stated that the components will receive a volumetric examination during each inspection interval in accordance with the 1989 Edition of ASME Section XI, Examination Category B-F.

The applicant also stated that the intent of this element was to detect cracking by PWSCC prior to the loss of component intended function without the justification to support the program’s ability to accomplish this.

The staff requests the applicant to provide justification, including codes and standards referenced, that the technique and frequency used in the Alloy 600 Aging Management Program are adequate to detect the aging effects before a loss of system or component function occurs.

RAI B.1.1.2-3

Acceptance Criteria: The applicant stated that the acceptance criteria for volumetric and visual inspections will be based upon the requirements in ASME Section XI.

As a minimum, the applicant is required by 10 CFR 50.55a to comply with the flaw acceptance criteria specified for ASME Class 1 components in the ASME Code Section XI, Articles

Enclosure

IWA-3000 and IWB-3000, regardless of whether the material is fabricated from Alloy 600. The applicant may use alternative acceptance criteria either by the applicant or the industry if the alternative criteria have been submitted to and accepted by the staff pursuant to 10 CFR 50.55a(a)(3). The acceptance criteria stated was not definitive enough to determine if the applicant would allow pressure boundary leakage if the fracture mechanics analysis proved that the component could perform its intended function.

The staff requests the applicant to discuss the process for calculating specific numerical values of conditional acceptance criteria to ensure that the structure and component intended functions will be maintained under all CLB design conditions. The discussion needs to focus on how pressure boundary leakage due to PWSCC will be handled.

CNP LRA Section B.1.2, “Bolting and Torquing Activities”

RAI B.1.2.2-1

Program Scope: The applicant stated that the Bolting and Torquing Activities Program covers bolting in high temperature systems and in applications subject to significant vibration, as identified in the aging management reviews.

The Program Scope did not identify the applicable AMP’s that are credited with managing age related degradation of bolting or threaded fasteners.

The staff request the applicant identify the AMP’s that are credited with managing age related degradation of bolting and/or threaded fasteners and identify the material and the systems they are in.

RAI B.1.2.2-2

Preventive Actions: The applicant stated that the Preventive Actions include proper selection of bolting material and use of appropriate lubricants and sealants in accordance with Electric Power Research Institute (EPRI) guidelines. The applicant stated that the initial inspection of bolting for pressure-retaining components includes a check of the bolt torque and uniformity of the gasket compression after assembly. Hot torque checks are not applied to all bolted closures within the scope of this program, but are controlled procedurally if it is a vendor-recommended action or if it is determined that hot torque is necessary on a case-by-case basis.

The Preventive Actions did not clearly indicate what EPRI guidelines would be utilized to select proper bolting material, lubricants and sealants. The applicant did not identify what actions and materials would be used for replacement to demonstrate acceptable management of ARDMs.

The staff requests the applicant to identify the EPRI guidelines to be used for selection of bolting materials lubricants and sealants, including specific actions and material replacements to demonstrate acceptable management of ARDMs. Also, provide an example of a case by case basis that would require a hot torque check of a bolted closure.

RAI B.1.2.2-3

Parameters Monitored or Inspected: The applicant stated that torque values are monitored when the bolted closure is assembled. The applicant also stated that maintenance personnel visually inspect components involving bolted closures to assess their general condition during maintenance. Gaskets, gasket seating surfaces, and fasteners are inspected for damage that would prevent proper sealing.

The staff found that this element does not provide adequate detail to assure that ARDMs are managed. Since closure bolting is exposed to air, moisture, and leaking fluid (boric acid) environments, it is subject to loss of material and crack initiation and growth.

The staff requests the applicant to: (a) inspect the bolting closures during maintenance, (b) confirm that the program inspections are integrated with the CNP ISI program and the results are tracked within the CNP ISI program, (c) confirm the visual inspections are performed in accordance with ASME Code Section XI, and (d) provide justification for excluding loss of material and crack initiation and growth from this element.

RAI B.1.2.2-4

Detection of Aging Effects: The applicant stated that the Detection of Aging Effects is a preventive program. The applicant stated that actions performed under the program prevent the aging effect of loss of mechanical closure integrity. The applicant stated this program is credited with managing the loss of mechanical closure integrity for bolted connections and bolted closures.

The applicant stated that the intent of this element was to manage the loss of mechanical closure integrity for bolted connections and bolted closures. However, the applicant did not provide justification to support the program's ability to accomplish this.

The staff requests the applicant to provide justification, including codes and standards referenced, that the technique and frequency used at CNP are adequate to detect the aging effects before a loss of component function occurs.

RAI B.1.2.2-5

Monitoring and Trending: The applicant stated that torque values are monitored during the bolt torquing process, and that trending is not applicable to this program.

The staff finds that this element does not provide adequate detail to assure that ARDMs are adequately managed. The applicant previously stated that maintenance personnel perform visual inspections to assess the general conditions in the bolted closures.

The staff requests the applicant to confirm that the program inspections are integrated with the CNP ISI program and state where the results of these visual inspections are being integrated. Further, please provide justification for not trending the results of the visual inspections.

RAI B.1.2.2-6

Acceptance Criteria: The applicant stated that the acceptance criteria are provided in CNP site procedures. The applicant stated that a typical criterion is that mating surfaces are smooth and free of major defects. Other criteria include proper and adequate thread engagement and use of appropriate torque values.

The NRC staff found that the applicant's acceptance criteria was not definitive enough to determine if the applicant would allow pressure boundary leakage if the component could perform its intended function.

The staff requests the applicant to discuss how pressure boundary leakage will be handled and what requirements would be utilized to determine what is considered acceptable leakage and when a repair/replacement is considered necessary.

CNP LRA Section B.1.9, "Control Rod Drive Mechanism and Other Vessel Head Penetration Inspection"

RAI B.1.9.2-1

Program Description: The applicant stated that the Control Rod Drive Mechanism and Other Vessel Head Penetration Inspection Program is comparable to the program described in NUREG-1801 with an exception. The program is based on responses to NRC Bulletins 2002-01 and 2002-02, instead of GL 97-01.

The Program Description submitted in the application did not include reference to the NRC Bulletin 2003-02, NRC Order EA-03-009 dated February 11, 2003, and the First Revised NRC Order EA-03-009 dated February 20, 2004 as part of the CLB for the Control Rod Drive Mechanism and Other Vessel Head Penetration Inspection.

The staff requests the applicant to update its Program Description to include reference to NRC Bulletin 2002-01, 2002-02, 2003-02, Order EA-03-009 dated February 11, 2003 and the First Revised NRC Order EA-03-009 dated February 20, 2004.

RAI B.1.9.2-2

Preventive Actions: The applicant stated in the Program Description that ASME Section XI, Inservice Inspection and Water Chemistry Control Programs are used in conjunction with this program to manage cracking of the reactor vessel head penetrations.

The applicant did not state that material replacement was an available option to prevent or mitigate the potential for PWSCC.

The staff requests the applicant to include a preventive action section in its program to include examples of actions taken or to be taken to prevent ARDMs, the types of materials considered for replacement, and also include compliance with the First Revised NRC Order EA-03-009 or successor regulatory requirements.

RAI B.1.9.2-3

Parameters Inspected or Monitored: The staff reviewed this element and concluded that the applicant needs to provide information for this element.

The applicant stated that the program monitors the effects of PWSCC on the intended function of the CRDM and other Alloy 600 head penetrations by detection and sizing of cracks and coolant leakage by ISI. The staff requests the applicant to state that monitoring will be in accordance with the First Revised Order EA-03-009 dated February 20, 2004 and also identify specifically how cracks will be sized.

RAI B.1.9.2-4

Detection of Aging Effects: NUREG-1801 identifies that the scope and schedule of inspections, including the leakage detection system is based on NRC GL 97-01. The applicant stated that the CNP program is based on responses to NRC Bulletins 2002-01 and 2002-02, instead of NRC GL 97-01.

The staff requests the applicant to update its Control Rod Drive Mechanism and Other Vessel Head Penetration Inspection program to include reference to Bulletin 2002-03, Order EA-03-009 dated February 11, 2003, and the First Revised Order EA-03-009 dated February 20, 2004 as the basis for scope and schedule of the inspections. Also, the program needs to identify any enhanced leakage detection methods used for detecting small leaks during plant operation and identify programs and models used to assess PWSCC susceptibility for CNP.

RAI B.1.9.2-5

Monitoring and Trending: NUREG-1801 states inspection schedules are based on the susceptibility assessments in GL 97-01.

The staff requests the applicant to update B.1.9 to include a Monitoring and Trending element. The element should include current inspection schedules and frequency of inspections based on any findings of initial inspections, how inspection results are used to update susceptibility models, and identify models that are used to evaluate crack growth and flaw evaluations.

RAI B.1.9.2-6

Acceptance Criteria: NUREG-1801 states that any indication detected needs to be evaluated in accordance with Section XI of the ASME Code or other acceptable flaw evaluation criteria. To verify the adequacy of the long-term inspection program and acceptance criteria and assess if there have been significant changes since the applicants response to NRC GL 97-01, the applicant should provide references to appropriate industry model revisions or provide updated information on crack initiation and crack growth data and models used.

The staff requests the applicant to update B.1.9 to include an Acceptance Criteria element and to provide updated information on crack initiation and crack growth data and models used. Additionally, include references to the NRC Bulletins 2002-01, 2002-02, 2003-02, Order EA-03-009 dated February 11, 2003, and the First Revised NRC Order EA-03-009.

CNP LRA Section 4.7.2, "ASME Code Case N-481"

RAI 4.7.2.1-1

The applicant's TLAA for the ASME Code Case N-481 did not indicate if the generic WCAP-13045 or the CNP specific WCAP-13128 was reviewed and approved by the NRC.

The staff request the applicant provide documentation which identifies that the NRC staff reviewed and approved WCAP-13045 and WCAP-13128. If the reports were not previously submitted, then the applicant is requested to submit WCAP-13045 and WCAP-13128 for NRC review and approval.