



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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September 22, 2004

MEMORANDUM TO: P.T. Kuo, Branch Chief  
License Renewal and Environmental Impacts Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation  
**/RA/**

FROM: Dale F. Thatcher, Section Chief  
Quality and Maintenance Section  
Plant Support Branch  
Division of Inspection Program Management  
Office of Nuclear Reactor Regulation

SUBJECT: AUDIT TRIP REPORT REGARDING THE INDIANA MICHIGAN POWER  
COMPANY LICENSE RENEWAL APPLICATION FOR THE DONALD C.  
COOK NUCLEAR PLANT, UNITS 1 AND 2, DATED OCTOBER 31, 2003

Plant Name: Donald C. Cook Nuclear Plant  
Utility Name: Indiana Michigan Power Company  
Docket No.(s): 50-315 (DPR-58)  
50-316 (DPR-74)  
TAC No.(s): MC1202  
MC1203  
Review Branch: IPSB  
Review Status: Pending resolution of Requests for Additional Information (RAIs)

From January 13 to 16, 2004, the Emergency Preparedness and Plant Support Branch (IEPB) performed an audit of the Indiana Michigan Power Company (the applicant) license renewal scoping and screening methodology developed to support the Donald C. Cook Nuclear Plant license renewal application (LRA), dated October 31, 2003. The focus of the staff's audit was evaluation of the applicant's administrative controls governing implementation of the LRA scoping and screening methodology and review of the technical basis for selected scoping and screening results for various plant systems, structures, and components (SSCs). The audit team also reviewed quality attributes for aging management programs, training for license renewal project personnel, and quality controls applied to the LRA development process. A trip report containing a summary of the audit results is attached.

Should you require additional information, please contact Greg Galletti, of my staff, at 415-1831.

Attachment: As stated

CONTACT: Greg Galletti, NRR/DIPM/IPSB  
301-415-1831

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DATE	9/22/04	9/22/04					

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**Trip Report Regarding the  
Indiana Michigan Power Company  
License Renewal Application (LRA) for the  
Donald C. Cook Nuclear Plant, Units 1 and 2, dated October 31, 2003**

## **I. Introduction**

From January 13 to 16, 2004, Kevin Coyne, Wayne Scott, and Greg Galletti, Emergency Preparedness and Plant Support (IEPB) staff, audited the Indiana and Michigan Power Company (the applicant) license renewal scoping and screening methodology developed to support the Donald C. Cook nuclear Plant, Units 1 and 2, license renewal application (LRA). The audit was performed at the Indiana Michigan Power Company offices in Buchanan, Michigan. The focus of the staff's audit was evaluation of the applicant's administrative controls governing implementation of the LRA scoping and screening methodology and review of the technical basis for selected scoping and screening results for various plant systems, structures, and components. The audit team also reviewed quality attributes for aging management programs, training for license renewal project personnel, and quality controls applied to the LRA development process.

## **II. Background**

Title 10 of the *Code of Federal Regulations*, Part 54 (10 CFR Part 54), "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," Section 54.21, "Contents of Application — Technical Information," requires that each application for license renewal contain an integrated plant assessment (IPA). Furthermore, the IPA must list and identify those structures and components (SCs) that are subject to an aging management review (AMR) from the systems, structures, and components (SSCs) that are within the scope of license renewal. 10 CFR 54.4(a) identifies the plant systems, structures, and components (SSCs) within the scope of license renewal. Structures and components (SCs) within the scope of license renewal are screened to determine if they are long-lived, passive equipment that is subject to an aging management review in accordance with 10 CFR 54.21(a)(1).

## **III. Scoping Methodology**

System- and structural-level scoping evaluations for the D. C. Cook LRA were performed by the applicant and documented in an individual system scoping report (ISSR) for each system and structure. The applicant forwarded completed ISSRs to Entergy, the applicant's prime contractor for the LRA effort, for identification of structures and components that were subject to further aging management review. The audit team conducted detailed discussions with the applicant's license renewal project management personnel and reviewed documentation pertinent to the scoping process. The audit team assessed if the scoping methodology outlined in the LRA and implementation procedures was appropriately implemented and if the scoping results were consistent with current licensing basis requirements. The audit team also reviewed a sample of system scoping results for the following systems: ice condenser, auxiliary feedwater, emergency core cooling, and main feedwater.

In general, the team determined that the applicant's overall approach to license renewal SSC scoping appeared to be adequate. However, the audit team identified several issues where additional information will be required to complete the LRA review. These issues are described below:

- The impact of the alternate source methodology (10 CFR 50.67(b)(2)) on the scoping of safety-related SSCs pursuant to 10 CFR 54.4(a)(1). In particular, the applicant has submitted a license amendment application to allow use of the alternate source term (AST) methodology for control room habitability and offsite dose analyses. The staff has approved use of the alternate source term for control room habitability dose evaluations, but approval of the alternate source term methodology for offsite dose has not yet been approved. The staff intends to request the applicant to describe how use of the alternate source term method was factored into scoping evaluations. Additionally with regard to the portion of the AST methodology currently under review by the staff, the applicant should describe their plans for evaluating the license renewal scoping impact should the staff approve use of the AST for offsite dose consequences evaluations.
- In Section 2.1.1.1, "Application of Safety-Related Scoping Criteria," of the LRA, the applicant stated that, because of plant-unique considerations or preferences, some components were classified as safety-related in the facility database that did not perform any of the safety-related intended functions of 10 CFR 54.4(a)(1). In these cases, the applicant stated these components may have been considered outside the scope of 10 CFR 54.4(a)(1). During the audit, the applicant described the process used to evaluate components classified as safety-related that did not perform a safety-related intended function. As part of the process, the applicant stated that, in many cases, the safety-classification of many safety-related components was re-evaluated in order to reconcile differences between scoping determinations and facility database information. The staff intends to issue an RAI in order to obtain a description of the process used to handle components classified as safety-related that do not perform a safety-related intended function. In particular, the staff requires the following information:
  - a. A description of any components or structures classified as safety-related in the site safety-classification database that were not included within the scope of license renewal under the 10 CFR 54.4(a)(1) criteria. This description should include the basis for determining that these components do not perform a safety-related intended function. The response should also indicate if these components were included within the scope of license renewal under a different scoping criteria (e.g. §54.4(a)(2) or (a)(3)).
  - b. Describe how components originally classified as safety-related in the component cooling water miscellaneous header were addressed during scoping evaluations. (This information request may be addressed by DSSA RAI 2.3.x-x).
  - c. Describe the process used to reconcile the facility database safety classification information with scoping intended function determinations. In particular, the staff requests a description and scope of the process used to re-classify safety-classification information with intended function determinations.

- A description of how insulation was addressed during scoping evaluations. In particular, the applicant should describe any intended functions performed by insulation or the basis for determining that insulation (e.g. piping insulation) was outside the scope of license renewal.
- For nonsafety-related piping attached to safety related piping, the applicant stated in Section 2.1.1.2.2, “Spatial Failures of Nonsafety-Related SSCs,” that the nonsafety-related piping and supports up to and including the first equivalent anchor beyond the safety/nonsafety interface were within the scope of license renewal and subject to aging management review. However, during the audit, the applicant stated that the location of the first equivalent anchor point has not been physically located in the as-built plant. Therefore, the staff requires additional information regarding the process used by the applicant to ensure that all nonsafety-components and structures between the safety/nonsafety interface and the first equivalent anchor point were adequately considered during scoping. In particular, the applicant should describe the method used to ensure that all material/environment combinations between the safety/nonsafety interface and the first equivalent anchor were considered during aging management review.
- Section 2.1.1.2.2, “Spatial Failures of Nonsafety-Related SSCs,” of the LRA states that nonsafety-related systems and nonsafety-related portions of safety-related systems containing steam or liquid that are near safety-related equipment are considered within the scope of license renewal per 10 CFR 54.4(a)(2). However, this section of the LRA also states that long-term exposure to conditions resulting from a failed nonsafety-related SSC (such as leakage or spray) is not considered credible. The staff intends to request that the applicant clarify its position and methodology relative to the consideration of spray and wetting of safety-related SSCs due to the failure of nonsafety-related equipment. Specifically, the applicant should address the following:
  - a. Clarify how the determination that long-term exposure to conditions resulting from a failed nonsafety-related SSC was not considered credible was applied during scoping evaluations. Specifically address if nonsafety-related SSCs were excluded from the scope of license renewal based on this determination.
  - b. Describe how the effects of short-term wetting and spray on passive and active safety-related SSCs were considered during 10 CFR 54.4(a)(2) scoping. During the methodology audit, the applicant indicated that the methodology for evaluating spatial interactions assumed that safety-related SSCs were capable of withstanding short-term duration spray and wetting without loss of intended function. The applicant should clarify how the effects of short term spray and wetting were considered during scoping. Furthermore, if it was assumed that safety-related SSCs could withstand short-term spray or wetting without loss of intended function, the applicant should describe the basis for this assumptions.
  - c. Identify if the walkdown aging management program described in Section B.1.38, “System Walkdown,” of the LRA was used as the sole aging management program for any nonsafety-related structures or components that could potentially spatially interact with safety-related SSCs. If the effects of aging for any nonsafety-related SSC are managed solely by the system walkdown aging management program, the applicant should describe how the effects of short term spray and wetting were considered during scoping and aging management review evaluations.

The staff will complete the evaluation of the applicant's scoping methodology pending resolution of these issues.

#### **IV. Screening Methodology**

The audit team reviewed the methodology used by the applicant to determine if mechanical, structural, and electrical components within the scope of license renewal would be subject to further aging management review. The applicant provided the staff with a detailed discussion of the processes used for each discipline (i.e. mechanical, structural, and electrical) and provided technical reports that described the screening methodology as well as a sample of the screening results reports for a selected group of safety-related and nonsafety-related systems. The team noted that Section 2.1.2.4.1, "Packing, Gaskets, Component Seals, and O-Rings," of the LRA stated that certain types of consumable were not subject to condition or performance monitoring where it could be demonstrated that specific criteria were met. During the methodology audit, the applicant was unable to describe the method used to demonstrate that the criteria described in Section 2.1.2.4.1 were met. Pending resolution of this issue, the audit team determined that the screening methodology was consistent with the requirements of the Rule, and that the screening methodology will identify SCs that meet the screening criteria of 10 CFR 54.21(a)(1).

#### **V. Aging Management Program Quality Assurance Attributes**

The audit team evaluated the quality attributes of the applicant's Aging Management Program (AMP) activities described in Appendix B, "Aging Management Programs and Activities," of the LRA. Guidance for the staff review of this area is contained in NUREG-1800, Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)." As described in Branch Technical Position IQMB-1, the AMP quality attributes for safety-related components and structures are adequately addressed by the Quality Assurance requirements of 10 CFR 50, Appendix B. For nonsafety-related structures and components subject to an AMR, the applicant has the option to expand the scope of its 10 CFR Part 50 Appendix B program to include nonsafety-related structures and components to address corrective actions, the confirmation process, and administrative controls for aging management during the period of extended operation. Based on the staff's evaluation, the quality attributes (corrective action, confirmation process, and administrative controls) described in Section B.0.3, "CNP Corrective Actions, Confirmation Process, and Administrative Control," are generally consistent with Branch Technical Position IQMB-1. However, the team determined that the applicant has not described the AMP quality attributes in Appendix A, "Updated Final Safety Analysis Report Supplement." Consistent with Branch Technical Position IQMB-1, applicant should either document a commitment to expand the scope of its 10 CFR Part 50 Appendix B program to include nonsafety-related structures and components subject to an AMP to address the AMP quality attributes during the period of extended operation or propose an alternative means to address this issue. The staff intends to issue an RAI in order to clarify the applicant's commitments related to addressing the quality attributes of AMPs applicable to nonsafety-related structures and components subject to aging management.

#### **VI. Quality Assurance Controls Applied to LRA Development**

The audit team reviewed the quality assurance controls used by the applicant to provide reasonable confidence that the LRA scoping and screening methodologies were adequately implemented. Although the applicant did not develop the LRA under a 10 CFR 50, Appendix B quality assurance program, the audit team determined that the applicant utilized the following quality assurance processes during the LRA development:

- Implementation of the scoping and screening methodology was governed by written procedures and guidelines.
- Although much of the LRA development was performed by contractors, the applicant developed procedures to govern the conduct of owner acceptance reviews of contractor work products. For example, License Renewal Project Guideline LRP-PG-12, "Owner's Acceptance Review," described the process used by the applicant to review license renewal project documents provided by Entergy. Documents subject to this acceptance review included aging management review reports, time-limited aging analyses, and aging management program evaluation reports.
- The LRA was reviewed and approved by the Nuclear Safety Audit Review Board and the Plant Operation Review prior to submittal to the NRC. Additionally, the applicant developed procedural guidance for a final review of the LRA prior to submittal to the NRC.
- The applicant planned to retain certain license renewal document, such as aging management reports, individual system scoping reports, time-limited aging analyses, and topical reports, as quality records.
- The applicant performed a peer review and two self assessments of license renewal activities.

The audit team concluded that these quality assurance activities, which exceeded current regulatory requirements, provided additional assurance that LRA development activities were performed consistently with the LRA descriptions.

## **VII. Training for License Renewal Project Personnel**

The audit team reviewed the applicant's implemented training process to ensure the guidelines and methodology for the scoping and screening activities would be performed in a consistent and appropriate manner. The training of the license renewal project team was found to be incremental, iterative, and adapted to the needs of the tasks to be performed. Initially, a core group of three persons was trained by being required to read a family of documents and certify they had done so. That family of 28 documents is listed in Attachment 6, "Training Requirements," to LR-PG-02, "License Renewal Program Plan." The second group of personnel trained was subject matter experts. Ultimately, at least overview-level training was given to everyone working with the license renewal project. Trainees numbered about 100, including AEP employees, contractors working directly on the project, and Framatome and Entergy subcontractors. Formal classroom training of from 2 hours to 8 hours was provided; for example, the former was provided to managers, the latter, to in-depth participants. The training was focused on the level necessary to perform assigned tasks. The training requirements were categorized in the LR-PG-02 Training Requirements matrix among license renewal project

personnel who prepared or reviewed various documents, such as scoping documents, AMRs, program evaluations, TLAAs, and the LRA, and among site personnel who reviewed or approved those same documents. Completed training was documented on individual "License Renewal Training Documentation" forms, also from Attachment 6 to LR-PG-02. Periodic meetings were held with various system owners to provide understanding of issues and proposed solutions. Interviewed LRA team members appeared very knowledgeable of the requirements and activities associated with scoping and screening.

On the basis of discussions with the applicant's license renewal project team responsible for the scoping and screening process, and a review of selected design documentation in support of the process, the audit team concluded that the applicant's staff understood the requirements of and adequately implemented the scoping and screening methodology established in the applicant's renewal application. The audit team did not identify any significant concerns regarding the training of the applicant's license renewal project team or contractors.

### **VIII. Exit Meeting**

A public exit meeting was held with the applicant on January 16, 2004 to discuss the results of the scoping and screening methodology audit. The audit team identified the preliminary areas where additional information would be required prior to completion of the staff review. The staff informed the applicant that these areas will be documented in a forthcoming request for additional information.

### **IX. Documents Reviewed**

LRP-PG-01	"License Renewal Project Guideline," Revision 5
LRP-PG-02	"License Renewal Program Plan," Revision 1
LRP-PG-03	"Structural Screening and Aging Management Reviews," Revision 0
LRP-PG-04	"Mechanical System Screening and Aging Management Review," Revision 0
LRP-PG-05	"Electrical System Scoping, Screening, and Aging Management Reviews," Revision 0
LRP-PG-06	"Topical Reports," Revision 1
LRP-PG-14	"10 CFR 54.4(a)(2) nonsafety-related SSC Affecting Safety-related SSC," Revision 0
LRP-PG-12	"Owner's Acceptance Reviews," Revision 1
LRP-PR-01	"Final System and Structure Scoping Report"
LRP-MAMR-35	"Aging Management Review of Nonsafety-related Systems and Components Affecting Safety-related Systems," Revision 0

### **X. Personnel Contacted During Methodology Audit**

Richard Grumbir	CNP LR Project Manager
Ted Ivy	Entergy/Framatome
Bob Kalinowski	CNP License Renewal Technical Lead
Larry Lindquist	CNP License Renewal Project
Jacque Lingenfelter	Entergy/Framatome
Ralph Schlichter	CNP License Renewal Project
John Zwolinski	CNP Design engineering and Regulatory Affairs
Johnny Eads	NRC License Renewal Project Manager, NRR
Laura Kozak	NRC Senior Project Engineer, Region III