



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 15, 2004

LICENSEE: Indiana Michigan Power Company

FACILITY: Donald C. Cook, Units 1 and 2

SUBJECT: SUMMARY OF MEETING BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION (NRC) STAFF AND INDIANA MICHIGAN POWER COMPANY REPRESENTATIVES TO DISCUSS THE DONALD C. COOK NUCLEAR PLANT, UNITS 1 AND 2 LICENSE RENEWAL APPLICATION

On November 12, 2003, the NRC staff met with members of Indiana Michigan Power Company (the applicant) in a public meeting to discuss the license renewal application (LRA) for the Donald C. Cook (Cook) Nuclear Plant, Units 1 and 2. The application was submitted by letter dated October 31, 2003. The list of attendees is provided in Enclosure 1, and the meeting agenda is provided in Enclosure 2. A copy of the slides used by the applicant are provided as Enclosure 3.

Mr. Johnny Eads, NRC Lead Project Manager for the review of the Cook LRA, provided opening remarks and introductions of meeting participants. Mr. Eads discussed the proposed schedule for the first portion of the LRA review. Mr. Richard Grumbir and Mr. Robert Kalinowski of Indiana Michigan Power Company provided an overview of the content of the Cook LRA. The applicant explained the methodology used in determining consistency with "NUREG-1801, Generic Aging Lessons Learned (GALL) Report," and previously approved staff positions.

/RA/

A handwritten signature in black ink, appearing to read "Johnny H. Eads", is written over the typed name.

Johnny H. Eads, 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

Enclosures: As stated

cc w/encl: See next page

Donald C. Cook Nuclear Plant, Units 1 and 2

cc:

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

Meeting Attendance List - November 12, 2003

<u>Name</u>	<u>Organization</u>
Richard Grumbir	American Electric Power/Indian Michigan Power
Neil Haggerty	American Electric Power/Indian Michigan Power
Bob Kalinowski	American Electric Power/Indian Michigan Power
Alan Cox	Entergy Nuclear
Garry Young	Entergy Nuclear
Mark Hager	Framatome/Entergy
Mark Rinckel	Framatome/Entergy
Ben Gitnick	Information Systems Laboratories
Steve Pope	Information Systems Laboratories
Gregory Twachtman	McGraw-Hill
Stewart Bailey	NRC
Thomas Cheng	NRC
Om Chopra	NRC
Kevin Coyne	NRC
Gregory Cranston	NRC
Johnny Eads	NRC
John Fair	NRC
Edwin Forrest	NRC
Frank Gillespie	NRC
Raul Hernandez	NRC
Robert Hsu	NRC
Naeem Iqbal	NRC
Peter Kang	NRC
T. J. Kim	NRC
P. T. Kuo	NRC
Chang-Yang Li	NRC
Yueh-Li Li	NRC
Gregory Makar	NRC
Subinoy Mazumdar	NRC
Samuel Miranda	NRC
Eric Reichelt	NRC
Simon Sheng	NRC
Jim Strnisha	NRC
David Terao	NRC
Henry Wagage	NRC
Harold Walker	NRC
Steven West	NRC
Dave Flyte	Susquehanna
Carey Fleming	Winston and Strawn, LLP

**MEETING BETWEEN THE NRC STAFF AND INDIANA MICHIGAN POWER COMPANY
LICENSE RENEWAL APPLICATION FOR D. C. COOK, UNITS 1 AND 2
ROCKVILLE, MARYLAND
ROOM O-13B4
PROPOSED AGENDA
(Times are approximate)**

November 12, 2003

- | | | |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| I. | Introduction/Opening remarks | 1:00 p.m. - 1:10 p.m. |
| II. | Presentation of the license renewal application | 1:10 p.m. - 1:40 p.m. |
| III. | Explanation of methodology used in determining consistency with Generic Aging Lessons Learned (GALL) and previously approved staff positions | 1:40 p.m. - 2:30 p.m. |
| IV | Public Comments | 2:30 p.m. - 2:50 p.m. |
| V. | Adjourn | 3:00 p.m. |

Enclosure 2

**License Renewal Application
Kick-off Meeting Slides
November 12, 2003**

Enclosure 3

Donald C. Cook Nuclear Plant

***License Renewal Application
Kick-off meeting
November 12, 2003***



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Donald C. Cook Plant

- **Introductions**
- **D.C. Cook facility**
- **License Renewal Project**
- **License Renewal Application**
- **Past Precedence**
- **Support for Pilot review process**

Donald C. Cook Plant

- **Commercial in 1974/1977**
- **Westinghouse 4-Loop PWR**
- **Ice Condenser**
- **3304/3468 MWt rating**
- **Lake Michigan Heat Sink**

Donald C. Cook Plant

- **Restart Effort 1997-2000:**
 - **Re-established control of design/licensing basis**
 - **Reviewed station processes and programs**
 - **Programs assessed and updated if necessary**
 - **Ice Condenser refurbishment**
 - **Extensive refurbishments (MOV, S/G replacement, etc)**
 - **Several Plant Modifications (HELB, etc)**

Donald C. Cook Plant

- **Long Term commitment to Operation:**
 - **Steam Generator replacement 1989/2000**
 - **Reactor vessel head replacement planned for 2006/2007**
 - **Equipment reliability improvement efforts**
 - **Traveling screen replacement**
 - **Digital turbine controls (Main & MFW)**
 - **EDG governor & Voltage Regulator replacement**
 - **Major pump rebuilds**
 - **Turbine rotor/MSR**
 - **Reserve Auxiliary Transformers**
 - **Conversion to ITS w/24 Month surveillance extension**



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Donald C. Cook Plant

- **New Management:**
 - **Increased vision/focus to improve upon:**
 - **Human Performance**
 - **Organizational Effectiveness**
 - **Design Basis**
 - **Self-Improving Culture & Learning Organization**
 - **Operational Focus**
 - **Equipment Reliability**
 - **Focus on Prevention/Detection/Correction – maximizing time spent on preventing issues and less time on correcting them**



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License Renewal Project



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License Renewal Project

- **Project initiated 2001**
- **Established dedicated CNP team to oversee prime contractor efforts. Team collectively has Operations/Maintenance/Engineering/Licensing experience**
- **Dedicated CNP staff actively involved in NEI, WOG, and LR Working Groups**
- **Prime Contractors: Framatome/Entergy & TetraTechNUS**
 - **Framatome experience with 8+ LRAs. Ideal when combined with Entergy staff – bringing proven experience to the team.**
 - **TtNUS has been involved in ~19 ERs.**



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License Renewal Application

- **Follows "Class of 2003" format**
- **Conservative Approach to Consistent w/GALL**
- **TLAA – thorough review of CLB to identify potential TLAA**
- **ISGs addressed, as appropriate**
- **Previous RAIs were considered and addressed, as appropriate**
- **Non-GALL programs – 10 elements listed in Appendix B**

DC Cook LRA Precedent Review



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DC Cook LRA Precedent Review

Objective:

- Support NRR Audit team reviews by identifying potential past precedence regarding previously acceptable positions
- GALL contains accepted aging management strategies for specific combinations of component, material, environment, and aging effect
- Past precedent is prior NRC approval (Technical evaluation documented in SERs or Draft SERs) of an aging management strategy for a particular combination of parameters and/or aging management programs in the DC Cook LRA that are not consistent with GALL
- DC Cook review was focused on Section 3 table entries with industry notes F through J, as well as plant-specific notes
- Aging Management Programs were also reviewed



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DC Cook LRA Precedent Review

Process:

- *Develop an expanded aging management evaluation table, (Table 3.x.2-X of the LRA with a 10th column added for precedent note)*
- *Develop a precedent reference table, (Table that explains 10th column notes w/reference to past-precedence)*
- *Prioritization of aging management evaluations were based on number of line items (rows in 3.x.2-X) with common Material, Environment, Aging effect, and Programs (MEAP)*
- *Preparation of a programs comparison summary. (Compare CNP program attributes to program attributes as technically evaluated (SER) at the precedent plant)*



DC Cook LRA Precedent Review

Table 3.x.2-X:

- Status: drafted, review to follow
- Significant percentage of table entries are consistent with GALL or have a past precedent
- Preliminary results by system groups are:
 - RCS 95%
 - ESF 80%
 - Aux 75%
 - Steam & Power Conversion 90%
 - Civil 95%
 - Electrical 65%
 - Overall 80%
- GALL consistencies in CNP LRA were at ~30%

DC Cook LRA Precedent Review

Expanded Table 3.3.2-4
Compressed Air Systems
Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Vol. 2 Item	Notes	Precedent. Table Item
Fittings	Pressure boundary	Brass	Air (external)	None	None		F	BR-01

Generic notes

F Material not in NUREG-1801 for this component.

Precedent Reference Table Notes for
Expanded LRA Section 3 Aging Management Evaluation Tables

Precedent Table Item	Material	Environment	Aging Effect	Program(s)	Precedence Reference	LRA Reference	Program Comparison
BR-01	Brass	Air (external)	None	None	St. Lucie SER indicates agreement that this material environment produces no aging effects in Section 3.3.8.2.1.	St. Lucie LRA Table 3.3-8.	None required



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DC Cook LRA Precedent Review

Programs:

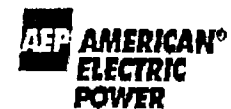
- **Status:**

- **Past Precedent program comparison ~ 75% drafted**
- **CNP Project Team review in progress**
- **Will be complete prior to on-site audit**

DC Cook LRA Precedent Review

Cook Nuclear Plant AMP	GALL Consistency Comparison			CMS	Precedence Plant
	Consistent W/GALL	GALL with exceptions	No GALL Program		
Alloy 600 Aging Management			✓	N	McGuire/Catawba**
Bolting and Torquing			✓		ANO-1
Boral Surveillance			✓		None Found
Boric Acid Corrosion	✓			E	N/A
BMI Thimble Tube Inspection			✓		McGuire/Catawba**
Buried Pipe Inspection		✓		N	Robinson
Cast Austenitic Stainless Steel Evaluation	✓			N	N/A
Containment Leakage Rate Testing	✓				N/A
CRDM and other VHP Inspection		✓			V.C. Summer**
Diesel Fuel Monitoring		✓			TBD**
Fire Protection		✓		E	TBD**
Fire Water System		✓		E	TBD**
Flow-Accelerated Corrosion	✓				N/A
Heat Exchanger Monitoring			✓	N	ANO-1**
ISI					
ASME Section XI, Sub. IWB, IWC, IWD	✓				N/A
ASME Section XI, Subsection IWE		✓			McGuire/Catawba
ASME Section XI, Subsection IWF	✓				N/A
ASME Section XI, Subsection IWL		✓			McGuire/Catawba
ASME Section XI, Augmented Insp.			✓	E	ANO-1**
Instrument Air Quality			✓	E	ANO-1**
Non-EQ Inaccessible Medium-Voltage Cable	✓			N	N/A
Non-EQ Instrumentation Circuits Test Review		✓		N	V.C. Summer
Non-EQ Insulated Cables and Connections	✓			N	N/A

** Reasonable confidence Past Precedence is Applicable.



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DC Cook LRA Precedent Review

Cook Nuclear Plant AMP	GALL Consistency Comparison			CMS	Precedence Plant
	Consistent w/GALL	GALL with exceptions	No GALL Program		
Oil Analysis			✓		ANO-1
Pressurizer Examinations			✓	E	Oconee, ANO-1
Preventive Maintenance			✓	E	V.C. Summer
Reactor Vessel Integrity	✓			E	N/A
RVI Plates, Forgings, Welds, and Bolting	✓			N	N/A
RVI Cast Austenitic Stainless Steel	✓			N	N/A
Service Water System Reliability		✓		E	GINNA
Small Bore Piping	✓			N	N/A
Steam Generator Integrity	✓				N/A
Structure Monitoring Programs					
Structures Monitoring	✓			E	N/A
Crane Inspection		✓		E	V.C. Summer
Divider Barrier Seal Inspection			✓		McGuire/Catawba
Ice Basket Inspection			✓		McGuire/Catawba
Masonry Wall	✓			E	N/A
System Testing			✓	E	ANO-1**
System Walkdown			✓	E	Robinson
Wall Thinning Monitoring			✓	N	ANO-1**
Water Chemistry Programs					
Primary & Sec. Water Chemistry Ctrl.	✓			E	N/A
Closed Cooling Water Chemistry Control		✓			St. Lucie
Auxiliary Sys. Water Chemistry Control			✓		ANO-1
Chemistry One-Time Inspection	✓			N	N/A
Environmental Qualification	✓				N/A
Fatigue Monitoring		✓		E	McGuire/Catawba**

** Reasonable confidence Past Precedence is Applicable.

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DC Cook LRA Precedent Review

Conclusions:

- **Work in Progress**
- **Challenges faced:**
 - **Time intensive (requires reviewing LRAs, SERs, and RAIs from previous applicants)**
 - **Applicability of precedence is focused on the best possible match**
- **We believe this investment will be beneficial in streamlining NRC reviews**
- **Consistency to previously accepted aging management strategies increased from ~30% (GALL) to ~80% (GALL + Past Precedence)**
- **Looking forward to validating the efficiency gains during upcoming audits**



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DC Cook LRA onsite audits

Available documentation:

- **Scoping reports**
- **Aging management reports**
- **Operating experience report**
- **GALL Program comparison report**
- **TLAA reports**
- **Past Precedence document**
- **Program Notebooks**



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DC Cook LRA onsite audits

Program notebooks:

- **LRA Documents**
 - **GALL Program comparison extract, LRA App. A & B, LRA Commitments**
- **Past Precedence**
 - **Program Comparison Document, Comparison Plant LRA Section(s), Comparison Plant SER Section(s), Comparison Plant**
- **Reference Documents -- Procedures / Program Documents**
- **CLB Documents & Other Pertinent Reference Documents**

DC Cook LRA

Questions?



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January 15, 2004

LICENSEE: Indiana Michigan Power Company

FACILITY: Donald C. Cook, Units 1 and 2

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/RA/ Samson Lee for

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License Renewal and Environmental Impacts Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket Nos.: 50-315 and 50-316

Enclosures: As stated

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