UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

May 5, 2008

Mr. Michael W. Rencheck
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: D. C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2, NRC INTEGRATED INSPECTION REPORT 05000315/2008002; 05000316/2008002

Dear Mr. Rencheck:

On March 31, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your D. C. Cook Nuclear Power Plant, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on April 17, 2008, with Mr. J. Jensen and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Christine A. Lipa, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

DISTRIBUTION:
See next page

Letter to M. Rencheck from C. Lipa dated May 5, 2008

SUBJECT: D. C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2, NRC INTEGRATED INSPECTION REPORT 05000315/2008002; 05000316/2008002

cc w/encl: M. Peifer, Site Vice President
J. Gebbie, Plant Manager
G. White, Michigan Public Service Commission
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Emergency Management Division
MI Department of State Police
T. Strong, Chief, State Liaison Officer, State of Michigan

Mr. Michael W. Rencheck
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: D. C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2, NRC INTEGRATED INSPECTION REPORT 05000315/2008002; 05000316/2008002

Dear Mr. Rencheck:

On March 31, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your D. C. Cook Nuclear Power Plant, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on April 17, 2008, with Mr. J. Jensen and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Christine A. Lipa, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

DISTRIBUTION:
See next page

DOCUMENT NAME: G:\COOK\COOK 2008 002.DOC
☐ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☐ Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII		RIII		RIII		RIII	
NAME	CLipa:cms							
DATE	5/05/08							

OFFICIAL RECORD COPY

Letter to M. Rencheck from C. Lipa dated May 5, 2008

SUBJECT: D. C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2, NRC INTEGRATED INSPECTION REPORT 05000315/2008002; 05000316/2008002

DISTRIBUTION:
TEB
RidsNrrDirsIrib
MAS
KGO
JKH3
Cook SRI
CAA1
LSL (electronic IR's only)
C. Pederson, DRP (hard copy - IR's only)
DRPIII
DRSIII
PLB1
TXN
ROPreports@nrc.gov (inspection reports, final SDP letters, any letter with an IR number)

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-315; 50-316
License Nos:	DPR-58; DPR-74
Report Nos.	05000315/2008002; 05000316/2008002
Licensee:	Indiana Michigan Power Company
Facility:	D. C. Cook Nuclear Power Plant, Units 1 and 2
Location:	Bridgman, MI
Dates:	January 1, 2008 through March 31, 2008
Inspectors:	B. Kemker, Senior Resident Inspector J. Lennartz, Senior Resident Inspector P. LaFlamme, Resident Inspector F. Tran, Reactor Engineer A. Barker, Project Engineer M. Bielby, Senior Operations Engineer R. Lerch, Project Engineer C. Moore, Operations Engineer D. Szwarc, Reactor Engineer A. Wilson, Reactor Engineer
Approved by:	C. Lipa, Chief Projects Branch 4 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000315/2008002, 05000316/2008002; 01/01/2008 – 03/31/2008; D. C. Cook Nuclear Power Plant, Units 1 and 2; Routine Integrated Inspection Report

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

Summary of Plant Status

Unit 1 was operated at or near full power during the inspection period with the following exceptions:

- Unit 1 was manually tripped on February 2, 2008, because of high vibrations on the main turbine. Licensee personnel evaluated the high vibrations and performed maintenance activities to balance the main turbine. Unit 1 reactor was taken critical and the main generator was initially synchronized to the grid on February 3, 2008. However, main turbine vibration levels were higher than desired and the main turbine was tripped again for additional balancing. On February 4, 2008, the main generator was again synchronized to the grid and reactor power was raised to 19 percent. Higher than desired main turbine vibration levels were again encountered and the main turbine was tripped for additional balancing. On February 5, 2008, the main generator was again synchronized to the grid and power was subsequently increased without adverse main turbine vibration levels. Unit 1 reached full power operations on February 6, 2008, and remained at full power until March 24, 2008.

- On March 24, 2008, Unit 1 power was reduced to 52 percent to conduct scheduled main steam safety valve testing prior to the refueling outage. On March 26, 2008, Unit 1 was shutdown for Cycle 22 scheduled refueling outage. Unit 1 remained shutdown at the end of the inspection period.

Unit 2 was operated at or near full power during the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness For Impending Adverse Weather Condition – Extreme Cold Conditions

a. Inspection Scope

Because extreme cold conditions were forecast in the vicinity of the facility for the week of January 7, 2008, the inspectors reviewed the licensee's overall preparations for the expected weather conditions. The inspectors walked down the Unit 1 and Unit 2 main steam enclosure areas to verify that adequate temperatures were maintained in the areas to preclude adverse impact on safety-related instrumentation associated with the auxiliary feedwater system and the steam generator systems. The inspectors observed insulation, space heater operation, and weatherized enclosures to ensure operability of affected systems.

This inspection constituted one readiness for impending adverse weather conditions sample as defined in Inspection Procedure 71111.01.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns (71111.04Q)

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- Unit 2 West Essential Service Water
- Unit 2 "AB" Emergency Diesel Generator (EDG)
- Unit 2 East Containment Spray

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstones. The inspectors reviewed operating procedures, system diagrams, Technical Specification (TS) requirements, and the impact of ongoing work activities on redundant trains of equipment. The inspectors verified that conditions did not exist that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components were aligned correctly and available as necessary.

In addition, the inspectors verified that equipment alignment problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted three partial system walkdown samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed a complete system alignment inspection of the Unit 1 essential service water system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and

outstanding work orders was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment alignment problems were being identified and appropriately resolved.

This inspection constituted one complete system walkdown sample as defined in Inspection Procedure 71111.04.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors performed fire protection tours in the following plant areas:

- Fire Zone 17E, Unit 1 Turbine Driven Auxiliary Feedwater Pump Room
- Fire Zone 17F, Unit 2 Turbine Driven Auxiliary Feedwater Pump Room
- Fire Zone 29a, Unit 1 East Essential Service Water Pump Room
- Fire Zone 29b, Unit 1 West Essential Service Water Pump Room
- Fire Zone 62c, Unit 1 West Charging Pump Room

The inspectors verified that transient combustibles and ignition sources were appropriately controlled; and assessed the material condition of fire suppression systems, manual fire fighting equipment, smoke detection systems, fire barriers and emergency lighting units.

In addition, the inspectors verified that fire protection related problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted five quarterly fire protection inspection samples as defined in Inspection Procedure 71111.05.

b. Findings

No findings of significance were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors performed a review of Operating Experience Smart Sample OpESS FY2007-02, "Flooding Vulnerabilities Due to Inadequate Design and Conduit / Hydrostatic Seal Barrier Concerns," related to NRC Information Notice 2005-30. The inspectors reviewed the licensee's corrective action documents to verify that the licensee had received and entered Information Notice 2005-30 into their corrective action and operating experience programs. The inspectors reviewed the licensee's evaluation of Information Notice 2005-30 and concluded it was appropriate. In addition, the inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events.

The inspectors performed a walkdown of the turbine building subbasement (elevation 569'-6") to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments.

This inspection constituted one internal flooding sample as defined in Inspection Procedure 71111.06.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11Q)

.1 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors observed a crew of licensed operators during simulator training on February 13, 2008. The inspectors assessed the operators' response to the simulated events focusing on alarm response, command and control of crew activities, communication practices, procedural adherence, and implementation of Emergency Plan requirements. The inspectors also observed the post-training critique to assess the ability of licensee evaluators and operating crews to self-identify performance deficiencies. The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

This inspection constituted one quarterly inspection sample as defined in Inspection Procedure 71111.11.

1R11 Licensed Operator Requalification Program (71111.11B)

.1 Facility Operating History

a. Inspection Scope

The inspectors reviewed the plant's operating history from March 2006 through February 2008 to identify operating experience that was expected to be addressed by the Licensed Operator Requalification Training (LORT) program. The inspector verified that the identified operating experience had been addressed by the facility licensee in accordance with the station's approved Systems Approach to Training (SAT) program to satisfy the requirements of Title 10, Code of Federal Regulations (CFR) 55.59(c). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.2 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed an inspection of the licensee's LORT test/examination program for compliance with the station's SAT program which would satisfy the requirements of 10 CFR 55.59(c)(4). The reviewed operating examination material consisted of six operating tests, each containing two dynamic simulator scenarios and five to six job performance measures (JPMs). The written examinations reviewed consisted of six written examinations, each including a Part A, Plant and Control Systems and Part B, Administrative Controls/Procedure Limits. Each part of the exam contained 18 to 19 questions. The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination material duplication from week-to-week during the current year operating test. The examiners assessed the amount of written examination material duplication from week-to-week for the written examination administered in 2008. The inspectors reviewed the methodology for developing the examinations, including the LORT program 2-year sample plan, probabilistic risk assessment insights, previously identified operator performance deficiencies, and plant modifications. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.3 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test on March 12-13, 2008, to assess the licensee's effectiveness in conducting the test to

ensure compliance with 10 CRF 55.59(c)(4). The inspectors evaluated the performance of one operating crew (three simulator crews) in parallel with the facility evaluators during six dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several JPMs. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented under Section 1R11.8, "Conformance with Simulator Requirements Specified in 10 CFR 55.46," of this report. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.4 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors also reviewed the facility licensee's examination security procedure, any corrective actions related to past or present examination security problems at the facility, and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.5 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its LORT Program up-to-date, including the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions. This evaluation was performed to verify compliance with 10 CFR 55.59(c) and the licensee's SAT program. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.6 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training from the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. This evaluation was performed in accordance with 10 CFR 55.59(c) and with respect to the licensee's SAT program. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.7 Conformance with Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). Additionally, medical records for eight licensed operators were reviewed for compliance with 10 CFR 55.53(I). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.8 Conformance with Simulator Requirements Specified in 10 CFR 55.45

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, steady state tests, and core performance tests), simulator discrepancies, and the

process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the Inspection Procedure (IP) 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46(c) and (d). The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

.9 Annual Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the biennial written examination, the individual JPM operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from February 2008 through March 2008 as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," and IP 71111.11, "Licensed Operator Requalification Program." The documents reviewed during this inspection are listed in the Attachment.

This review represented one biennial licensed operator requalification inspection sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations (71111.12Q)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- Unit 1 and Unit 2 Non-Essential Service Water
- Post-Accident Containment Hydrogen Monitoring

The inspectors reviewed events where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and,
- verifying appropriate performance criteria for structures, systems and components (SSCs) /functions classified as (a)(2) or appropriate, and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization.

This inspection constituted two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Unit 2 West Component Cooling Water Pump and Unit 2 West Charging Pump
- 34.5 Kilovolt Switchyard, Supplemental Diesel Generator (SDG) #2 and Unit 1 West Residual Heat Removal Pump
- Transformer 5, SDG #1 and Unit 1 West Residual Heat Removal Pump
- 34.5 Kilovolt Switchyard and Unit 1 East Essential Service Water Pump
- 69 Kilovolt Switchyard Emergency Feed Transformer 12-TR-12EP and Unit 2 West Essential Service Water Pump Discharge Strainer

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate

and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted five samples as defined by Inspection Procedure 71111.13.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- AR 00823995, "Evaluate Need to Perform a Past Operability Determination"
- AR 00822540, "One Side of Damper 1-HV-ET-FD-3 Did Not Fully Close"
- AR 00822841, "Unit 2 CD Emergency Diesel Generator Failed to Start"
- AR 008008001, "West Diesel Fire Pump Battery Less Than 24 Volts"
- AR 00824819, "Protection Rack Test Jack Corroded"

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TS and Updated Safety Analysis Report (USAR) to the licensee's evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

This inspection constituted five samples as defined in Inspection Procedure 71111.15.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications

a. Inspection Scope

The inspectors reviewed a temporary plant modification implemented with the following plant procedure:

- 1-OHP-SP-283, "Recirculation of the Unit 1 Refueling Water Storage Tank with 1-PP-9E (East Containment Spray Pump) or 1-PP-9W (West Containment Spray Pump)"

The inspectors reviewed this proceduralized temporary modification and the associated 10 CFR 50.59 screening against applicable system design basis documents, including the Updated Final Safety Analysis Report (UFSAR) and the TS to verify whether applicable design basis requirements were satisfied. The inspectors reviewed the operator logs and interviewed engineering and operations department personnel to understand the impact that implementation of the procedure had on operability and availability of the containment spray and containment spray additive systems.

The inspectors also reviewed a sample of action requests pertaining to temporary modifications to verify that problems were entered into the licensee's corrective action program with the appropriate significance characterization and that corrective actions were appropriate.

This inspection constituted one temporary modification inspection sample as defined in Inspection Procedure 71111.18.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed post-maintenance testing activities for the following plant equipment to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- SDG #2
- Unit 1 West Centrifugal Charging Pump
- Unit 2 Intermediate Range Nuclear Instrument N35
- SDG #1
- Unit 1 East Essential Service Water Pump

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified post-maintenance testing. The inspectors verified that the post-maintenance testing was performed in accordance with approved procedures, that the procedures clearly stated the acceptance criteria, and that the acceptance criteria were met. The inspectors interviewed operations, maintenance, and engineering department personnel and reviewed the completed post-maintenance testing documentation.

In addition, the inspectors verified that problems related to the conduct of post-maintenance testing of safety-related plant equipment were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted five samples as defined in Inspection Procedure 71111.19.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

.1 Unit 1 Refueling Outage

a. Inspection Scope

On March 26, 2008, the licensee started the Cycle 22 refueling outage on Unit 1. The inspectors began refueling outage inspection activities, which are expected to be completed and documented during the next inspection period. An inspection sample was not completed during this inspection period.

b. Findings

No findings of significance were identified.

.2 Unit 1 Forced Outage

a. Inspection Scope

The inspectors evaluated outage activities for a Unit 1 forced outage that occurred on February 2 through 5, 2008. Unit 1 was manually tripped from 93 percent power because the main turbine vibration levels reached the manual trip criteria specified in the annunciator response procedure. The inspectors reviewed and evaluated the conduct of outage activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed plant equipment configuration and risk management, electrical lineups, startup activities, and identification and resolution of problems associated with the outage.

This inspection constituted one other outage sample as defined in Inspection Procedure 71111.20.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors reviewed the documentation of surveillance testing on the following plant equipment to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- Unit 2 Steam Generator Stop Valve Dump Valve Testing (In-Service Testing)
- Unit 1 and Unit 2 Reactor Coolant System (RCS) Leak Rate Determination (RCS Leak Rate)
- Unit 1 Power Range Nuclear Instrument Test and Calibration
- Unit 1 "AB" Battery Yearly Surveillance and Maintenance
- Unit 1 and 2 Personnel Airlock Door Seal Local Leak Rate Test (LLRT)

The inspectors observed selected portions of the test activities to verify that the testing was accomplished in accordance with plant procedures. The inspectors reviewed the test methodology and documentation to verify that equipment performance was consistent with safety analysis and design basis assumptions, and that testing acceptance criteria were satisfied.

In addition, the inspectors verified that surveillance testing problems were entered into the licensee's corrective action program with the appropriate characterization and significance. Selected action requests were reviewed to verify that corrective actions were appropriate and implemented as scheduled.

This inspection constituted one in-service surveillance test, one RCS leakage detection surveillance, and three routine surveillance tests for a total of 5 samples as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

.1 Training Observation

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on February 13, 2008, which required emergency plan implementation by a licensed operations crew. This evolution was planned to be evaluated and included in Performance Indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the Shift Manager. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program.

This inspection constituted one sample as defined in Inspection Procedure 71114.06.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Review of Submitted Quarterly Data

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the Fourth Quarter 2007 Performance Indicators for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This inspection was not considered to be an inspection sample as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.2 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors verified the Unplanned Scrams per 7000 Critical Hours Performance Indicator for both units. The inspectors reviewed each Licensee Event Report (LER) from January 1, 2007, through December 31, 2007, determined the number of scrams that occurred, and verified the licensee's calculation of critical hours for both units. The

inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

This inspection constituted two samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors verified the Unplanned Scrams with Complications Performance Indicator for both units. The inspectors reviewed each LER from January 1, 2007, through December 31, 2007, determined the number of scrams that occurred, and evaluated each of the scrams against the performance indicator definition for both units. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

This inspection constituted two samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.4 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors verified the Unplanned Transients per 7000 Critical Hours Performance Indicator for both units. The inspectors reviewed power history data for both operating units from January 1, 2007, through December 31, 2007, determined the number of power changes greater than 20 percent full power that occurred, evaluated each of the power changes against the performance indicator definition, and verified the licensee's calculation of critical hours for both units. The inspectors also reviewed the licensee's corrective action program database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified.

This inspection constituted two samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.5 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures Performance Indicator for Unit 1 and Unit 2 for the period from April 1, 2007, through December 31, 2007. To determine the accuracy of the Performance Indicator data reported during those periods, Performance Indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" were used. The inspectors reviewed control room logs, action requests, event reports and NRC Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's corrective action program database to verify that any problems regarding the Performance Indicator data had been entered into the licensee's corrective action program with the appropriate characterization and significance.

This inspection constituted two samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action system at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Some minor issues were entered into the licensee's corrective action system as a result of the inspectors' observations; however, these are not discussed in this report.

b. Findings

No findings of significance were identified.

.2 Annual In-Depth Review Sample

a. Inspection Scope

The inspectors selected the following action request for in-depth review:

- Root Cause Analysis Report, "Lower Containment High Temperature Shutdown, July 2006 (AR 00801033)," Revision 1

The inspectors verified the following attributes during their review of the licensee's corrective actions for the above action request and other related action requests:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause and previous occurrences;
- evaluation and disposition of operability/reportability issues;
- classification and prioritization of the resolution of the problem, commensurate with safety significance;
- identification of the root and contributing causes of the problem; and
- identification of corrective actions, which were appropriately focused to correct the problem.

The inspectors discussed the corrective actions and associated action request evaluations with licensee personnel.

This inspection constituted one sample as defined in Inspection Procedure 71152.

b. Findings

No findings of significance were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 Unit 1 Reactor Trip Response

a. Inspection Scope

On February 2, 2008, Unit 1 was manually tripped from 93 percent power because the main turbine vibration levels reached the annunciator response procedure manual trip criteria. The inspectors responded to the plant control room to verify that post-trip plant parameters were as expected. The inspectors also reviewed plant procedures, equipment configurations, and control room logs. The inspectors verified that operator response was in accordance with plant procedures and that safety-related plant equipment responded as designed.

This inspection constituted one sample as defined by Inspection Procedure 71153.

b. Findings

No findings of significance were identified.

.2 (Closed) LER 05000315/2007-002-00, "Failure to Declare Essential Service Water Inoperable"

The inspectors reviewed the events and circumstance surrounding this event, which occurred on October 5, 2007. The inspectors reviewed control room logs and the apparent cause evaluation that was documented in action request AR 00820273,

"Technical Specification Applicability with Batteries and ESW Cross-tied," to verify that this event was accurately reported.

On October 5, 2007, Unit 2 was in "defueled" condition for a refueling outage and the essential service water (ESW) system cross-tie valves between Unit 1 and Unit 2 were open. The Unit 2 "CD" battery, which supports the Unit 2 east ESW pump, was removed from service for scheduled maintenance. In accordance with TS 3.7.8, when Unit 1 ESW is cross-tied to Unit 2 then the Unit 2 ESW pump must be operable for the associated Unit 1 train to be considered operable.

Unit 1 TS 3.8.4 and TS 3.8.9 required the Unit 2, 250 VDC battery and associated distribution system to be operable for the required Unit 2 ESW components specified in TS 3.7.8. Consequently, when the Unit 2 "CD" battery was removed from service the Unit 2 east ESW train and associated Unit 1 west ESW train were inoperable. Unit 1 TS 3.8.4 and TS 3.8.9, conditions E and F respectively, required that the Unit 1 west ESW train be declared inoperable immediately.

The Unit 1 control room operators were not informed of the Unit 2 activities to remove the "CD" battery from service. Consequently, the TS 3.8.4 and TS 3.8.9 required action to immediately declare the Unit 1 west ESW train inoperable was not accomplished. However, the Unit 1 west ESW train was already inoperable for other outage activities. Therefore, the failure to immediately declare the west ESW train inoperable as required by TS 3.8.4 and TS 3.8.9 had no impact on safety. The noncompliance was discovered later in the shift by the duty Shift Technical Advisor while verifying equipment status to assure compliance with TS and a log entry was made to declare the Unit 1 west ESW train inoperable to comply with TS 3.8.4 and TS 3.8.9.

Licensee personnel concluded that this event was caused by the failure to revise plant procedures when the improved TS were implemented. Appropriate precautions or other procedure steps were not incorporated to ensure that the opposite unit was informed of the activities to remove 250 VDC batteries and associated distribution system from service, and the impact with respect to TS. Corrective actions included revising plant procedures that are utilized for removing 250 VDC batteries and associated distribution system from service to highlight the impact on the opposite unit with respect to ESW operability. Also, this event was incorporated into the operator training programs. The inspectors concluded that the corrective actions were reasonable to prevent recurrence.

Licensee personnel conducted an extent of condition review to determine if unrecognized TS 3.8.4 and TS 3.8.9 entries had previously occurred during this Unit 2 refueling outage as well as during the previous Unit 1 outage in the fall of 2006. Three additional similar instances were identified where entry into TS 3.8.4 and TS 3.8.9 occurred without immediately declaring the affected ESW train inoperable. However, in all instances the affected ESW train was fully functional to provide sufficient cooling to the opposite unit if needed. Also, the action to restore the affected ESW train to an operable status within 72 hours as required by TS 3.7.8 was always complied with.

The licensee reported this as a condition prohibited by the plant's TS in accordance with 10 CFR 50.73(a)(2)(i)(B). The inspectors concluded that these violations of TS 3.8.4 and TS 3.8.9 constitute violations of minor significance and are not subject to formal enforcement action in accordance with Section IV of the NRC's Enforcement Policy.

This finding was of minor significance because the failure to immediately declare the affected train of ESW inoperable when the opposite Unit 250 VDC power sources and distribution systems were not operable had no impact on safety. In each instance when the affected ESW train was not immediately declared inoperable as required by TS 3.8.4 and TS 3.8.9, the other train of ESW was operable; the equipment configuration was allowed by TS; the affected train of ESW was fully functional; and the affected train of ESW was restored to an operable status within 72 hours as required by TS 3.7.8. This LER is closed.

4OA5 Other Activities

.1 (Closed) Hydrogen Igniter Backup Power Verification (Temporary Instruction (TI) 2515/174)

a. Inspection Scope

The NRC evaluated the potential for early failure of containment during very low probability events involving damage to the reactor core in NUREG/Condition Report (CR)-6427, "Assessment of the Direct Containment Heat (DCH) Issue for Plants with Ice Condenser Containments." In that report, the investigators showed that the early containment failure probability of ice condenser containments is dominated by hydrogen combustion following core damage events. The staff later opened a generic safety issue, GSI-189, "Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion during a Severe Accident."

The objective of TI 2515/174, "Hydrogen Igniter Backup Power Verification," was to verify that licensees have adequately implemented commitments related to providing backup power to containment hydrogen igniters. Specifically, the inspection requirements were to:

(1) evaluate how the licensee has modified plant equipment and implemented training programs and procedures to provide backup power to at least one complete train of hydrogen igniters;

(2) determine whether the equipment necessary to provide backup power to the hydrogen igniters is available;

(3) determine that appropriate procedures have been established to govern the provision of backup power to the igniters;

(4) determine that a suitable training program has been established to train selected staff in the actions necessary to provide backup power to the igniters;

(5) determine that maintenance and testing schedules that are consistent with vendor recommendations have been established for portable and permanently installed equipment.

During this inspection period the inspectors reviewed the licensee's response to GSI-189, "Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion during a Severe Accident." The licensee made a

commitment to install design modifications in both Unit 1 and Unit 2 that provide an alternative method of activating the hydrogen igniters from an area other than the control room complex. The inspectors verified that the licensee had completed the plant modifications which it committed to accomplish.

b. Observations

Summary

The inspectors did not identify any discrepancies between actual plant modifications and actions committed to by the licensee.

Evaluation of Inspection Requirements

In accordance with the requirements of TI 2515/174, the inspectors evaluated and answered the following questions:

(1) Did the licensee modify plant equipment and implement training programs and procedures to provide backup power to at least one complete train of hydrogen igniters?

Yes. The licensee completed physical plant equipment modifications and testing on December 27, 2007. The licensee also implemented training programs and modified procedures to provide backup power to the complete trains of hydrogen igniters for Units 1 and 2.

The licensee utilized the two SDGs to provide a backup power source to the distributed ignition system (DIS) for the hydrogen igniters. The existing control switches for initiating the DIS were located in the control room. The licensee installed additional control switches in each EDG room that will allow them to initiate the DIS from outside the control room. Walkdowns were performed to verify that control switches for each train of the DIS were located in the control room and in the EDG rooms.

(2) Did the licensee provide the equipment necessary to provide backup power to the hydrogen igniters?

Yes. The SDGs provide backup power to the hydrogen igniters and are permanently located by the 69 Kilovolt switchyard. The SDGs start automatically upon a sustained loss of voltage on the 4.16 Kilovolt Bus 1. Bus 1 is then available for the operator to manually load to any of the safety related 4.16 Kilovolt Buses. The inspectors verified that control switches for the DIS were located in the control rooms and that additional switches for each train were installed in the EDG rooms. The inspectors also reviewed the electrical diagrams to verify that the existing and new control switches were installed as described.

(3) Did the licensee establish appropriate procedures to govern the provision of backup power to the igniters?

Yes. The licensee modified their Extensive Damage Mitigation Guidance document to provide guidance for turning on the hydrogen igniters from the control or EDG rooms.

(4) Did the licensee establish a suitable training program to train selected staff in the actions necessary to provide backup power to the igniters?

The modifications made at D.C. Cook were minor and required that operators were aware that additional control switches for the DIS were installed, how they operated, and where the new switches were located. The inspectors verified that the operators received a self-study module (RQ-R-3230) in July 2007 that described the modification to the distributed ignition system. On January 15, 2008, a new classroom lesson plan (AE-C-02801) was approved that described the location of the new switches and their operation. Additionally, the licensee made changes to the Licensed Operator Requalification Program (RO-C-03400) that discussed the modifications and provided diagrams of their physical location.

(5) Did the licensee establish maintenance and testing schedules consistent with vendor recommendations for permanently installed equipment?

Yes. The licensee completed post-modification testing of the newly installed components under Work Orders (WOs) 55294749, 55294750, 55294751, and 55296789. The licensee modified the surveillance testing (1-IHP-4030-134-001 and 2-IHP-4030-234-001) for each DIS train per TS Surveillance Requirement (SR) 3.6.9.1 to alternately test the DIS control switches in the control rooms and the EDG rooms. That SR requires that at least 34 of the 35 hydrogen igniters can be successfully energized in each DIS train. Technical Specification SR 3.6.9.2 verifies that if each train has one inoperable hydrogen igniter they are not both located in the same containment region (upper and lower containment). The licensee performs this surveillance test every 184 days.

The licensee performs a more detailed surveillance test per TSSR 3.6.9.3 every 24 months. This surveillance requires a visual inspection of all the glow plugs and verification of the surface temperature to ensure that the glow plugs would get sufficiently hot to ignite hydrogen in the event of an accident.

.2 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted random tours of the security alarm stations, security officer ready rooms and security officer response posts to observe security officer attentiveness. These tours and observations were conducted during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 17, 2008, the inspectors presented the inspection results to Mr. J. Jensen, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The results of the licensed operator requalification training program inspection with Mr. M. Peifer, on March 14, 2008.
- The licensed operator requalification training biennial written examination and annual operating test results with Mr. R. Harrah, via telephone on March 18, 2008.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

S. Adkins, Regulatory Affairs/Licensing Coordinator
J. Anderson, GL 89-13 Program Owner
J. Beer, Staff Health Physicist
R. Crane, Regulatory Compliance Supervisor
P. Donavin, ISI Program Coordinator
R. Ebright, Training Manager
B. Evans, Operations Senior License Holder
J. Gebbie, Plant Manager
R. Guilfoyle, Operations
J. Harner, Environmental Manager
R. Harrah, Operations Training Manager
J. Jensen, Support Services Vice President
T. Johansen, Operations Training Supervisor
D. Fadel, Design Engineering Director
A. Feliciano, Design Engineer, Mechanical
D. Foster, Environmental Supervisor
C. Lane, Engineering Programs Manager
Q. Lies, Assistant Plant Manager
R. Lingle, Systems Engineering Manager
W. Mammoser, Design Engineering Mechanical Supervisor
R. Meister, Regulatory Affairs Specialist
C. Moeller, Radiation Protection General Supervisor
P. Monk, Steam Generator Engineer
R. Niedzielski, Regulatory Affairs Specialist
J. Nimtz, Regulatory Affairs Compliance Coordinator
M. Peifer, Site Vice President
J. Petro, Regulatory Affairs Manager
R. Pickard, Engineering Programs Supervisor
S. Vasquez, Maintenance Manager
T. Vriezema, Simulator Supervisor
D. Walton, ALARA Supervisor
L. Weber, Plant Engineering Director
J. Wicks, Operations Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

NONE		

Closed

05000315/2007-002-00	LER	Failure to Declare Essential Service Water Inoperable (Section 4OA3.2)
TI 2515/174	TI	Hydrogen Igniter Backup Power Verification (Section 4OA5.1)

Discussed

NONE		

LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

1R01 Adverse Weather Protection

- AR 00825981, "Frozen Sprinkler Head or Pipe on System 1-ZFP-505"

1R04 Equipment Alignment

- AR 00814963, "2-XTI-301 Reading 121 During AB EDG Run 1258 1 Degree Above"
- AR 00816478, "2-XTC-302 Not Controlling Temp"
- 12-OHP-4021-019-001, "Operation of the Essential Service Water System," Revision 2
- 2-OHP-40300-232-027AB, AB Diesel Generator Operability Test, Rev 4
- 2-OHP-4021-009-001, “Placing the Containment Spray System in Standby Readiness”, Revision 11, December 17, 2007.
- OP-2-5144-57, “Flow Diagram Containment Spray Unit No. 2,”
- 2-OHP-4021-032-00AB, Operating DG2AB Subsystems, Revision 8
- SOD-03201-001, EDG Intake & Exhaust Systems, Rev 3, November 4,2005
- OP-2-5113-79, "Flow Diagram Essential Service Water," November 10, 2007
- OP-2-5113A-9, "Flow Diagram Essential Service Water," December 9, 2005
- OP-2-5151B-64, "Flow Diagram Emergency Diesel Generator 'AB'," July 24, 2006
- OP-2-5151D-61, "Flow Diagram Emergency Diesel Generator 'CD'," September 21, 2005
- OP-2-5106A-54, "Flow Diagram Auxiliary Feed Water," February 23, 2006
- OP-2-5153-37, "Flow Diagram CCW Pumps and CCW Heat Exchangers," May 6, 2003
- OP-2-5151A-51, Flow Diagram Emergency Diesel Generator “AB” Unit No. 2, Revision 51
- OP-2-5151B-64, Flow Diagram Emergency Diesel Generator “AB” Unit No. 2, Revision 64
- TBD-2-FIG-19-9, Diesel Generator POT Settings, Revision 50
- Work Order 5530517 01, 2-CTS-109 SAT Vacuum Breaker Leaks By

1R05 Fire Protection

- AR 00805186, "Tracking Esat for U1 MCRCV Fire Seal"
- Work Order 55251197-16, "1-MOD-45500 Modify Turbine Control R", April 04, 2007
- AR 08009060, "1-DR-TUR277 Door Latch Sticks"
- Work Order 55311845-01, "1-DR-TUR277 Door Latch Sticks", January 25, 2008
- E-CABLE-0221-QCN, "DC Cook Nuclear Plant Engineering Specification", Revision 6
- AR 00808768, "Valve Failed to Open and Fill Tank"
- Work Oder 55290413-01, "Valve Failed to Open and Fill Tank", January 25, 2008
- Fire Hazards Analysis, Fire Zones 17E, 17F, 29A, 29B, & 62C, Revision 13
- Fire Pre-Plan, Fire Areas S, T, EE, & YY, Revision 4

1R06 Flooding

- AR 05158054, "NRC Information Notice 2005-11, Internal Flooding/Spray-Down of Safety-Related Equipment Due to Unsealed Equipment Hatch Floor Plugs and/or Blocked Floor Drains”

- AR 05210173, "There are Apparent Discrepancies Regarding the Flood Protection Elevation for the Plant"
- AR 05265065, "Internal Flood Design Deficiencies"
- AR 05315054, "NRC Information Notice 2005-30, Safe Shutdown Potentially Challenged by Unanalyzed Internal Flooding Events and Inadequate Design"
- 12-EHP-5040-MOD-009, Engineering Change Reference Guide, Revision 17

1R11 Licensed Operator Requalification Program

- 2-OHP-4023-E-0, "Reactor Trip or Safety Injection," Revision. 33
- 2-OHP-4023-E-1, "Loss of Reactor or Secondary Coolant," Revision. 17
- 2-OHP-4023-FR-S-1, "Response to Nuclear Power Generation / ATWS," Revision 12
- 2-OHP-4023-ES-1-1, "SI Termination," Revision 16
- 2-OHP-4023-E-2, "Faulted Steam Generator Isolation," Revision 7
- Current List and Summary of Simulator Work Requests, March 2008
- List of Simulator Deviation Reports Closed since April 2007
- List of Simulator Deviation Reports Opened since April 2007
- Simulator Deviation Report 2004-056
- Simulator Deviation Report 2006-030
- TRP-2070-SIM-003, Simulator Performance Testing, Revision 0
- TRP-2070-SIM-002, Simulator Change Request Implementation, Revision 0
- TRP-2070-SIM-001, Simulator Configuration Control, Revision 1
- Simulator Steady State Tests (various), 2007-2008
- Simulator Transient Tests (various), 2007-2008
- Simulator Core Performance Tests, 2007
- Simulator Normal Evolutions Tests (various), 2007-2008
- Simulator Malfunction Tests (various), 2007-2008
- Annual Requalification Operating Tests, 5 Operations Crews, 1 Administrative Crew, administered February – March 2008
- Biennial Written Examinations 6 Examinations, Administered February – March 2008
- OHI-2070, Operations Training and Qualification, Revision 35
- OHI-4000, Conduct of Operations Standards, Revision 34
- LOR Year 31/32 Sample Plan, 2006-2007
- Action Request 00823979, Operations Training Quick Hit [Self-] Assessment, December 2007
- Action Request 00822756, Readiness Review for NRC 711111.11 Inspection, November 2007
- Action Request 00825861, Operations Training Quick Hit [Self-] Assessment, February 2008
- Action Request (various), Operations Self-Assessments, January 2006 – February 2008
- Eight License Operator Medical Records, various
- Classroom Attendance Computer Listing for Licensed Operators,
- March 2006 – March 2008
- TRP-2070-TAP-300-OPS, Operations Training Examination and Simulator Exercise Guide Development, Revision 4
- TRP-2070-TAP-400-OPS, Operations Training Implementation, Revision 10
- TRP-2070-LIC-001, Administrative Requirements for NRC License and Medical Requirements, Revision 3

1R12 Maintenance Effectiveness

- AR 00801520, "#1 RCP Motor Air Cooler Return Line Safety 2-SV-334-1 is Leaking 70 Gal/Day"

- AR 00801033, “Maintenance Rule Evaluation for Technical Specification Shutdown for High Containment Air Temperature”
- AR 00801277, "Unit 1 Train A PACHMS Failed As Found Calibration"
- AR 00802002, "Unit 1 Train A PACHMS Failed As Found Calibration"
- AR 00802649, "Unit 1 Train B PACHMS Failed As Found Calibration"
- AR 00805106, "Unit 1 Train A PACHMS Failed As Found Calibration"
- AR 00806318, "Unit 2 Train A PACHMS Failed As Found Calibration"
- AR 00810179, "Unit 2 Train A PACHMS Failed As Found Calibration"
- AR 00812480, "PACHMS Maintenance Rule Evaluations"
- AR 00812855, "Breaker Tripped Off by Painters in Unit 2 AB EDG Room"
- AR 00814490, "Low Range Calibration Failed As Found"
- AR 00814751, "Unit 1 B PACHMS Failed As Found Calibration Check"
- AR 00815112, "Backup Air Would Not Operate (10/26/06)"
- AR 00816818, "1-CA-7034"
- AR 00816819, "Unit 1 Train A PACHMS As Found Data Out of Acceptance Range"
- AR 00823269, "Trip Valve 1-CA-7035 Tripped Outside Acceptance Band"
- AR 00818914, "2-SV-1A-1 Failed Its As-Found Set Pressure Setpoint Test"
- Maintenance Rule Scoping Document for Containment Ventilation System, Revision 1
- Maintenance Rule Scoping Document for Containment Isolation Valve Super System, Revision 1
- System Health and Status, Non-essential Service Water Unit 1 and 2, 3rd and 4th Quarter 2007
- Maintenance Rule Scoping Document, "Post Accident Containment Hydrogen Monitoring System," Revision 1
- Maintenance Rule Availability/Reliability Data for Post Accident Containment Hydrogen Monitoring System, February 2006 through January 2008

1R13 Maintenance Risk Assessments and Emergent Work Control

- AR 08067012, "Work Window for SDG Was Not Coordinated Well"
- PMP-2291-OLR-001, "On-Line Risk Management," Unit 1 and Unit 2 Part 1 Configuration Risk Assessment, January 16, 17, February 10 thru 15, February 24 thru 27, March 3 thru 7, March 12 thru 14, 2008
- Control Room Logs, January 16, 17, February 10 thru 15, February 24 thru 27, March 3 thru 7, March 12 thru 14, 2008
- Daily Work Activity Schedules, January 16, 17, February 10 thru 15, February 24 thru 27, March 3 thru 7, March 12 thru 14, 2008

1R15 Operability Evaluations

- AR 07153003, "EDG Jacket Water Surge Tank Low ARPs Need Changed"
- AR 00807708, "Reactor Protection Converter Found Out of Tolerance"
- AR 00824820, "2 Protection Rack Test Jack Failures in Same Week"
- OHI-6080, “Emergency Diesel Generator Logs,” for Start Attempt Number 1395
- OHI-6080, “Emergency Diesel Generator Logs,” for Start Attempt Number 1396
- OHI-6080, “Emergency Diesel Generator Logs,” for Start Attempt Number 1397
- OP-1-985803-1, Steam Generator Level Protection Channel 4 Elementary Diagram, Revision
- 1-IHP-4030-SMP-118, Steam Generator Level Protection Set IV Channel Operational Test and Calibration, Revision 5
- AR 00824232, "West Diesel Fire Pump Battery Less Than 24 Volts"

1R18 Plant Modifications

- 12-EHP-5040-MOD-001, "Temporary Modifications," Revision 12
- AR 00825178, "Need Improvement 50.59 Screen for New Operations Activity"
- 10 CFR 50.59 Screen 2008-0021-00, "Recirculation of Unit 1 RWST with 1-PP-9E (East CTS Pump) or 1-PP-9W (West CTS Pump)," Revision 0
- D.C. Cook Nuclear Plant Updated Final Safety Analysis Report, Revision 21
- 1-OHP-SP-283, "Recirculation of the Unit 1 RWST with 1-PP-9E (East CTS Pump) or 1-PP-9W (West CTS Pump)," Revision 0
- 2-OHP-SP-284, "Recirculation of the Unit 2 RWST with 2-PP-9E (East CTS Pump) or 2-PP-9W (West CTS Pump)," Revision 1
- NEI 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1

1R19 Post-Maintenance Testing

- AR 08044070, “NRC question regarding battery surveillance procedure”
- AR 08045086, “1-N41 Ground Anomalies”
- AR 00826187, WR 06360438, “N41 Summing and Level Amp Won’t Cal”
- AR 08045079, “NI Procedure Enhancement”
- AR00802045, "Vacuum Breaker Failed PMT"
- AR 00813809, "Failed PMT for Charcoal Filter Replacement"
- AR 06164022, "Procedure for Pump and Cell Leak Check PMT Was Inadequate"
- AR 08066002, "Incomplete PMT of 12-SF-118S"
- 12-OHP-4030-033-001, "Supplemental Diesel Generator Testing," February 12, 2008
- 1-OHP-4021-003-001, "Letdown, Charging and Seal Water Operation," January 23. 2008
- 12-OHP-4030-033-001, "Supplemental Diesel Generator Testing," February 28, 2008
- 1-OHP-4030-119-022E, Attachment 8, "East ESW Pump Preservice Test," March 6, 2008
- WO 55313712-09, "12-SDGS-2 Output Breaker Tripped Open," February 11, 2008
- WO 55289301-01, "Lube and Clean 1-PP-50W Motor," January 23, 2008
- WO 55289297-01, "Perform External Preventive Maintenance," January 23, 2008
- WO 55309652-01, "Intermediate Range Detector Volt Failure," January 25, 2008
- WO 55292564-01 "12-OME-250-SDG1, Annual Maintenance," February 28, 2008
- WO 55270942-06, "Remove / Refurbish / Replace 1-PP-7E-Mtr," March 5, 2008

1R20 Outage Activities

- PMP-4100-SDR-001, "Plant Shutdown Safety and Risk Management," Revision 17
- 1-OHP-4021-002-005, "RCS Draining," Revision 29
- 1-OHP-4030-127-041, "Refueling Integrity," Revision 11
- 12-OHP-4050-FHP-001, "Refueling Procedure Guidelines," Revision 17
- 2-OHP-4021-017-002, "Placing in Service the Residual Heat Removal System," Revision 19
- 2-OHP-4021-001-004, "Plant Cooldown From Hot Standby to Cold Shutdown," Revision 45
- 1-OHP-4021-001-002, "Reactor Start-Up," Revision 38
- 1-OHP-4021-001-006, "Power Escalation," Revision 45
- Calculation SD-070405-001, Analysis of Postulated Reactor Head Load Drop onto the Reactor Vessel Flange, Revision1
- Calculation DC-D-02-RVHD-02, Evaluation of Piping / Tubing Systems Impacted by the Postulated Reactor Vessel Head Drop (RVHD) Analysis, Revision 0

1R22 Surveillance Testing

- AR 00803209, "Ineffective Change Management for the 4th 10-Year IST Implementation"
- AR 00819930, “Failed As-found Setpoint Lift,” for Safety Valve 2-SV-102
- AR00809662, “U2 Lower Personnel Air Lock As Found Leak Test Failed”
- 12-IHP-4030-082-006, "AB, CD, and N-Train Battery Yearly Surveillance and Maintenance," February 1, 2008, Revision 5
- 1-OHP-4024-119 Drop 35, “Annunciator #119 Response: Station Auxiliary AB”. Revision 18
- 1-OHP-4024-120 Drop 35, “Annunciator #120 Response: Station Auxiliary CD”. Revision 19
- 2-OHP-4024-219 Drop 35, “Annunciator #219 Response: Station Auxiliary AB”. Revision 16
- 2-OHP-4024-220 Drop 35, “Annunciator #220 Response: Station Auxiliary AB”. Revision 14
- 1-OHP-4030-102-016, "Reactor Coolant System Leak Rate Test," February 27, 2008
- 2-OHP-4030-202-016, "Reactor Coolant System Leak Rate Test," February 27, 2008
- 2-OHP-4030-251-018, "Steam Generator Stop Valve Dump Valve Surveillance Test," January 25, 2008
- 12-EHP-4030-046-227, “Unit 1 and 2 Personnel Airlock Door Seal Leak Rate Surveillance,” Revision 2.
- Valve Repair Vendor Failure Analysis Report for Safety Valve 2-SV-102

4OA1 Performance Indicator Verification

- Unit 1 and Unit 2 Control Room Logs, April 1, 2007 through December 31, 2007
- PMP-7110-PIP-001, Regulatory Oversight Program Performance Indicators, Revision 9
- Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5
- Licensee Event Report 315/2007-002-00, “Failure to Declare Essential Service Water Inoperable,” December 20, 2007.

4OA2 Problem Identification and Resolution

- Root Cause Analysis Report, “Lower Containment High Temperature Shutdown, July 2006 (AR 00801033),” Revision 1
- 12-EHP-5040-DES-003, “Calculations and Reports,” Revision 011

4OA3 Follow-up of Events and Notices of Enforcement Discretion

- AR 00820273, "Technical Specification Applicability with Batteries and ESW Cross-tied"

4OA5 Other Activities

- 2007-0057-00, Modification of Unit 1 H2 Distributed Ignition System, Revision 0
- AR 00811019, "Mod of Unit 1 H2 DIS"
- AR 00811022, "Mod of Unit 2 H2 DIS"
- 2007-0078-00, Modification of Unit 2 H2 Distributed Ignition System, Revision 0
- OP-1-98264, Hydrogen Mitigation Distributed Ignition Sys Elementary Diagram, Revision 8
- OP-2-98264, Hydrogen Mitigation Distributed Ignition Sys Elementary Diagram, Revision 9
- AE-C-02801, Containment Ventilation, Revision 4
- RO-C-03400, Containment System Lesson Plan and Power Point Presentation, Revision 5
- RQ-R-3230, Period 3203 LOR Read-It, Revision 0
- AEP:NRC:7504, Letter from Joseph N. Jensen, Subject: Donald C. Cook Nuclear Plant Units 1 and 2 Hydrogen Igniter Backup Power Supply, 02/09/2007

- Letter from C. Haney U.S. NRC, to M. Nazar, Indiana Michigan Power Company, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Commitment for Hydrogen Igniter Backup Power Supply and Closure Process for Generic Issue 189, "Susceptibility of Ice Condenser and Mark III Containments to Early Failure from Hydrogen Combustion During a Severe Accident," June 15, 2007.
- DB-12-CNTS, Design Basis Document for the Containment Systems, Revision 2
- 1-IHP-4030-134-001, Unit 1 DIS Surveillance and Baseline Testing, Revision 10
- 2-IHP-4030-234-001, Unit 2 DIS Surveillance and Baseline Testing, Revision 8
- EDMG-2, Enhanced Site Response Strategies, Revision 1
- 55294749, EC-0000047693, (TR-A) Mod Unit 1 H2, 12/29/2007
- 55294749-03, EC-47693: U1 Train 'A' DIS Post Modification Test, 12/29/2007
- 55294750, EC-0000047847, (TR-B) Mod Unit 2 H2, 12/21/2007
- 55294750-03, EC-47847: U2 (Train 'B') DIS Post Modification Test, 12/21/2007
- 55294751, EC-47693/EC-47694: Unit 1 Train B, 12/20/2007
- 55294751-03, EC-47846: U1 Train 'B' DIS Post Modification Test, 12/20/2007
- 55296789, EC-0000047694, (TR-A) Mod Unit 2 H2, 01/04/2008
- 55296789-03, EC-47694: U2 Train 'A' DIS Post Modification Test, 01/04/2008

LIST OF ACRONYMS USED

ADAMS	Agency Documents Access and Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
AR	Action Request
CFR	Code of Federal Regulations
CR	Condition Report
DIS	distribution ignition system
DCH	Direct Containment Heat
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
GL	Generic Letter
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISI	Inservice Inspection
JPM	Job Performance Measure
LER	Licensee Event Report
LLRT	Local Leak Rate Testing
LORT	Licensed Operator Requalification Training
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
RCS	Reactor Coolant System
SAT	Systems Approach to Training
SDG	Supplemental Diesel Generator
SDP	Significance Determination Process
SSC	Structure, System, or Component
SR	Surveillance Requirement
TI	Temporary Instruction
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
USAR	Updated Safety Analysis Report
WO	Work Orders