



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

February 9, 2009

Mr. Christopher J. Schwarz  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

**SUBJECT: PALISADES NUCLEAR PLANT INTEGRATED INSPECTION  
REPORT 05000255/2008-005**

Dear Mr. Schwarz:

On December 31, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. The enclosed report documents the inspection findings, which were discussed on January 22, 2009, with members of your staff.

The 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, two NRC-identified violations of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Additionally, one licensee identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of an NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Palisades Nuclear Plant.

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/**

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket No. 50-255  
License No. DPR-20

Enclosure: Inspection Report 05000255/2008-005  
w/Attachment: Supplemental Information

cc w/encl: Senior Vice President  
Vice President Oversight  
Senior Manager, Nuclear Safety & Licensing  
Senior Vice President and COO  
Assistant General Counsel  
Manager, Licensing  
W. DiProfio  
W. Russell  
G. Randolph  
Supervisor, Covert Township  
Office of the Governor  
T. Strong, State Liaison Officer  
Michigan Department of Environmental Quality  
Michigan Office of the Attorney General

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,

John B. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Docket No. 50-255  
License No. DPR-20

Enclosure: Inspection Report 05000255/2008-005  
w/Attachment: Supplemental Information

cc w/encl: Senior Vice President  
Vice President Oversight  
Senior Manager, Nuclear Safety & Licensing  
Senior Vice President and COO  
Assistant General Counsel  
Manager, Licensing  
W. DiProfio  
W. Russell  
G. Randolph  
Supervisor, Covert Township  
Office of the Governor  
T. Strong, State Liaison Officer  
Michigan Department of Environmental Quality  
Michigan Office of the Attorney General

DOCUMENT NAME: G:\1-Secy\1-Work In Progress\Pali 2008-005.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						
NAME	RLerch:dtp		JGiessner						
DATE	02/06/09		02/06/09						

**OFFICIAL RECORD COPY**

Letter to C. Schwarz from J. Giessner dated February 9, 2009

SUBJECT: PALISADES NUCLEAR PLANT INTEGRATED INSPECTION  
REPORT 05000255/2008-005

DISTRIBUTION:

Tamara Bloomer  
RidsNrrPMPalisades  
RidsNrrDorLp3-1  
RidsNrrDirIrib Resource  
Mark Satorius  
Kenneth Obrien  
Jared Heck  
Carole Ariano  
Linda Linn  
Cynthia Pederson  
DRPIII  
DRSIII  
Patricia Buckley  
Tammy Tomczak  
[ROPreports@nrc.gov](mailto:ROPreports@nrc.gov)

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-255  
License No: DPR-20

Report No: 05000255/2008-005

Licensee: Entergy Nuclear Operations, Inc.

Facility: Palisades Nuclear Plant

Location: Covert, MI

Dates: October 1, 2008, to December 31, 2008

Inspectors: J. Ellegood, Senior Resident Inspector  
T. Taylor, Resident Inspector  
J. Cassidy, Senior Health Physicist  
A. Dahbur, Senior Reactor Inspector  
R. Jickling, Senior Emergency Preparedness Inspector  
R. Winter, Reactor Inspector

Approved by: J. Giessner, Chief  
Branch 4  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	1
REPORT DETAILS.....	3
Summary of Plant Status.....	3
1. REACTOR SAFETY.....	3
1R04 Equipment Alignment (71111.04).....	3
1R05 Fire Protection (71111.05) .....	4
1R11 Licensed Operator Regualification Program (71111.11).....	5
1R12 Maintenance Effectiveness (71111.12) .....	5
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13).....	6
1R15 Operability Evaluations (71111.15) .....	6
1R18 Plant Modifications (71111.18).....	8
1R19 Post-Maintenance Testing (71111.19) .....	9
1R22 Surveillance Testing (71111.22).....	10
1EP4 Emergency Action Level and Emergency Plan Changes (71114.04) .....	11
1EP6 Drill Evaluation (71114.06).....	11
2. RADIATION SAFETY .....	12
2OS1 Access Control to Radiologically Significant Areas (71121.01) .....	12
4. OTHER ACTIVITIES .....	16
4OA1 Performance Indicator Verification (71151).....	16
4OA2 Identification and Resolution of Problems (71152) .....	17
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153) .....	22
4OA5 Other Activities.....	24
4OA6 Management Meetings .....	25
4OA7 Licensee-Identified Violations .....	26
SUPPLEMENTAL INFORMATION .....	1
KEY POINTS OF CONTACT .....	1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....	2
LIST OF DOCUMENTS REVIEWED.....	3
LIST OF ACRONYMS USED .....	8

## SUMMARY OF FINDINGS

IR 05000255/2008-005; 10/01/2008 – 12/31/2008; Palisades Power Plant; Integrated Inspection Report; Operability Evaluations; Follow-up of Events.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. The findings were considered Non-Cited Violations of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. 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-Revealed Findings

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," for the inadequate testing of the heat removal capacity of the Control Room Heating, Ventilation, and Air Conditioning (CR HVAC) system. Specifically, the licensee isolated refrigerant hot gas bypass flow during the test which increased the heat removal capability of the chiller. The licensee entered the issue into their corrective action program as condition report (CR) PLP-2008-3993 and re-performed portions of the engineering basis calculation to demonstrate margin to account for the hot gas bypass flow.

The finding is more than minor because, in accordance with IMC 0612, Appendix E, "Examples of Minor Issues," the inspectors determined that the finding was similar to Example E.3.j and resulted in a reasonable doubt as to the operability of the chiller. Based upon a review of the licensee's revised calculation for the CR HVAC system acceptance criteria and the Technical Specification (TS) requirements, the finding screens as very low safety significance (Green) using the Phase 1 SDP worksheets. The inspectors determined that the finding included a cross-cutting aspect in the area of human performance, resources, and complete and accurate procedures (H.2(c)) because the surveillance procedure unacceptably preconditioned the chiller. (1R15)

- Green. A self-revealed finding of very low safety significance (Green) and an associated NCV for failure to comply with TS 3.8.1 requirements when metal fragments were found in the valve assembly area of the 1-2 Emergency Diesel Generator (EDG) cylinder 2L. The source of the fragments was a failed spring lock for one of the exhaust valves. This resulted in the EDG being inoperable for a period greater than allowed by TSs. Subsequently, the licensee inspected the remaining spring locks on the 1-2 EDG. Inspections of the 1-1 EDG spring locks are planned.

The finding is more than minor because it affected the equipment performance attribute of the mitigating system cornerstone and adversely affected the objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. A failure analysis performed by the vendor in

conjunction with an apparent cause analysis by the licensee led to an evaluation that the diesel could perform its safety function for at least the 24-hour Probabilistic Risk Assessment mission time. In consultation with the regional Senior Risk Analyst, the finding screens as Green using the significance determination process phase 1. No cross-cutting aspect was assigned because this issue is not indicative of current plant performance. (4OA3)

**B. Licensee-Identified Violations**

A violation of very low safety significance that was identified by the licensee has been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

Throughout the inspection period, the plant operated at or near 100 percent power.

#### **1. REACTOR SAFETY**

##### 1R01 Adverse Weather Protection (71111.01)

###### a. Inspection Scope

Since extreme cold conditions were forecast in the vicinity of the facility for December 2008, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On December 17, the inspectors walked down the condensate storage tanks and safety injection and refueling water tank system(s) because their safety-related functions could be affected or required as a result of the extreme cold conditions forecast for the facility. The inspectors observed insulation, heat trace circuits, and weatherized enclosures to ensure operability of affected systems. The inspectors reviewed licensee procedures. Specific documents reviewed during this inspection are listed in the Attachment.

This inspection constituted one readiness for impending adverse weather condition sample as defined in IP 71111.01-05.

###### b. Findings

No findings of significance were identified.

##### 1R04 Equipment Alignment (71111.04)

###### a. Inspection Scope

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

- High Pressure Safety Injection (HPSI)-A with HPSI-B out of service for maintenance;
- Service Water System with Service Water Pump C out of service for maintenance;
- HPSI-B with HPSI-A out of service for maintenance;
- 1-2 EDG with the 1-1 EDG out of service for maintenance.

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions 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 and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the Corrective Action program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted four partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Technical Support Center;
- 1-D Switchgear Room (during/following emergent Post Maintenance Testing for Auxiliary Feed Water (AFW) -C power supply);
- Component Cooling Water Room;
- North and Southwest Penetration Rooms;
- Charging Pumps Room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out of service, degraded, or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On November 17, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying, and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- 1-2 Emergency Diesel Generator

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. Documents reviewed are listed in the Attachment.

This inspection constitutes one quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

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:

- HPSI-B bearing oil change with hot leg injection valve breaker work and switchyard work (yellow risk);
- Unplanned AFW right train inoperability.

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 maintenance risk assessments and emergent work control activities constituted two samples as defined in IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- CR HVAC chiller capacity with hot-gas bypass isolated;
- CR HVAC fittings found not in-accordance with design;
- Containment Spray header inoperable after pressure gauge replacement;
- EDG 1-2 due to increased load from Containment Air Coolers.

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 UFSAR 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. Documents reviewed are listed in the Attachment.

This inspection constitutes four samples as defined in IP 71111.15.-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of 10 CFR 50, Appendix B, Criterion XI, "Test Control," for the inadequate testing of the heat removal capacity of the CR HVAC system. Specifically, the licensee isolated refrigerant hot gas bypass flow during the test which increased the heat removal capability of the chiller.

Description: On August 26, 2008, the licensee performed a surveillance test, RT-202, to determine the heat removal capability of the 'A' chiller. The test assessed the capability of chiller to remove heat load during design basis conditions. The inspectors reviewed the procedure and conduct of the test and noted that step 5.1.3.d of the procedure manually isolated the hot gas bypass valve of the chiller. Under normal and design conditions, the hot gas bypass flow control valve regulates automatically to open and bypass refrigerant from the condensing unit to maintain compressor suction pressure under low load condition. At full load conditions the valve is closed, but by design there is a small amount of refrigerant that flows. Therefore, isolating the hot gas bypass increases the heat removal capability of the chiller. Since hot gas bypass would not be isolated during normal operation nor during an event, the inspectors concluded that isolating hot gas bypass was preconditioning. As part of the corrective actions, the licensee reviewed test data going back approximately 3 years and adjusted the data to account for hot gas bypass flow. For the July 2007 test on the 'A' train of the CR HVAC system, taking hot gas bypass flow into consideration would have resulted in a measured capacity approximately 9200 BTU/hr below the acceptance criteria of RT-202. Based on discussions with the system engineer and a review of previous revisions of RT-202, the inspectors determined that RT-202 was being performed with hot gas bypass flow isolated since the year 2000.

In order to determine current operability of the CR HVAC system, the licensee adjusted the most recent results of RT-202 to account for hot gas bypass flow. The licensee determined that the 'B' CR HVAC train was operable and that the 'A' CR HVAC train would remain operable below an outside air temperature of 87 degrees. Upon further questioning by the inspectors regarding the TS requirements, the licensee later declared the 'A' train of CR HVAC inoperable. As part of the licensee's corrective actions, the RT-202 basis calculation was revised. By using margin included in the analysis regarding allowable control room temperature, the licensee provided a basis to restore

the 'A' chiller to operable status and demonstrate operability for the previous tests that were reviewed.

Analysis: The inspectors concluded that the failure to properly demonstrate the capability of the chillers warranted an evaluation using the SDP. Specifically, the manual isolation of the hot gas bypass line provided an erroneous value for chiller capacity. On one occasion, isolation of the flow path masked a condition where the chiller would not have been able to meet surveillance requirements. Although the licensee was able to revise an underlying calculation to show the chiller could maintain control room temperatures within the TS requirements, the failure to meet the requirements prior to the calculation markup created a reasonable doubt of the operability of the chiller. Using IMC 0612, Appendix E, "Examples of Minor Issues," the inspectors determined that the finding was similar to Example E.3.j and was more than minor because the error resulted in reasonable doubt as to the operability of the chiller. This finding affects the Procedure Quality attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences in that the licensee used inadequate testing to demonstrate operability of the system. To further assess the significance of the finding, the inspectors used IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." Based upon a review of the licensee's revised calculation for the CR HVAC system acceptance criteria and the TS requirements, the finding screens as very low safety significance (Green) using the Phase 1 worksheets due to answering 'no' to each of the screening questions. The inspectors determined that the finding included a cross-cutting aspect in the area of human performance, resources, and complete and accurate procedures (H.2(c)) because the surveillance procedure unacceptably preconditioned the chiller. The finding reflects current performance because the licensee revised the steps in question in July 2007 but failed to identify and correct the preconditioning.

Enforcement: Appendix B of 10 CFR Part 50, Criterion XI, "Test Control," requires, in part, that a test program be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in the applicable design documents. Contrary to this requirement, during the performance of TS Surveillance Procedure RT-202, "Control Room HVAC Heat Removal Capability" in August 2008, the inspectors identified that the procedure does not adequately test the chillers to ensure bypass flow of refrigerant is accounted for in the capacity of the unit. In addition, potential degradation in the hot gas bypass flow line is not analyzed. Because the finding is of very low safety significance and has been entered into the licensee's CAP as CR-2008-03993, this violation of 10 CFR 50, Appendix B, Criterion XI, is being treated as a NCV, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000255/2008005 01, Inadequate Testing of Control Room Chillers)

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following temporary modification(s):

- EC-10638, Disable Fast Transfer.

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the UFSAR, and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system(s). The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance.

This inspection constituted one temporary modification sample as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- Uninterruptible power supply following installation;
- Primary rod position indication following power supply replacement;
- AFW Right Train Power Supply Replacement.

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three post-maintenance testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the test results for the following activities 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:

- RPS-I-7, Anticipated Transient Without Scram Calibration/Functional Test
- QO-1, Safety Injection Test;
- RO-52, Fire Pump Capacity Test;
- QO-15, Component Cooling Water-B Pump In-Service Test.

The inspectors observed in-plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the UFSAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers Code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;

- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted four routine surveillance testing sample(s) and one inservice testing sample.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

a. Inspection Scope

Since the last NRC inspection of this program area, Emergency Plan Revision 17 and Implementing Procedure EI-1, "Emergency Classification and Actions," Revision 49, were implemented based on your determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Plan, and that the revised Plan as changed continues to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a sampling review of the Emergency Plan changes and a review of the Emergency Action Level changes to evaluate for potential decreases in effectiveness of the Plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

This Emergency Action Level and Emergency Plan Changes inspection constituted one sample as defined in IP 71114.04-05.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on November 5, 2008, and a table top drill for the emergency operations facility on December 17, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed, as applicable, emergency response operations in the simulator control room, technical support center, and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations

were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

These emergency preparedness drill inspections constituted two samples as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiation Work Permit (RWP) Reviews

a. Inspection Scope

The inspectors reviewed licensee controls and surveys in the following radiologically significant work areas within radiation areas, high radiation areas, and airborne radioactivity areas in the plant to determine if radiological controls including surveys, postings, and barricades were acceptable:

- Auxiliary Building;
- Containment Building; and
- Spent Fuel Pool Area.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed the RWPs and work packages used to access these areas and other high radiation work areas. The inspectors assessed the work control instructions and control barriers specified by the licensee. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. The inspectors interviewed workers to verify that they were aware of the actions required if their electronic dosimeters noticeably malfunctioned or alarmed.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors walked down and surveyed (using an NRC survey meter) these areas to verify that the prescribed RWP, procedure, and engineering controls were in place; that licensee surveys and postings were complete and accurate; and that air samplers were properly located.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors also reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the spent fuel pool or other storage pools.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed a sample of the licensee's self-assessments, audits, Licensee Event Reports (LERs), and Special Reports related to the access control program to verify that identified problems were entered into the CAP for resolution.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors evaluated the licensee's process for problem identification, characterization, and prioritization and verified that problems were entered into the CAP and resolved. For repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution, the inspectors verified that the licensee's self-assessment activities were capable of identifying and addressing these deficiencies.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed licensee documentation packages for all performance indicator (PI) events occurring since the last inspection to determine if any of these PI events involved dose rates in excess of 25 R/hr at 30 centimeters or in excess of 500 R/hr at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. Unintended exposures exceeding 100 millirem total effective dose equivalent (or 5 rem shallow dose equivalent or 1.5 rem lens dose equivalent) were evaluated to determine if there were any regulatory overexposures or if there was a substantial potential for an overexposure.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.3 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed the following two jobs that were being performed in radiation areas, airborne radioactivity areas, or high radiation areas for observation of work activities that presented the greatest radiological risk to workers:

- Troubleshooting Pressurizer Heater Breaker; and
- Negative Reactivity Testing of the Spent Fuel Pool Racks.

The inspectors reviewed radiological job requirements for these activities, including RWP requirements and work procedure requirements.

This inspection constitutes one sample as defined in IP 71121.01-5.

Job performance was observed with respect to the radiological control requirements to assess whether radiological conditions in the work area were adequately communicated to workers through pre-job briefings and postings. The inspectors evaluated the adequacy of radiological controls, including required radiation, contamination, and airborne surveys for system breaches; radiation protection job coverage, including any applicable audio and visual surveillance for remote job coverage; and contamination controls.

This inspection constitutes one sample as defined in IP 71121.01-5.

a. Findings

No findings of significance were identified.

.4 High Risk Significant, High Dose Rate, High Radiation Area, and Very High Radiation Area Controls

a. Inspection Scope

The inspectors held discussions with the Radiation Protection Manager concerning high dose rate, high radiation area, and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection, in order to assess whether any procedure modifications substantially reduced the effectiveness and level of worker protection.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors discussed with radiation protection supervisors the controls that were in place for special areas of the plant that had the potential to become very high radiation areas during certain plant operations. The inspectors assessed if plant operations required communication beforehand with the radiation protection group, so as to allow corresponding timely actions to properly post and control the radiation hazards.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors conducted plant walkdowns to assess the posting and locking of entrances to high dose rate, high radiation areas, and very high radiation areas.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified

.5 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation safety work requirements. The inspectors evaluated whether workers were aware of any significant radiological conditions in their workplace, of the RWP controls and limits in place, and of the level of radiological hazards present. The inspectors also observed worker performance to determine if workers accounted for these radiological hazards.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed radiological problem reports for which the cause of the event was due to radiation worker errors to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. Problems or issues with planned or completed corrective actions were discussed with the Radiation Protection Manager.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

.6 Radiation Protection Technician Proficiency

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation protection technician performance with respect to radiation safety work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace, the RWP controls and limits in place, and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

This inspection constitutes one sample as defined in IP 71121.01-5.

The inspectors reviewed radiological problem reports for which the cause of the event was radiation protection technician error to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

This inspection constitutes one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA1 Performance Indicator Verification (71151)

###### .1 Reactor Coolant System Leakage

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage performance indicator for the period from the fourth quarter 2007 through the third quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator logs and verified the accuracy of a sample of calculations for the period of October 2007 through September 2008 to validate the licensee's submittals. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one reactor coolant system leakage sample as defined in IP 71151-05.

###### b. Findings

No findings of significance were identified.

###### .2 Unplanned Transients per 7000 Critical Hours

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours performance indicator for the period from the fourth quarter 2007 through the third quarter of 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs and NRC Integrated Inspection Reports for the period of October 2007 through September 2008 to validate the accuracy of the submittals. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one unplanned transients per 7000 critical hours sample as defined in IP 71151-05.

###### b. Findings

No findings of significance were identified.

###### .3 Safety System Functional Failures

###### a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures performance indicator for the period from the fourth quarter 2007 through the third

quarter 2008 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73," definitions and guidance, were used. The inspectors reviewed licensee event reports for the period of October 2007 through September 2008 to validate the accuracy of the submittals. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one safety system functional failures sample as defined in IP 71151-05.

#### .4 Mitigating Systems Performance Index - Cooling Water Systems

##### a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Cooling Water Systems performance indicator for the period from the fourth quarter 2007 through the third quarter of 2008 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's operator narrative logs, condition reports, MSPI derivation reports, event reports, and NRC Integrated Inspection Reports for the period of October 2007 through September 2008 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI cooling water system sample as defined in IP 71151-05.

##### b. Findings

No findings of significance were identified.

#### 4OA2 Identification and Resolution of Problems (71152)

### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection**

#### .1 Routine Review of items Entered Into the Corrective Action Program

##### a. Inspection Scope

As part of the various baseline inspection procedures 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 CAP at

an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, departmental performance reports and metrics, and licensee human performance results. The inspectors' review nominally considered the 6 month period of July 2008 through December 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors compared and contrasted their results with the results contained in the licensee's assessments. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

This review constituted a single semi-annual trend inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.4 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the Operator Work Arounds on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of Operator Work Arounds. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP, and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.5 Selected Issue Follow-Up Inspection: Criticality Controls in the Spent Fuel Pool

a. Inspection Scope

In July of 2008, the licensee tested some spent fuel storage rack locations to determine if the neutron poison built into the storage rack continued to meet assumptions in the

criticality analysis. The testing revealed that the neutron absorption capability of the Spent Fuel Pool racks had degraded and in some cases no longer met assumptions contained within the criticality analysis. The licensee implemented additional criticality controls in the spent fuel pool and informed the NRC of the controls by letter dated August 27, 2008. After reviewing the controls, the NRC issued Confirmatory Action Letter (CAL) RIII-08-003 to confirm the commitments made by Entergy Nuclear Operations.

During this inspection period, the inspectors validated that the licensee implemented the requirements of the CAL. Specific actions included:

- review of the licensee's basis for criticality safety for proposed fuel moves;
- verification that fuel moves complied with CAL requirements;
- observation of additional testing of the spent fuel pool neutron absorption capability.

The inspectors concluded that the licensee complied with the requirements of the CAL.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

.6 Selected Issue Follow-Up Inspection: Deviation between Estimated and Actual Critical Positions for the August 9, 2008, Startup

a. Inspection Scope

The inspectors reviewed the data and associated procedures for the August 9, 2008, reactor startup from a forced outage. The inspectors also interviewed licensee staff and searched for relevant operating experience and past similar issues identified by the NRC at other plants. Corrective action documents related to the issue were reviewed for appropriate categorization and action. During the August 9, 2008, reactor startup, the reactor attained criticality with rods withdrawn to a position of 0.28 percent delta rho above that predicted by the estimated critical position. Although the deviation was below the TS limit of 1 percent delta rho and the licensee administrative limit of 0.5 percent delta rho, the deviation was abnormally high. The licensee reviewed the error in condition report CR-PLP-2008-3439. The cause evaluation concluded the error occurred due to boron 10 depletion in the primary coolant system. B-10 depletion occurs due to B-10 burnup via neutron absorption. Naturally occurring boron contains 19.8 atom percent B-10 with the remainder B-11. As B-10 (which has a much larger neutron absorption cross-section) absorbs neutrons, the ratio of B-10 to B-11 decreases. This change alters the effective boron poison strength of the primary coolant for a given boron concentration. When fresh boron is added, the effective boron concentration changes. In this instance, the licensee added fresh boron during the shutdown but did not account for it while determining an estimated critical position. As part of the corrective actions, the licensee identified several items to help address this issue. The licensee did have some guidance in EM-04-24, their Critical Prediction and Critical Approach procedure, in regards to when to apply a B-10 correction. The licensee plans

to enhance this portion of the procedure for clarity and ease of conducting a B-10 correction, if deemed necessary. In addition, the licensee benchmarked other fleet plants to determine an optimum isotopic sampling frequency to track the depletion of B-10. The licensee is proceeding with plans to obtain and ship samples for analysis more frequently.

Based on data provided by the licensee, the last time there was a deviation of this magnitude or greater was June 1998 with a 0.393 percent delta rho error. Beyond that, in October 1997 there was a 0.437 percent deviation. The October 1997 deviation was determined to be mostly due to B-10 depletion. A search for relevant operating experience and previous findings was conducted with no relevant results. The inspectors reviewed the licensee's reactivity management event classification guidelines and corrective action process procedure to validate appropriate categorization of the issue. No deficiencies were identified.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

.7 Selected Issue Follow-Up Inspection: Licensee Compliance with the Station Blackout (SBO) Rule Assumptions

a. Inspection Scope

While performing an operability evaluation on inadequate testing of the CR HVAC system (discussed in Section 1R15 of this report), the inspectors noted that the licensee's revision to the underlying calculation for the system's surveillance test may not have taken into account SBO Rule (10 CFR 50.63) requirements. The inspectors interviewed licensee personnel and reviewed design basis documents, the UFSAR, and docketed correspondence between the NRC and the licensee. The inspectors' review included the analysis performed by the licensee to demonstrate compliance with the SBO rule. Based on the review, the inspectors concluded the licensee remained compliant with the license condition for SBO but noted weaknesses in the licensee's program. Noted weaknesses included:

- Lack of operations staff awareness of impacts on SBO rule compliance with elevated temperatures in the control room
- Lack of programmatic controls for maintaining compliance with the plant's SBO assumptions

The licensee generated two condition reports (CR-PLP-2008-5023 and CR-PLP-2008-5074) to address the issue.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings of significance were identified.

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

.1 (Closed) LER 05000255/2008-05-00, Completion of Plant Shutdown Required by TSs

On August 5, 2008, the licensee began a planned shutdown to replace leaking Control Rod Drive Mechanism seals. At 97 percent power, a relief valve, RV-2006, in the letdown system lifted resulting in primary coolant leakage in excess of the TS limit of 1 gallon per minute of unidentified leakage. The licensee made a 4-hour report to the NRC and completed a plant shutdown as required by TSs. The licensee determined that the relief valve lifted when a second charging pump started per the pressurizer level control program. Historically, the licensee has experienced difficulties with control of pressure in the letdown system during operation of charging pumps due to performance of controllers in the system. In addition, the licensee determined that the setpoint of the relief valve will drift as a result of previous relief valve lifts. During the outage, the licensee replaced the relief valve. In this event, leak rates of approximately 4 gallons per minute occurred when the relief valve lifted. Because the line discharged into a quench tank with multiple sources, the licensee treated the leakage as unidentified leakage. The licensee exited the Limiting Condition for Operation (LCO) when the plant entered Mode 5 and the LCO no longer applied. Documents reviewed as part of this inspection are listed in the Attachment. The inspectors did not identify any additional safety issues. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

.2 (Closed) LER 05000255/2008-06-00, Emergency Diesel Generator Inoperable in Excess of TSs Requirements

a. Inspection Scope

On February 19, 2008, during performance of planned maintenance on the 1-2 EDG, licensee personnel discovered foreign material (metal fragments) in the valve assembly area of the 1-2 EDG cylinder 2L. The metal fragments were identified to be broken pieces of the valve seat spring lock associated with the cylinder 2L inboard exhaust valve. These fragments were discovered by workers during an unrelated maintenance activity involving the snubber valves. Due to some physical interference between components during work, the valve cover for cylinder 2L needed to be removed to complete some of the snubber valve maintenance. When the cover was removed, workers noted the spring lock material described above. The licensee performed an apparent cause evaluation that included a failure analysis performed by Fairbanks Morse Engine. The licensee determined that the spring lock was damaged due to a condition discovered in March 2000. While performing maintenance on March 21, 2000, licensee personnel discovered that the valve yoke retaining lock nut had fallen off one of the valve assemblies for cylinder 2L. The licensee determined that because of this, the adjusting screw backed out such that the valve yoke was able to strike the spring seat instead of the adjusting nut striking the valve stem, as designed. This resulted in cyclical side loading of the valve assembly which initiated a fatigue crack on the inside diameter of the spring lock. Eventually it failed, resulting in the pieces discovered on February 19, 2008. The licensee inspected the other spring locks on the 1-2 EDG and found no discrepancies. An extent-of-condition review was performed for the 1-1 EDG by the licensee. The licensee concluded that there was high assurance that a similar

condition does not exist on the 1-1 EDG. The licensee plans to inspect valve seat spring locks for the 1-1 EDG during the next scheduled preventative maintenance outage.

The licensee reviewed the corrective actions for the March 2000 discovery of the lock nut that fell off and the associated backing-out of the adjusting screw. To resolve the issue, the nut was returned to the proper position and torqued. In addition, the other retaining nuts were inspected and found to be acceptable. There were no documented inspections of any other components in the valve assembly area under the valve cover. Following the discovery, the licensee did not change the routine preventative maintenance requirements. The inspectors identified one finding. This LER is closed.

This event follow-up review constituted one sample as defined in IP 71153-05.

b. Findings

Introduction: On February 19, 2008, a Green self-revealed finding and associated NCV of TS requirement 3.8.1.b became evident when licensee personnel discovered metal fragments in the valve assembly area of the 1-2 EDG cylinder 2L. Subsequent evaluation by the licensee determined that the diesel would not be able to function for its 30-day mission time and was inoperable for a period of time greater than allowed by TS.

Description: While performing maintenance on the 1-2 EDG, licensee personnel noted metal fragments in the valve cover for the 1-2 EDG. The licensee investigated the source of the metal fragments and discovered that the spring lock for an exhaust valve had failed. The licensee reviewed maintenance history for the diesel and determined that a lock nut had backed off an adjustment screw in 2000. The licensee contracted the diesel vendor to evaluate the condition of the cylinder head in order to determine the cause of the spring lock failure. The vendor concluded that the loss of the lock nut caused the adjusting screw to drift and allowed the yoke arm to contact the valve spring seat. The abnormal operating condition likely created cracks in the spring lock that propagated even after replacement of the lock nut. In 2000, the licensee limited corrective actions to replacing the lock nut and checking the lock nuts on other cylinders. The licensee did not evaluate potential degradation of other components due to the abnormal operation of the valve.

The licensee evaluated the as-found condition and concluded that a sufficient amount of the spring lock remained on the valve to assure continued operation of the EDG for at least 24 hours. However, the wear rates could not be determined to assure the EDG would operate for 30 days. The licensee identified that a potential failure mode was loss of the valve into the associated cylinder and subsequent damage to the turbo charger through transport of generated debris. As corrective action, the licensee replaced the spring lock and inspected the others on the 1-2 EDG. An extent of condition was performed for the 1-1 EDG, and inspections are planned for the 1-1 EDG as well. The condition was entered into the licensee's CAP as CR-PLP-2008-0822.

Analysis: The inspectors determined that the inoperability of the diesel generator for longer than TS allowed outage time represented a performance deficiency that warranted a significance determination. Through review of the condition reports related to the missing lock nut in 2000, the inspectors determined that the licensee could reasonably be expected to foresee and correct the condition of the cylinder/valve operating mechanism. In 2000, the licensee did not evaluate potential adverse effects

on the valve and related components. Corrective actions at the time also indicated the remaining lock nuts were only checked hand-tight. The inspectors determined the issue is more than minor because it affected the mitigating system cornerstone objective of ensuring the reliability and capability of mitigating systems. The inspectors performed a phase 1 screen on the issue in accordance with IMC 0609 and determined that since the EDG was inoperable for greater than the TS allowed outage time, support from the region-based senior risk analyst was needed to determine risk significance. Based on vendor analysis, the licensee concluded that the EDG would likely operate in excess of 24 hours, but not for the 30-day mission time required by the license. Since the EDG would function for the Probable Risk Assessment mission time, the senior risk analyst determined the issue would screen as Green using the phase 1 worksheets. No cross-cutting aspect was assigned because the review dated back to 2000, therefore, this issue is not indicative of current plant performance.

Enforcement: Technical Specification LCO 3.8.1 states, in part, that two diesel generators each capable of supplying one train of the Class 1E AC electrical power distribution system shall be operable. The TS action requirement requires a plant shutdown if the associated EDG is inoperable for greater than 7 days. Contrary to the required action statements, on February 19, 2008, a failed spring lock for one of the exhaust valves on the 1-2 EDG was discovered. This resulted in an EDG inoperability beyond the allowed required action times. The failure was determined to have been the result of an issue discovered in 2000 involving a lock nut that had fallen off of the exhaust valve assembly. Further analysis led to a conclusion by the licensee that the condition would likely allow the EDG to run for the 24-hour Probabilistic Risk Assessment mission time but not the 30-day mission time. Because the finding is of very low safety significance and has been entered into the licensee's CAP as CR-2008-0822, this violation of TS requirement 3.8.1.b is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000255/2008005-02 Emergency Diesel Generator Inoperable in Excess of TS Requirements).

#### 40A5 Other Activities

##### .1 Observations of Security

###### a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities 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.

.2 Implementation of Temporary Instruction (TI) 2515/176, "Emergency Diesel generator Technical Specification Surveillance Requirements Regarding Endurance and Margin testing"

a. Inspection Scope

The objective of TI 2515/176 was to gather information to assess the adequacy of nuclear power plant emergency diesel generator endurance and margin testing as prescribed in plant-specific TSs. The inspectors reviewed the licensee's TS, procedures, and calculations, and interviewed licensee personnel to complete the TI. The information gathered for this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation on December 17, 2008. This TI is complete at Palisades Nuclear Plant; however, this TI 2515/176 will not expire until August 31, 2009. Additional information may be required after review by the Office of Nuclear Reactor Regulation.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 22, 2009, the inspectors presented the inspection results to Thomas Kirwin and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary. A follow-up phone exit meeting was held by the NRC with Ms. B. Dotson and Mr. C. Sherman on February 2, 2009 to discuss additional inspection results.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The annual review of emergency action level and emergency plan changes with the licensee's Senior Emergency Planning Coordinator, Mr. M. Sweet via telephone on December 30, 2008.
- The results of the access control to radiologically significant areas inspection with the Plant Manager, Mr. T. Kirwin, and other members of your staff, on December 12, 2008.
- A telephone exit for TI 2515/176 was conducted with John Broschak, Entergy/Engineering Director and other Licensee staff on December 2, 2008.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

#### 4OA7 Licensee-Identified Violations

The following violation of very low significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

- Technical Specification 5.7.1 requires areas with dose rates greater than 100 mR/hr to be posted as a High Radiation Area and barricaded. Contrary to this, on October 18, 2008, the high radiation area posting and barricade did not provide an adequate barricade around areas of the room having dose rates greater than 100 mR/hr in the west engineered safeguards room. This was identified in the licensee's corrective action program as CR-PLP-2008-04310. The finding was determined to be of very low safety significance because it was not an ALARA planning issue, there was no overexposure nor substantial potential for overexposure, and the licensee's ability to assess dose was not compromised.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

C. Schwarz, Site Vice President  
V. Beilfuss, Project Manager  
J. Broschak, Engineering Director  
N. Brott, Emergency Preparedness Coordinator  
J. Burnett, RETS/REMP Specialist  
T. Davis, Regulatory Compliance  
B. Dotson, Regulatory Compliance  
J. Fontaine, Senior Emergency Planning Coordinator  
J. Ford, Corrective Action Manager  
T. Kirwin, Plant General Manager  
L. Lahti, Licensing Manager  
B. Nixon, Assistant Operations Manager  
T. Shewmaker, Chemistry Manager  
C. Sherman, Radiation Protection Manager  
M. Sicard, Operations Manager  
G. Sleeper, Assistant Operations Manager  
E. Williams, Radiation Protection Supervisor

#### Nuclear Regulatory Commission

J. Giessner, Chief, Branch 4

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

05000255/2008005-01	NCV	Inadequate Testing of Control Room Chillers (Section 1R15)
05000255/2008005-02	NCV	Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements (Section 4OA3)

### Closed

05000255/2008005-01	NCV	Inadequate Testing of Control Room Chillers (Section 1R15)
05000255/2008005-02	NCV	Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements (Section 4OA3)
05000255/2008005	LER	Completion of Plant Shutdown Required by Technical Specifications (Section 4OA3)
05000255/2008006	LER	Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements (Section 4OA3)

## 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

- CR-PLP-2007-5672, 1-3 DG cold weather vent covers fall out of the vents, November 7, 2007
- CR-PLP-2007-5934, The Insulating Box for SIRW Tank Level Instrument LT-0331 is Bent, November 21, 2007
- SOP-23, Plant Heating System, Revision 27

### 1R04 Equipment Alignment

- Drawing M-204, Safety Injection, Containment Spray, and Shutdown Cooling System
- Drawing M-208, Service Water System
- Drawing M-213, Service Water, Screen Structure, and Chlorinator
- FSAR Chapter 9.1.1, Service Water System, Revision 25
- Procedure No. 4.02, Control of Equipment, Revision 47
- SOP-15, Service Water System, Revision 47
- SOP-22, Emergency Diesel Generators, Revision 45
- SOP-3, High Pressure Safety Injection System, Revision 75

### 1R05 Fire Protection

- Fire Hazard Analysis, Palisades Plant, Revision 7

### 1R11 Licensed Operator Requalification Program

- Procedure SEP, Site Emergency Plan, Revision 16
- Simulator Exercise Guide for November 17, 2008 Licensed Operator Requalification Drill

### 1R12 Maintenance Effectiveness

- CR-PLP-2007-01807, K-6B Placed in Maintenance Rule Category a(1), May 3, 2007
- CR-PLP-2007-01145, K-6B exceeds Maintenance Rule Unavailability Hours, March 13, 2007
- CR-PLP-2008-01424, EG-30A, 1-2 Emergency Diesel Generator Alarm Panel Failure (K-6B), March 28, 2008
- CR-PLP-2008-03141, During the Performance of MO-7A-2, Emergency Diesel Generator 1-2, Difficulties were Encountered in Attempting to Match Generator Output Voltage to Match Bus 1D Voltage, July 21, 2008
- CR-PLP-2008-03142, While Increasing Load on 1-2 Diesel Generator, the Cylinder Petcock for 9R Came Open, July 21, 2008
- CR-PLP-2008-0822, Broken Valve Keeper (Spring Seat Lock) Found on Cylinder 2-L of the 1-2 Emergency Diesel Generator, February 19, 2008
- EGAD-EP-10, Maintenance Rule Scoping Document, Revision 5
- EM-20-01, Emergency Diesel Generator Reliability Program, Revision 2

- Emergency Diesel Generator Related Plant Operating Log Entries from May 2007 thru September 2008
- Emergency Diesel Generators Palisades Plant Health Report, 3<sup>rd</sup> Quarter 2008
- EN-DC-198, Emergency Diesel Generator Reliability Program, Revision 1
- EN-DC-203, Maintenance Rule Program, Revision 1
- EN-DC-204, Maintenance Rule Scope and Basis, Revision 1
- EN-DC-205, Maintenance Rule Monitoring, Revision 2
- EN-DC-206, Maintenance Rule (a)(1) Process, Revision 1
- NUMARC 93-01, Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 2
- Palisades Plant Maintenance Rule Unavailability Performance Indicator Data thru September 2008

#### 1R13 Maintenance Risk Assessments and Emergent Work Control

- Procedure No. 4.02, Control of Equipment, Revision 47
- SOP-3, High Pressure Safety Injection System, Revision 75
- FSAR Chapter 9.7, Auxiliary Feedwater System, Revision 26

#### 1R15 Operability Determinations

- Calculation 022-M-001, Control Room Required Cooling Load, Revision 0 and markup
- CR-4580, Diesel Load Calculation, November 11, 2008
- CR-PLP-2008-03993, RT-202, Control Room Heat Removal Capability Test Operability Issue, September 24, 2008
- CR-PLP-2008-04344, Control room HVAC mounting configuration of solenoid valves to their positioners not in accordance with design drawings, October 21, 2008
- CR-PLP-2008-04580, Diesel Load Calculation did not Account for Worst Case Containment Air Cooler Load, November 11, 2008
- CR-PLP-2008-4431, Containment Spray Header Pressure Indicator Indicating Below Technical Specification Limit after Maintenance, October 28, 2008
- DBD 1.06, Control Room HVAC System, Revision 7
- DBD-2.03, Containment Spray System, Revision 7
- EA-SBO-1, Station Blackout Coping Evaluation for 10CFR50.63, Revision 2
- EC Markup EC-10988, Control Room Cooling Load, Revision 0
- ESSO-1, Containment Spray Header Fill, Revision 12
- FSAR Chapter 6.2, Containment Spray, Revision 26
- FSAR Chapter 9.8, Heating, Ventilation, and Air Conditioning System, Revision 26
- MO-29, Engineered Safety System Alignment, Revision 36
- RT-202, Control Room HVAC Heat Removal Capability, Revisions 3, 9, and 10

#### 1R18 Plant Modifications

- EC-10638, Disable Fast Transfer

#### 1R19 Post Maintenance Testing

- CR-PLP-2006-2485, Control Rods Failed RO-19, May 2, 2006
- CR-PLP-2480, CRD-8 Failed to Drive CRD-8, May 1, 2006
- DBD-1.03, Auxiliary Feedwater System Design Basis Document, Revision 7
- FSAR Chapter 9.7, Auxiliary Feedwater System, Revision 26

- Procedure No. 9.20, Attachment 3, Process Control Sheet dtd 11/5/08 for Auxiliary Feedwater System 18-Month Test Procedure, Revision 24
- RO-127, Auxiliary Feedwater System, 18-Month Test Procedure, Revision 7
- WO #51634185, P/S-0737A, Replace Power Supply During 1R20
- WO 00168249, MC1000-03 has Failed, October 12, 2008
- WO 0019168, RO-19 Control Rod Position Verification, May 2, 2006
- WO 51631052, Control Rod Position Verification, October 12, 2007
- WO002981980, Control Rod Position Verification, May 3, 2006
- EC-9282, Provide UPS Power for Perimeter Intrusion Detection and Monitoring Equipment, October 17, 2008
- WO 00160408, Upgrade to Security UPS System, October 17, 2008

#### 1R22 Surveillance Testing

- ASME OM Code 2001, Subsection ISTB
- EM-09-04, Inservice Testing of Selected Safety-Related Pumps, Revision 23
- QO-15 Basis Document for Inservice Test Procedure-Component Cooling Water Pumps, Revision 14
- QO-15, Inservice Test Procedure, Component Cooling Water Pumps, Revision 26
- RO-146, Comprehensive Pump Test Procedure, Component Cooling System Pumps P-52A, P-52B, and P-52C, Revision 1
- RO-52, Fire Suppression Water System Functional Test; Fire Pump Capacity Test, Revision 27
- RPS-I-7, Anticipated Transient Without Scram (ATWS) Calibration/Functional Test, October 22, 2008
- WO 51662292, Fire Suppress Wtr Sys Pump Capacity Func, September 23, 2008

#### 1EP4 Emergency Action Level and Emergency Plan Changes

- Attachment 9.2, 10 CFR 50.54(q) Evaluation/Screening, Revisions 17 and 49
- EI-1, Emergency Classification and Actions, Revisions 48 and 49
- Palisades Nuclear Plant Site Emergency Plan, Revisions 16 and 17

#### 1EP6 Drill Evaluation

- Procedure SEP, Site Emergency Plan, Revision 16
- NEI-99-02, Regulatory Assessment Performance Indicator Guideline, Revision 5
- Fourth Quarter Integrated Training Drill, November 5, 2008
- Tabletop Drill, December 17, 2008

#### 2OS1 Access Control to Radiologically Significant Areas

- CR-PLP-2007-04378, Ensure that all Requirements Associated with Control of Very High Radiation Areas are Properly Assessed, dated September 23, 2007
- CR-PLP-2007-4383, Concerns Have Been Made Regarding Use of the New Fuel Elevator, dated September 24, 2007
- CR-PLP-2008-04310, West Engineered Safeguards Room Dose Rates Warranted High Radiation Area Posting, dated October 18, 2008
- EAR 2001-0518, Evaluate Current Mechanical Stop on New Fuel Elevator for Design Function, Revision 0
- EN-RP-100, Radworker Expectations, Revision 2

- EN-RP-101, Access Control For Radiologically Controlled Areas, Revision 4
- EN-RP-108, Radiation Protection Posting, Revision 7
- EN-RP-141, Job Coverage, Revision 4
- EN-RP-151, Radiological Diving' Revision 2
- QA-14-2008-PLP-01, Quality Assurance Report, Radiation Protection, dated May 14, 2008
- Radiation Work Permit 20080015 and Associated ALARA File, Containment Activities During Power Operations, Revision 3
- Radiation Work Permit 20080108 and Associated ALARA File, Badger Testing in the Spent Fuel Pool, Revision 0
- SC-91-095-07, New Fuel Elevator Travel Limit Switch and Control Console Modification, Revision 1
- Snapshot Assessment, Incorporation of Radiation Protection Hold Points and Radiation Protection Notification into Palisades Operation Procedures, June 13, 2008

#### 40A1 Performance Indicator Verification

- Cooling Water System Mitigating System Performance Indicator Validation Packages, Fourth Quarter 2007 thru Third Quarter 2008
- DWO-1, Operator's Daily/Weekly Items Modes 1,2,3, and 4 Basis Document, Revision 53
- DWO-1, Operator's Daily/Weekly Items Modes 1,2,3, and 4, Revision 84
- MSPI Margin Report for Cooling Water System, Period ending September 2008
- LER 05000255/2008-002-00, Breaker Cubicle Failure Results in High Pressure Safety Injection Pump Inoperability
- LER 05000255/2007-007-00, Fuel Handling Area Ventilation System Inoperable
- LER 05000255/2007-008-00, Auxiliary Feedwater Pump Inoperable in excess of technical Specification Limits Due to a Postulated steam Line Break
- Log Entries associated with Cooling Water System Equipment, 1 October 2007 thru 30 September 2008
- Selected Palisades Plant Operating Logs from Fourth Quarter 2007 thru Third Quarter 2008
- NEI-99-02, Regulatory Assessment Performance Indicator Guideline, Revision 5

#### 40A2 Problem Identification and Resolution

- 06-01 OWA, Auxiliary Feedwater Pumps P-8A, B, C Suction Source, May 23, 2008
- 07-02 OWA, 2400VAC Busses 1C, 1D, 1E, May 14, 2007
- 08-01 OB, 2400/4160VAC MOC Switch Required Inspections, May 14, 2008
- 08-01 OWA, Condensate Pump P-2B Degraded Pressure, December 6, 2007
- Corrective Action X, Basis for Fuel Assembly Moves in Palisades Spent Fuel Pool, November 6 2008
- CR-PLP-2008-3439, The Estimated Critical Position, although Well Within Acceptance Criteria, was not as Accurate as Typical for Palisades, August 9, 2008
- CR-PLP-2008-01748, 1-1 Diesel Fuel Oil Supply Line Rubbing, April 19, 2008
- CR-PLP-2008-01749, 1-1 Diesel Fuel Oil Supply Line Rubbing, April 19, 2008
- CR-PLP-2008-05023, NRC has questioned the basis, justification, and control of initial control room temperature assumption in the heatup analysis of the Palisades station blackout (SBO) event, December 12, 2008
- CR-PLP-2008-05074, An Administrative Issue was Identified During Review of Documents Provided to the NRC Related to Palisades Compliance with SBO Rule, December 17, 2008
- EA-APR-95-023, Room heatup after loss of ventilation under Appendix R scenario in the control room, 1C and 1D switchgear rooms, battery rooms, containment area, and EDG rooms
- EM-04-24, Palisades Critical Prediction and Critical Approach, Revision 8

- EN-LI-102, Corrective Action Process, Revision 10
- EN-OP-103, Reactivity Management Program, Revision 3
- FSAR Chapter 8.1.5, Station Blackout, Revision 25
- Letter to Gerald Slade, Palisades Plant Station Blackout Analysis, Safety Evaluation (TAC No. 68578), May 20, 1991
- Letter to Gerald Slade, Palisades Plant-Station Blackout Analysis-Safety Evaluation (TAC No. M68578), June 25, 1992
- Letter to John Ellegood, Notification of Fuel Moves Planned –Palisades Spent Fuel Pool Region 1 to Region 2, November 6, 2008
- Letter to the NRC, Palisades Plant-Station Blackout Analysis, Safety Evaluation (TAC No. 68578), August 1, 1991
- NET-299-01, BADGER Test Campaign at Palisades Nuclear Plant, October 8, 2008
- NUMARC 87-00, Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors, Revision 1
- ODMI Implementation Action Plan, P-2B Condensate Pump Degraded Performance, November 18, 2007
- Operator Work Arounds / Burdens, October 14, 2008 Index
- Palisades Administrative Procedure 4.12, Operator Work-Around Program, Revision 5
- Palisades Operator Aggregate Index Reports, July through October 2008
- CR-PLP-2006-04702, Adverse Trend in Power Supply Reliability, October 3, 2006
- EN-LI-121, Entergy Trending Process Third Quarter Report, Revision 7
- CR-PLP-2008-04279, Adverse Trend in Power Supplies, October 16, 2008
- CR-PLP-2008-03203, Emerging Trend in Control of Equipment Positioning, July 25, 2008
- SOP-24, Ventilation and Air Conditioning System, Revision 52
- Letter to NRC, Commitments to Address degraded Spent Fuel Pool Storage Rack Neutron Absorber, August 27, 2008
- Spent Fuel Pool Shuffle Sequence, November 7, 2008
- Letter to John Ellegood, Notification of Fuel Moves Planned –Palisades Spent Fuel Pool region 1 to region 2, November 17, 2008

#### 40A3 Follow-up of Events and Notices of Enforcement Discretion

- CR-PLP-2008-03328, Plant Exceeded Technical Specification Limit for Unidentified Leak Rate, August 5, 2008
- LER 05000255/2008-05-00, Completion of Plant Shutdown required by Technical Specifications, Revision 0
- LER 05000255/2008-06-00, Emergency Diesel Generator Inoperable in Excess of Technical Specification Requirements, Revision 0
- CR-PLP-2008-00822, Broken Valve Keeper (Spring Seat Lock) Found on Cylinder 2L of the 1-2 Emergency Diesel Generator, February 19, 2008
- CR-PLP-2000-00556, EDG 1-2 Valve Yoke Retaining Nut on Cylinder 2L Was Not Attached, March 21, 2000
- EPS-M-14, Diesel Generator Periodic Maintenance, Revision 17
- EPS-M-15, Diesel Generator 1-2 Refueling Frequency Maintenance, Revision 1

#### 40A5 Other Activities

- Procedure No. RO-128-1; Diesel Generator 1-1 24 Hour Load Run; Revision 13
- Procedure No. RO-128-2; Diesel Generator 1-2 24 Hour Load Run; Revision 12
- Calculation No. EA-ELEC-LDTAB-005; Emergency Diesel Generator 1-1 & 1-2 Steady State Loading; Revision 8

## LIST OF ACRONYMS USED

AFW	Auxiliary Feed Water
CAL	Confirmatory Action Letter
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
CR HVAC	Control Room Heating, Ventilation and Air Conditioning
EDG	Emergency Diesel Generator
HPSI	High Pressure Safety Injection
IMC	Inspection Manual Chapter
LCO	Limiting Condition for Operations
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NEI	Nuclear Energy Institute
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
RWP	Radiation Work Permits
SBO	Station Black Out
SDP	Significance Determination Process
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report