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

August 3, 2011

Mr. Anthony Vitale
Vice-President, Operations
Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT INTEGRATED INSPECTION REPORT 05000255/2011003

Dear Mr. Vitale:

On June 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. The enclosed report documents the results of this inspection, which were discussed on July 11, 2011, with Mr. Dave Hamilton and other 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, four NRC-identified findings and one self-revealed finding 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 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity of these NCVs, 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 addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Palisades Nuclear Plant. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website 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 05000255/2011003;
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	05000255/2011003
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Palisades Nuclear Plant
Location:	Covert, MI
Dates:	April 1, 2011, through June 30, 2011
Inspectors:	J. Ellegood, Senior Resident Inspector T. Taylor, Resident Inspector J. Beavers, Emergency Preparedness Inspector J. Cassidy, Senior Health Physicist M. Holmberg, Reactor Inspector R. Walton, Senior Operations Engineer
Approved by:	John B. Giessner, Chief Branch 4 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000255/2011003; 03/01/2011 – 06/30/2011; Palisades Nuclear Plant; Inservice Inspection Activities, Operability Evaluations, Plant Modifications, Drill Evaluations, Radiological Environmental Monitoring Program, Other Activities.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Four Green findings were identified by the inspectors and one Green finding was self-revealed. The findings were all considered non-cited violations (NCVs) 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). Cross-cutting aspects were determined using IMC 0310, "Components Within the Cross-Cutting Areas." 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: Initiating Events

- Green. A finding of very low safety significance and associated NCV of 10 CFR Part 50.55a(g)(6)(ii)(D)(1), "Reactor Vessel Head Inspections," was identified by the inspectors for the licensee's failure to evaluate corrosion present on the reactor vessel head during a Code Case (CC) N-729-1 VE visual examination. The licensee entered the condition into the corrective action program. As a corrective action the licensee compared pictures taken during the 2010 head visual examination with video records from a 2003 visual head examination. Based upon this comparison, the licensee determined that no indication of significant wall loss or structural degradation had occurred. Further, the licensee determined that the surface irregularities observed were caused by a combination of scaling (e.g., rusting) due to high humidity and a rough surface condition caused by the original head forging process and were not the result of boric acid induced corrosion or wastage. Additionally, the licensee determined that the "white spots" on the head were the result of boron staining, white mastic residue used to attach insulation to the head, or chromate water deposits from a previous component cooling water leak. The licensee did not identify any evidence of leakage of boron or boric acid on the head since the 2003 visual head examination. Based upon these observations and conclusions, the licensee determined that the reactor vessel head was operable and acceptable for continued service. The licensee also assigned a corrective action to ensure that an appropriate evaluation of relevant indications was incorporated into the vessel head VE examination procedure.

  The finding was determined to be more than minor because the finding was associated with the Initiating Events Cornerstone attribute of Equipment Performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. Absent NRC identification, the failure to evaluate head corrosion could have allowed unacceptable wastage to be returned to service. If areas of corrosion reduced vessel head strength, it could place the reactor coolant system at increased risk for through-wall leakage and/or failure. The licensee completed actions to assess the corrosion and surface irregularities observed and determined that no indication of significant wall loss or structural degradation had occurred. The

inspectors answered “No” to the SDP Phase I screening question “Assuming worst case degradation, would the finding result in exceeding the Technical Specification (TS) limit for any reactor coolant system leakage or could the finding have likely affected other mitigation systems resulting in a total loss of their safety function assuming the worst case degradation?” Therefore, the finding screened as having very low safety significance. This finding had a cross-cutting aspect in the area of Human Performance, Decision Making because the licensee staff failed to make conservative assumptions in decisions affecting the integrity of the reactor vessel head. Specifically, the decision to not evaluate areas of corrosion present on the vessel head was not based sufficient information to demonstrate that the proposed action/decision was safe (H.1(b)). (Section 1R08)

Cornerstone: Mitigating Systems

- Green. A self-revealed finding of very-low safety significance with an associated NCV of TS 5.4.1, Procedures, occurred for the licensee’s failure to properly implement the procedure for inspection of American Society of Mechanical Engineers (ASME) Class 2 piping associated with the Safety Injection and Refueling Water tank. Specifically, while investigating roof leakage into the control room and auxiliary building, boric acid deposits and an active flange leak discovered on piping under the tank roof indicated that this ASME Class 2 piping had not been inspected per the site procedure for approximately 20 years. Upon discovery, this leak would require ASME Code Section XI corrective actions to confirm the structural integrity of the connection. Although the licensee considered the area with the piping inaccessible, while investigating the roof leakage issue, the licensee was able to construct a scaffold and reach the area of concern. The licensee initiated condition reports, cleaned off all of the deposits and completed VT-2 inspections of piping in the area.

  The issue was more than minor because it impacted the equipment performance attribute of the Mitigating Systems Cornerstone, whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, boric acid accumulations and leakage impacting a Class 2 system requiring ASME Code Section XI corrective actions could go undetected during further code inspection intervals. Inspection Manual Chapter 0609, Appendix E, example 2c, helped inform that determination because the example states that a finding would be more than minor if degradation existed following periods of missed testing. The finding screened as very low safety significance (Green) by answering ‘no’ to questions in the Mitigating Systems column of IMC 0609, Attachment 4, Table 4a, since the boric acid accumulations did not result in a loss of function for the impacted components. The inspectors determined that there was no associated cross-cutting aspect due to the age of the issue. (Section 1R15)

Cornerstone: Public Radiation Safety

- Green. The inspectors identified a finding of very low safety significance and associated NCV of TS 5.5.1 for failure to establish, implement and maintain the Offsite Dose Calculation Manual (ODCM). Specifically, the licensee failed to establish a backup radiation monitor capable of performing monitoring consistent with the primary radiation monitors and ODCM requirements. Over several months, the licensee experienced multiple failures of the steam line and stack radiation monitors. The ODCM provides direction to point a backup monitor at the effected effluent path should the primary

monitor fail. The backup radiation monitor could not perform its intended function due to physical obstructions and geometry. The licensee instituted alternate means of monitoring releases when the primary monitor does not work and has entered the condition into the corrective action program.

The inspectors concluded that the failure to establish RIA 2328 to be an effective backup for the stack and steam line radiation monitors was a performance deficiency that warranted a significance determination. Since RIA-2328 potentially impacts both Public Radiation Safety and Emergency Planning Cornerstones, the inspectors reviewed the significance under both cornerstones. For radiation protection, the inspectors compared the issue to the examples in Appendix E, and concluded that example 6.b applied. Example 6.b states that a radiation monitor that cannot perform its safety function with a reasonable level of safety margin is an example of a more than minor issue. Further, the inspectors determined the finding was more than minor because it impacted the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation and is associated with the program and process attribute. This finding was assessed using IMC 0609, Attachment D for the Public Radiation Safety SDP and determined to be of very low-safety-significance (Green) because this was not a failure to implement the effluent program and public dose remained less than 10 CFR Part 50, Appendix I, limits. In addition, the radiation monitor is used in the emergency plan for determining an emergency action level. The issue screened out as minor in this cornerstone, because there are other EALs that would be available to ensure the correct classification could be met within required times. There was no cross-cutting aspect in that the procedures and radiation monitor have been in place for several years and do not reflect current plant performance. (Section 1R13)

- Green. The inspectors identified a finding of very low-safety-significance and an associated NCV of TS 5.4.1, Procedures, for the failure to implement procedures and include the steam generator mausoleum in the groundwater risk-ranking program for structures, systems, or components after a small amount of water was identified on the floor that contained Cs-137 and tritium with a credible mechanism to reach groundwater. Specifically, the licensee did not implement Station Procedure EN-CY-111, 'Radiological Groundwater Monitoring Program' to evaluate and document this structure after it was determined to contain radioactive liquids with a single barrier before reaching groundwater. Completion of the groundwater risk-ranking process may have prescribed additional measures to enhance or reinstate leak detection methods for this structure that contains licensed material and for which there is a credible mechanism for licensed material to reach groundwater. The licensee entered the condition into the corrective action program. Corrective actions included creating a recurring action item AR 00107492 to inspect the mausoleum every 6 months and clean up any water.

  The finding was more than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain, in that these conditions could result in reduced capability to detect and correct leaks of radioactive material before there is an impact on public dose. It is associated with program and process attribute of this cornerstone. Using IMC 0609, Attachment D, for the Public Radiation Safety SDP, the inspectors determined the finding to be of very low-safety significance because there is no indication of a spill or release of radioactive material

on site or to the offsite environs from this structure and therefore, this finding was not a failure to implement the effluent program and public dose remained less than 10 CFR Part 50, Appendix I, limits. The finding was previously entered in the licensee's corrective action program. However, the licensee failed to take appropriate corrective actions to address issues. Consequently, this deficiency has a cross-cutting aspect in Problem Identification and Resolution (Corrective Action Program). (P.1(d)). (Section 2RS7).

- Green. The inspectors identified a finding of very low-safety significance and associated NCV of TS 5.5.1.c, for a change that was made to the ODCM in 2004 to eliminate drinking water well sampling with an inaccurate evaluation for the change. This evaluation failed to address community wells that provide drinking water to homes immediately adjacent to plant property to the south. These community wells are between the plant site and the Covert Township Park. These locations were drinking water wells that were historically sampled until the 2004 ODCM change. This issue was entered into the licensee corrective action program as CR-PLP-2010-1013. The licensee revised the ODCM to add the sampling and analysis of the Palisades Park drinking water well.

  The finding was more than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain, in that these conditions could result in reduced capability to detect potential impacts associated with this pathway. It is associated with program and process attribute of this cornerstone. Using IMC 0609, Attachment D, for the Public Radiation Safety SDP, the inspectors determined that the finding was of very low-safety significance because it involved the environmental monitoring program. The finding was previously entered in the licensee's corrective action program. However, the licensee failed to thoroughly evaluate the problem and did not ensure that the problem was resolved. Consequently, this deficiency has a cross-cutting aspect in Problem Identification and Resolution (Corrective Action Program). (P.1(c)). (Section 2RS7).

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

The Plant began the inspection period at 100 percent power. The plant remained at or near 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors verified that plant features and procedures for operation and continued availability of offsite and alternate alternating current (AC) power systems during adverse weather were appropriate. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator (TSO) and the plant to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. Examples of aspects considered in the inspectors' review included:

- The coordination between the TSO and the plant during off-normal or emergency events;
- The explanations for the events;
- The estimates of when the offsite power system would be returned to a normal state; and
- The notifications from the TSO to the plant when the offsite power system was returned to normal.

The inspectors also verified that plant procedures addressed measures to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system prior to or during adverse weather conditions. Specifically, the inspectors verified that the procedures addressed the following:

- The actions to be taken when notified by the TSO that the post-trip voltage of the offsite power system at the plant would not be acceptable to assure the continued operation of the safety-related loads without transferring to the onsite power supply;
- The compensatory actions identified to be performed if it would not be possible to predict the post-trip voltage at the plant for the current grid conditions;
- A re-assessment of plant risk based on maintenance activities which could affect grid reliability, or the ability of the transmission system to provide offsite power; and
- The communications between the plant and the TSO when changes at the plant could impact the transmission system, or when the capability of the transmission system to provide adequate offsite power was challenged.

Documents reviewed are listed in the Attachment to this report. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was

identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

This inspection constituted one readiness of offsite and alternate AC power systems sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- 'C' Auxiliary Feedwater (AFW) with 'A/B' train out of service; and
- low pressure safety injection pump with opposite train out-of-service

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), TS requirements, outstanding work orders (WOs), 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On June 3, 2011, the inspectors completed a full system alignment inspection of the fire protection 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 line ups, 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 WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

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:

- D switchgear room;
- 1-1 Emergency Diesel Generator (EDG) room;
- screenhouse; and
- charging pump rooms.

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 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 four quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On May 2, 2011 the inspectors observed a fire brigade activation and control room response for an actual fire in an installed, non-safety related 480V transformer. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the debrief, and took appropriate corrective actions. Specific attributes evaluated were:

- employment of appropriate fire fighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- search for victims and propagation of the fire into other plant areas; and
- utilization of pre-planned strategies;

Additionally, the inspectors observed fire brigade training on May 26, 2011 at the fire training center in Kalamazoo, MI.

Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

a. Inspection Scope

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 reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the corrective action program to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area 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:

- Engineered safeguards rooms.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05. Inspection performed for this sample also satisfied a portion of the requirements for Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event," which is documented in inspection report 05000255/2011011.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

The reviews described in Sections 1R08.1, 1R08.2, R08.3, 1R08.4, and 1R08.5 of IP 71111.08 "Inservice Inspection" had been previously completed during October of 2010 and counted as one inspection sample as documented in NRC Inspection Report 05000255/2010005. The additional review discussed below was completed in accordance with Section 1R08.2 of IP 71111.08 does not constitute a complete inspection sample.

Reactor Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

In October of 2010, the licensee completed a bare metal visual examination of the reactor vessel head and the inspectors had observed this activity to determine if it was completed in accordance with the requirements of the ASME CC N-729-1. As a result of this inspection, the inspectors identified an unresolved item (URI) 05000255/2010005-03 associated with the licensee's decision to not evaluate corrosion present on the reactor vessel head.

On November 1, 2010, the licensee issued a position in a paper (Reference CR-PLP-2010-05407), to document the basis for not evaluating head corrosion and the basis for compliance with CC N-729-1 requirements. The NRC reviewed the licensee position paper and on May 3, 2011, documented the Agency's conclusions in Task Interface Agreement (TIA) No. 2011-006 (ADAMs Accession No. ML111110722).

From May 3, 2011 through June 2, 2011, the inspectors reviewed the licensee's position paper, TIA No. 2011-006 and discussed the results with the licensee.

b. Findings

Failure to Evaluate Reactor Vessel Head Corrosion During Visual Examination

Introduction: A finding of very low safety significance (Green) and associated non-cited violation of 10 CFR Part 50.55a(g)(6)(ii)(D)(1), "Reactor Vessel Head Inspections," were identified by the inspectors for the licensee's failure to evaluate corrosion present on the reactor vessel head during a CC N-729-1 VE visual examination.

Description: On October 17, 2010, the licensee completed a VE visual examination of the reactor vessel head and no evidence of leakage from the vessel head penetration nozzles was identified. Additionally, the licensee completed ultrasonic examination of each vessel head penetration nozzle in accordance with CC N-729-1 requirements and did not identify any flaws.

In October of 2010, during observation of the CC N-729-1 required VE visual examination, the inspectors identified shallow areas of corrosion (potential wastage) on the vessel head near several vessel head penetration nozzles (e.g., Nozzles Nos. 23, 33, 51 and 52). The licensee staff concluded that these corrosion areas were not caused by vessel head penetration nozzle leakage because ultrasonic examination of the vessel head penetration nozzles did not reveal any flaws and visual examination of the outer surface of the head had not identified evidence of nozzle leakage (e.g. boric acid deposits). The licensee believed this corrosion was caused by leakage of water sources above the head, which had occurred prior to their 2003 baseline head inspection. In CAP 034719, the licensee documented the completion of the 2003 bare metal visual examination of the vessel head and identified boric acid stain between nozzle penetrations Nos. 1 and 3 and scaling (rust) which exists on the reactor head surface and was most significant in the vicinity of nozzle penetration No. 17. The licensee concluded that this surface condition was characteristic of a 30 year old carbon steel component and that no evidence of through-wall nozzle leakage existed. The licensee documented in CAP 034719, that the head was satisfactorily inspected, that stains were removed to allow inspection of underlying metal and that scaling present, did not appear to impact the base metal to any significant depth.

Paragraph 3141(c) of CC N-729-1 stated "Relevant conditions for the purposes of the VE shall include areas of corrosion, boric acid deposits, discoloration, and other evidence of nozzle leakage." Paragraph 3142.1.b.2 of CC N-729-1 required all relevant conditions be evaluated to determine the extent, if any, of degradation. The licensee interpreted these requirement to mean that corrosion, boric acid deposits, and discoloration were only relevant conditions requiring evaluation if they were caused by boric acid leakage from J-groove welds and nozzles. The licensee staff believed that any corrosion induced by boric acid contacting the vessel head from sources above the head would have been properly addressed through their corrective action and boric acid corrosion control programs. However, the licensee had not measured the extent of head corrosion nor recorded comparisons between the 2010 visual examinations and earlier visual examinations to assess potential changes in the extent of head corrosion. The lack of a detailed evaluation for head corrosion was of concern because boric acid that drips from flanges or other sources and contact the head at normal operating temperature can result in a corrosion rate which exceeds 1 inch per year (reference Boric Acid Corrosion Guidebook Revision 1 – Electric Power Research Institute Technical Report 1000975).

After NRC identification, the licensee determined that no evaluation was required because the head corrosion was not caused by boric acid leakage from J-groove welds and nozzles and documented their position in CR-PLP-2010-05407 and in a paper "Bare Metal Visual Examinations in Accordance with CC N-729-1," dated November 1, 2010. The inspectors disagreed with the licensee's interpretation of these CC N-729-1 requirements and initiated an Agency review to determine the CC applicability for head corrosion identified during a VE examination (reference URI 05000255/2010005-03). Following an Agency review of the CC N-729-1 requirements and the licensee's position

paper, the NRC determined that the CC requirements to identify and evaluate head corrosion present during the 2010 Palisades VE examination were applicable (reference NRC TIA No. 2011-006 - ADAMs Accession No. ML111110722). Specifically, the NRC determined that a relevant condition such as head corrosion must be evaluated in accordance with Section 3142.1(b)(2) of CC N-729-1 regardless of the source or cause.

The licensee issued CR PLP-2011-02413 to document the nonconformance with CC N 729-1 and as a corrective action compared pictures taken during the 2010 head visual examination with video records from a 2003 visual head examination. Based upon this comparison, the licensee determined that no indication of significant wall loss or structural degradation had occurred. Further, the licensee determined that the surface irregularities observed were caused by a combination of scaling (e.g., rusting) due to high humidity and a rough surface condition caused by the original head forging process and were not the result of boric acid induced corrosion or wastage. Additionally, the licensee determined that the "white spots" on the head were the result of boron staining, white mastic residue used to attach insulation to the head, or chromate water deposits from a previous component cooling water leak. The licensee did not identify any evidence of leakage of boron or boric acid on the head since the 2003 visual head examination. Based upon these observations and conclusions, the licensee determined that the reactor vessel head was operable and acceptable for continued service. The licensee also assigned a corrective action to ensure that an appropriate evaluation of relevant indications was incorporated into the vessel head examination procedure (CEP-NDE-0955 Visual Examination of Bare Metal Surfaces).

Analysis: The inspectors determined that failure to evaluate areas of corrosion identified during the VE visual examination of the vessel head was contrary to 10 CFR Part 50.55a(g)(6)(ii)(D)(1) and was a performance deficiency.

The finding was determined to be more than minor because the finding was associated with the Initiating Events Cornerstone attribute of Equipment Performance and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. Absent NRC identification, the failure to evaluate head corrosion could have allowed unacceptable wastage to be returned to service. If areas of corrosion reduced vessel head strength, it could place the reactor coolant system at increased risk for through-wall leakage and/or failure.

The inspectors determined the finding could be evaluated using the Significance Determination Process in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase I - Initial Screening and Characterization of findings," Table 4a for the Initiating Events Cornerstone. The licensee completed actions to assess the corrosion and surface irregularities observed and determined that no indication of significant wall loss or structural degradation had occurred. The inspectors answered "No" to the Significance Determination Process Phase I screening question "Assuming worst case degradation, would the finding result in exceeding the TS limit for any reactor coolant system leakage or could the finding have likely affected other mitigation systems resulting in a total loss of their safety function assuming the worst case degradation"? Therefore, the finding screened as having very low safety significance (Green).

This finding had a cross-cutting aspect in the area of Human Performance, Decision Making because the licensee staff failed to make conservative assumptions in decisions

affecting the integrity of the reactor vessel head. Specifically, the decision to not evaluate areas of corrosion present on the vessel head was not based sufficient information to demonstrate that the proposed action/decision was safe (Item H.1 (b)). The inspectors reached this conclusion based discussions with licensee staff and review of associated records.

Enforcement: Title 10 CFR Part 50.55a(g)(6)(ii)(D)(1) required in part that "All licensee's of pressurized water reactors shall augment their inservice inspection program with American Society of Mechanical Engineers (ASME) CC N-729-1 subject to the conditions specified in paragraphs (g)(6)(ii) (D)(2) through (6) of this section."

Paragraph 3142.1(b)(1) of CC N-729-1 required in part "Components with relevant conditions required further evaluation. And; Paragraph 3142.1(b)(2) required in part "Any degradation detected shall be evaluated to determine if any corrosion has impacted the structural integrity of the component."

Contrary to the above, on October 17, 2010, during the CC N-729-1 VE visual examination, areas of corrosion (a relevant condition) were present on the reactor vessel head causing degradation which was not evaluated to determine if it impacted the structural integrity of the affected component (vessel head). Because this violation was of very low safety significance and it was entered into the licensee's corrective action program as CR PLP-2011-02413, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000255/2011003-01, Failure to Evaluate Corrosion During Reactor Vessel Visual Examination)

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On May 24, 2011 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.

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 were identified.

.2 Annual Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, administered by the licensee from January 5 through February 11, 2011, as required by 10 CFR 55.59(a). The results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification SDP," to assess the overall adequacy of the licensee's Licensed Operator Requalification Testing program to meet the requirements of 10 CFR 55.59.

This inspection constitutes one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- EDGs;
- AFW system; and
- control room heating, ventilation and air conditioning system

The inspectors reviewed events such as where ineffective equipment maintenance had 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings 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:

- AFW and safety-related load center work (5/9-5/13);
- service water and AFW work (6/13-6/19); and
- shutdown cooling system valve testing.

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 three samples as defined in IP 71111.13-05.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated NCV of TS 5.5.1 for failure to establish, implement and maintain the ODCM. Specifically, the licensee failed to establish a backup radiation monitor capable of performing monitoring consistent with the primary radiation monitors.

Discussion: Over several months, the licensee experienced multiple failures of the steam line and stack radiation monitors. Due to obsolescence issues, the licensee could not effect long term repairs of these monitors. The plant has an installed backup monitor that can be pointed at either the stack or the tail pieces of the main steam line relief valves. The ODCM provides direction to point this monitor at the affected effluent path should the primary monitor fail. Pointing of this monitor provides compensation for the

loss of the primary monitor. In February 2010, both radiation monitors were non-functional at the same time. In discussion with the licensee, the licensee stated that in the event of a release, the backup radiation monitor, RIA 2328, could be pointed at the effected effluent path and monitored to support EAL declarations. In order to understand the effort needed to re-direct the radiation monitor, the inspectors performed a walkdown of RIA-2328. During the walkdown, the inspectors noted that a ventilation plenum blocked the line of sight to the stack and that the stack exhaust had a bend between the exit penetration and the mount of the stack to the containment structure. The inspectors reviewed the design documents for RIA-2328 and determined that the supporting calculations did not consider either the interference or bend in the exhaust stack. The licensee confirmed the inspectors' observation and agreed that RIA 2328 could not be used as a backup for either radiation monitor.

Analysis: The inspectors concluded that the failure to establish RIA 2328 to be an effective backup for the stack and steam line radiation monitors was a performance deficiency that warranted a significance determination. Since RIA-2328 impacts both Radiation Protection and Emergency Planning Cornerstones, the inspectors reviewed the significance under both cornerstones. For radiation protection, the inspectors compared the issue to the examples in Appendix E, and concluded that example 6.b applied. Example 6.b states that a radiation monitor that cannot perform its safety function with a reasonable level of safety margin is an example of a more than minor issue. Further, the inspectors determined the finding was more than minor because it impacted the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation and is associated with the program and process attribute. This finding was assessed using IMC 0609, Attachment D for the Public Radiation Safety SDP and determined to be of very low-safety-significance (Green) because this was not a failure to implement the effluent program and public dose remained less than 10 CFR Part 50, Appendix I, limits.

In addition, the radiation monitor is used in the emergency plan for determining an emergency action level. The issue screened out as minor in this cornerstone, because there are other EALs that would be available to ensure the correct classification could be met within required times. There was no cross-cutting aspect in that the procedures and radiation monitor have been in place for several years and do not reflect current plant performance.

Enforcement: Technical Specification 5.5.1 requires the licensee to establish, implement and maintain the Offsite Dose Calculation Manual (ODCM). The ODCM requires, in part, gaseous effluent monitors to have alarm/trip setpoints to ensure that offsite concentrations, when averaged over 1 hour, will not be greater than Appendix A, Section III.B.1. Contrary to this requirement, on February 24, 2011 and on other occasions, the licensee used RIA-2328 to monitor stack releases without setpoints established to ensure offsite dose remained within limits. The licensee has suspended use of RIA-2328 pending modification to ensure the monitor meets ODCM requirements. The licensee has entered the finding into their CAP as CR-PLP-2011-1712. Because the violation is of very low safety significance and is entered in to the licensee's CAP, this violation is being treated as an NCV consistent with Section 2.3.2 of the NRC enforcement Policy. NCV 05000255/2011003-02, Failure to Establish a Back-up Radiation Monitor.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- 'B' AFW pump trip and steam trap issues;
- reactor head due to failure to meet inspection requirements;
- safety injection tank roof leakage;
- 1-2 EDG jacket water pump leakage; and
- pinhole leak in service water piping

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 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 to this report.

This operability inspection constituted five samples as defined in IP 71111.15-05.

b. Findings

(1) Failure to Inspect American Society of Mechanical Engineer's Class 2 Piping

Introduction: A self-revealed finding of very-low safety significance (Green) with an associated NCV of TS 5.4.1 occurred for the licensee's failure to properly implement the procedure for inspection of ASME Class 2 piping associated with the SIRW tank. Specifically, while investigating roof leaks, the licensee discovered boric acid deposits and an active flange leak on this piping. Documentation and interviews revealed that this ASME class 2 piping had not been inspected as required per the site procedure.

Description: On May 18, 2011 the licensee identified water leakage from the ceiling in the control room during a period of heavy rain. During a subsequent plant walkdown, the licensee also noted water running down a wall from recessed areas high above the floor in the component cooling water room of the auxiliary building. The recessed areas (referred to as the Safety Injection and Refueling Water (SIRW) tank 'catacombs') contain both trains of emergency core cooling system suction piping from the SIRW tank and some smaller recirculation lines. The catacombs are a series of concrete walls which help to support the roof on which the SIRW tank rests. Discussions with various plant staff revealed that about 20 years ago, modifications to a roof top access hindered

access to the area, and as a result, the licensee considered the area to be inaccessible. Although ASME Code relaxes requirements for inspecting inaccessible areas, inconvenient access to areas does not constitute inaccessibility; hence, the associated piping must be inspected. To investigate the recent roof leakage, the licensee was able to construct a scaffold in the component cooling water room to obtain access to the catacombs. From the scaffold, personnel were able to enter the open areas and inspect the piping. Accumulations of white residue were found on the floors, ceiling, and on some of the piping. Some slight dripping from the roof was noted as well. The licensee believes that the residue is a combination of boric acid and washout from the concrete roof. Determination of the source of the roof leakage is still underway. Additionally, the licensee cleaned the piping and conducted ASME VT-2 inspections. The inspections revealed a flanged connection on a recirculation line with an active gasket leak estimated to be less than one drop per minute. No through-wall or weld leakage was identified.

The licensee tried to determine when the last ASME Code inspection was performed on the piping in the catacombs. The licensee translated ASME requirements, in part, into procedures RT-71M, Inservice Test Procedure (specific to SIRW tank piping), and engineering procedure EM-09-13 (general guidance). Both of these procedures specify an inspection interval of about 3.5 years for Class 2 components using the VT-2 methodology. RT-71M includes piping in the catacombs. The last performance of RT-71M was in 2009, and that paperwork indicated the catacombs were inaccessible. Previous records do not identify the area as inaccessible; however, site personnel involved in the inspections going back to 2001 stated they did not perform any visual inspections of the catacomb piping. In addition, the licensee could not locate radiation surveys to corroborate inspections had occurred. The current licensee assessment is that since 1995 (when there is a record of catacomb entry for ASME inspections) there had been no inspections until the recent roof leakage. Despite the procedures specifically identifying piping in the catacombs as being subject to inspection and providing guidance on how to perform inspections, the inspectors concluded the catacomb piping has not been inspected per the inspection intervals outlined in site procedures and the ASME Code.

Analysis: The failure to implement procedures so appropriate inspections were performed on ASME Class 2 piping within Code intervals was a performance deficiency warranting further evaluation with the SDP. Specifically, while addressing a roof leak, the licensee realized that the SIRW tank piping in the catacombs was not being inspected per the ASME Code. Subsequent inspection of the piping revealed a leak at a flanged joint that required ASME Code Section XI corrective actions. Prior to the roof leakage, the licensee considered the catacombs inaccessible. Therefore, there were no plans to visually inspect the catacomb piping (which would include the leaking component) as part of the ASME Code inspection intervals. The issue was more than minor because it impacted the equipment performance attribute of the Mitigating Systems Cornerstone, whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, boric acid accumulations and leakage impacting a Class 2 system requiring ASME Code Section XI corrective actions could go undetected during further code inspection intervals. Inspection Manual Chapter 0609, Appendix E, example 2c, helped inform that determination because the example states that a finding would be more than minor if degradation occurred to action levels in the periods of missed testing. The finding screened as very low safety significance (Green) by

answering 'no' to questions in the Mitigating Systems column of IMC 0609 Attachment 4, Table 4a, since the boric acid accumulations did not result in a loss of function for the impacted components. The inspectors determined that there was no associated cross-cutting aspect due to the age of the issue.

Enforcement: Technial Specification 5.4.1, Procedures, requires in part, that written procedures shall be established, implemented, and maintained covering programs in Specification 5.5. Technical Specification 5.5.7 describes the inservice testing program. Licensee procedures RT-71M and EM-09-13 implement ASME inservice testing requirements. Contrary to TS 5.4.1, on February 13, 2009, (and for multiple Code intervals prior), the licensee did not implement RT-71M such that the Class 2 piping under the SIRW tank roof was inspected. As a result, the gasket leak requiring ASME Section XI corrective actions that had developed would have gone undetected had recent unrelated issues not directed attention to area of concern. For corrective action, condition reports were written for issues identified during the recent inspection. A condition report was also written to explore the failure to include the catacomb piping during RT-71M inspections. Because the violation is of very low safety significance and is entered in to the licensee's CAP, this violation is being treated as an NCV consistent with Section 2.3.2 of the NRC enforcement Policy. NCV 05000255/2011003-03, Failure to Inspect ASME Class 2 Piping.

c. Unresolved Item: Turbine-Driven Auxiliary Feedwater Pump Trip

Introduction: The inspectors identified an Unresolved Item (URI) for failure of the turbine-driven auxiliary feedwater (TDAFW) pump during a surveillance test on May 10, 2011. Specifically, the overspeed trip device actuated for no apparent reason, shutting the pump down.

Description: On May 10, 2011 the licensee was operating the TDAFW pump for a surveillance test. Approximately 3 minutes into the test run, the trip lever became unseated from the knife edge, resulting in closure of the trip valve. By design, the trip lever is part of the mechanical overspeed trip. The licensee validated that an overspeed condition did not exist by independent means including feedflow and shaft speed. In addition, the licensee ruled out human error; i.e. operator contact with the trip mechanism. The licensee discovered improper application of grease on the knife edge from an earlier maintenance outage and believes the presence of the grease resulted in the pump trip. The licensee is performing an analysis to validate that greasing of the knife edge caused the pump trip. Pending completion of the report on the analysis of the trip lever and the licensee's evaluation of the results, this issue will be classified as a URI. URI 05000255/2011003-04, Turbine-Driven Auxiliary Feedwater Pump Trip.

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:

- Digital Reference Unit replacement in 1-1 EDG;
- 'B' AFW pump after trip and steam trap issues; and

- Control Room heating, ventilation and air conditioning pressure switch 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 TSs, 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 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:

- RI-99 Left Channel Nuclear Instrument Calibrations (routine);
- inservice test of 'C' Containment Spray Pump (IST);
- PCS Leakage from Head Vent System (Leakage);
- 'A/B' train AFW flow calibrations (routine);
- testing of 'C' Auxiliary feedwater pump (routine); and
- QO-42 valve testing (IST).

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 was in accordance with TSs, the USAR, 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, ASME 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 three routine surveillance testing samples, two inservice testing samples, and one reactor coolant system leak detection inspection sample, as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

1EP2 Alert and Notification System Evaluation (71114.02)

a. Inspection Scope

The inspectors held discussions with Emergency Preparedness (EP) staff regarding the operation, maintenance, and periodic testing of the Alert and Notification System (ANS) in the Palisades Nuclear Power Plant's plume pathway Emergency Planning Zone. The inspectors reviewed monthly trend reports and siren test failure records from October 2009 through March 2011. Information gathered during document reviews and interviews was used to determine whether the ANS equipment was maintained and tested in accordance with Emergency Plan commitments and procedures. Documents reviewed are listed in the Attachment to this report.

This alert and notification system inspection constituted one sample as defined in IP 71114.02-05.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors reviewed and discussed with plant EP staff the emergency plan commitments and procedures that addressed the primary and alternate methods of initiating an Emergency Response Organization (ERO) activation to augment the on-shift ERO as well as the provisions for maintaining the plant's ERO emergency telephone book. The inspectors also reviewed reports and a sample of corrective action program records of unannounced off hour augmentation tests, which were conducted between October 2009 and March 2011, to determine the adequacy of post drill critiques and associated corrective actions. The inspectors also reviewed a sample of the EP training records, approximately 12 records for ERO personnel, who were assigned to key and support positions, to determine the status of their training as it related to their assigned ERO positions. Documents reviewed are listed in the Attachment to this report.

This emergency response organization augmentation testing inspection constituted one sample as defined in IP 71114.03-05.

b. Findings

No findings were identified.

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

a. Inspection Scope

Since the last NRC inspection of this program area, Revisions 19 and 20 of the Emergency Plan were implemented based on the licensee's 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 (EAL) changes made between March 2010 and May 2011 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 were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed a sample of Quality Assurance staff's 2010 and 2011 audits of the Palisades Nuclear Power Plant emergency preparedness program to determine that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed critique reports and samples of corrective action program records associated with the 2010 biennial exercise, as well as various EP drills conducted in 2010 and 2011, in order to determine that the licensee fulfilled its drill commitments and to evaluate the licensee's efforts to identify, track, and resolve concerns identified during these activities. Additionally, the inspectors reviewed a sample of EP items and corrective actions related to the facility's EP program and activities to determine whether corrective actions were completed in accordance with the sites corrective action program. Documents reviewed are listed in the Attachment to this report.

This correction of emergency preparedness weaknesses and deficiencies inspection constituted one sample as defined in IP 71114.05-05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on June 1, 2011, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator control room, technical support center, and operations support center 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. Additionally, the inspectors reviewed the results of the first quarter integrated drill with the regional emergency preparedness inspector during their visit to the site for baseline inspection activities. This review did not constitute an additional inspection sample for the quarter as activities had been previously been credited in Inspection Report 05000255/2011002.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings were identified.

c. Unresolved Item: Declaration of Unusual Event Vice Alert During Emergency Drill

Introduction: The inspectors identified a URI regarding the declaration of an unusual event (UE) for flooding in the auxiliary feedwater (AFW) pump room during a drill. Specifically, based on the information provided to the crew from the drill scenario, the inspectors believed that an Alert would have been the appropriate declaration.

Description: During review of the February 23, 2011 integrated emergency planning drill, the inspectors identified what appeared to be an incorrect EAL declaration. The first event of the drill involved flooding from a fire header rupture in the AFW pump room. The scenario was structured such that a UE or an Alert could be the correct declaration based on whether or not the shift manager felt there was a safety concern. The scenario also provided flood levels based on time elapsed from the rupture for the controllers to provide to the crew. Upon their investigation of the leak, a message was provided to the crew that there was approximately three feet of water in the room. This would submerge approximately two-thirds of the electric AFW pump motor and render it unavailable. A UE was declared and was later critiqued by the emergency planning organization as an appropriate declaration. After reviewing the EAL scheme and basis, the inspectors determined an Alert should have been the correct declaration. While the inspectors were engaging regional staff on this potential finding, questions were raised regarding whether or not a performance deficiency existed and how this issue would be best processed in the significance determination process (if it became a finding). Specifically, further action is needed by the NRC to determine the appropriate application of the EAL scheme for the given circumstances in the drill. Additionally, if the issue is determined to be a finding, the appropriate planning standard to use in the SDP needs to be resolved. URI 05000255/2011003-05, Application of EAL Scheme During Drill.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2RS7 Radiological Environmental Monitoring Program (71124.07)

The inspection activities supplement those documented in Inspection Report 05000255/2010003, and constitute one complete sample as defined in IP 71124.07-05.

.1 Site Inspection (02.02)

a. Inspection Scope

The inspectors reviewed the calibration and maintenance records for environmental air samplers to verify that they demonstrate adequate operability of these components.

The inspectors performed an assessment of whether the licensee has initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to verify that environmental sampling is representative of the release pathways as specified in the ODCM and that sampling techniques are in accordance with procedures.

Inspectors selected structures, systems, or components that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach groundwater, and assessed whether the licensee has implemented a sampling and monitoring program sufficient to detect leakage of these structures, systems, or components to groundwater.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The licensee uses a vendor laboratory to analyze the radiological environmental monitoring program samples so the inspectors reviewed the results of the vendor's quality control program, including the interlaboratory comparison, to assess the adequacy of the vendor's program.

b. Findings

(1) Failure to Include the Steam Generator Mausoleum in the Groundwater Protection Risk Ranking Program

Introduction: The inspectors identified a finding of very low-safety-significance (Green) and an associated NCV of TS 5.4.1, Procedures, for the failure to include the steam generator mausoleum in the groundwater program for structures, systems, or components that involve radioactive material with a credible mechanism to reach groundwater. Specifically, the licensee did not implement Station Procedure EN-CY-111, 'Radiological Groundwater Monitoring Program' to evaluate and document this structure after it was determined to contain radioactive liquids with a single barrier before reaching groundwater.

Description: The licensee replaced the steam generators in 1990. The old steam generators were placed inside the mausoleum, a concrete structure, built specifically for this purpose. The mausoleum was designed with limited ventilation within the building and a concrete floor with a sump at one end to catch any liquid inside the building. The liquids can come from various means including some leakage of liquids from the steam generators or from condensation that results from the heating/cooling the large metal steam generators. The mausoleum was designed with groundwater monitoring wells around the perimeter of the building, however, sampling and analysis from these wells was discontinued in 2008.

The inspectors previously identified that the mausoleum was not included the licensee's risk-ranking review that was performed as part of the industry's groundwater protection initiative. At the time of the inspector's observation, the licensee assumed that that the building was water tight and did not have drains or sumps. Subsequently, the licensee entered the mausoleum and identified that the sump was dry but a small amount of water was identified on the floor. The licensee collected samples of this water for analysis. The licensee identified Cs-137 and tritium in that water. The licensee then created a recurring action AR No. 00107492 to inspect the mausoleum every 6 months and clean up any water. This action was created without reviewing EN-CY-111,

'Radiological Groundwater Monitoring Program' which has the purpose "[T]o establish the elements of a fleet radiological groundwater monitoring program (RGWMP) for the timely detection of inadvertent radiological releases to groundwater and the monitoring of any known radiological groundwater plumes." Section 5.3 of this procedure should have been implemented to evaluate and document this structure after it was determined to contain or could contain radioactive liquids with a single barrier before reaching groundwater. Completion of this groundwater risk ranking process may have prescribed additional measures to enhance or reinstate leak detection methods for this structure that contains licensed material and for which there is a credible mechanism for licensed material to reach groundwater.

Analysis: The failure to implement procedures for sampling and monitoring potential liquid releases to the environment is a performance deficiency, because the licensee failed to meet this requirement and the cause of this issue was reasonably within its ability to foresee and correct, and should have been prevented.

The finding was not subject to traditional enforcement since the incident did not have a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and was not willful.

The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain. It is associated with program and process attribute of this cornerstone. There is no indication of a spill or release of radioactive material on site or to the offsite environs from this structure. However, these conditions could result in reduced capability to detect and correct leaks of radioactive material before there is an impact on public dose. This finding of the effluent release program was assessed using IMC 0609, Attachment D for the Public Radiation Safety SDP and determined to be of very low-safety-significance (Green) because this was not a failure to implement the effluent program and public dose remained less than 10 CFR Part 50, Appendix I, limits. This finding had a cross-cutting aspect in the area of Problem Identification and Resolution related to the cross-cutting component of corrective action program, in that the licensee had previously entered this issue into their corrective action program, however failed to take appropriate corrective actions to address the groundwater protection safety issue in a timely manner. (P.1(d))

Enforcement: Technical Specification 5.4.1 states, in part, written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Regulatory Guide 1.33, Revision 2, Appendix A, Section 7.a.2, recommends procedures for sampling and monitoring potential liquid releases to the environment. Contrary to the above, as of April 29, 2011, licensee procedure EN-CY-111, 'Radiological Groundwater Monitoring Program,' was not implemented to evaluate the risk from the steam generator mausoleum, a structure that contained liquid radioactive material with a credible mechanism to reach groundwater. This was a violation. Corrective actions included creating a recurring action item AR No.00107492 to inspect the mausoleum every 6 months and clean up any water. In addition, the site has begun sampling the monitoring wells again. Since the issue was of very low-safety significance and has

been entered in the licensee's CAP as CR-PLP-2011-2143 this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.
NCV 05000255/2011003-06, Failure to Include the Steam Generator Mausoleum in the Groundwater Protection Risk Ranking Program.

c. Unresolved Item: Anomalous Environmental Samples

Introduction: The inspectors identified that the licensee's evaluation of radioactive material identified in environmental samples was not complete and did not provide data on measurable levels of radiation and radioactive materials in the environment to evaluate the relationship between quantities of radioactive material released in effluents and resultant radiation doses to individuals from principal pathways of exposure. As a result, the inspectors identified a URI for the apparent non-compliance with 10 CFR Part 50, Appendix I, Section IV.B.2

Discussion: Broad leaf vegetation sampling program was reinitiated at Palisades in 2009. The licensee identified Cs-137 in most of the indicator samples with an average activity of 50.8 pCi/kg. Cs-137 was not identified in any of the control broadleaf samples. The licensee's evaluation of these anomalous results was provided in the 2009 Radiological Environmental Operating Report issued May 14, 2010. This evaluation correlated the activity to known plant releases and determined that the amount of Cs-137 identified in the samples was too high to be attributed to plant operations. Consequently, the licensee concluded that all of the Cs-137 resulted from fall out of atmospheric bomb testing. However, the licensee did not use empirical data such as preoperational environmental results or soil samples to support the conclusion. A fundamental objective of environmental sampling is to validate that radioactive material is not entering the environment through unmonitored or inadequately monitored release paths. This licensee's explanation of the elevated Cs-137 readings indicates a lack of understanding of the purpose of the program. The evaluation did not consider other plausible scenarios such as unknown, unmonitored releases of radioactive material that could have occurred.

The licensee indicated that a more rigorous evaluation review would be completed. The issue remains under review by the NRC and is categorized as a URI pending completion of that revised evaluation and NRC review. (URI 05000255/2011003-07; Anomalous Environmental Samples)

.2 Identification and Resolution of Problems (02.03)

a. Inspection Scope

The inspectors assessed whether problems associated with the radiological environmental monitoring program are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee's CAP. Additionally, they assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the radiological environmental monitoring program.

b. Findings

Introduction: The inspectors identified a finding of very low-safety significance (Green) and associated NCV of TS 5.5.1.c, for a change that was made to the ODCM in 2004 to

eliminate drinking water well sampling with an inaccurate evaluation for the change. This evaluation failed to address community wells that provide drinking water to homes immediately adjacent to plant property to the south. These community wells are between the plant site and the Covert Township Park. These locations were drinking water wells that were historically sampled until the 2004 ODCM change.

Description: In March 2010, the inspectors identified a finding of very low-safety significance and an associated NCV (NCV 50000255/2010002-03) of NRC requirements for a change that was made to the ODCM in 2004 with an inaccurate evaluation for the change. Specifically, the evaluation for the removal of drinking water wells from the ODCM consisted of a single paragraph that stated:

"Well water sampling consisted of monthly samples from the Plant, State Park, and Covert Township Park wells for drinking water. Over the past 2 years these samples have been eliminated, as the city of South Haven treated water service area has expanded to supply drinking water to all three locations. There are no longer any groundwater samples near the Palisades facility being utilized for drink or irrigation purposes. The Branch Technical Position states that groundwater samples should be taken from one or two sources if likely to affected, samples should be taken when this source is tapped for drinking or irrigation purposes in areas where the hydraulic gradient or recharge properties are suitable for contamination. The plant site, State Park, and Covert Township well samples collections/analysis were based on drinking water. There are no sources of groundwater being used for irrigation purposes adjacent to the plant site."

The inspectors determined that this evaluation was not correct. Specifically, this evaluation failed to address community wells that were still used to provide drinking water to homes immediately adjacent to plant property to the south. These community wells are between the plant site and the Covert Township Park, locations where drinking water wells were historically sampled until the 2004 ODCM change.

The inspectors determined that the licensee had not performed an evaluation to demonstrate that the drinking water wells for properties adjacent to the south side of plant property were not impacted by plant discharge or whether any calculated dose to an individual in this population was bounded by the sampling and analysis of the South Haven Municipal water supply.

Environmental monitoring of all pathways, including drinking water, is required to supplement the radiological effluent monitoring program and is intended to verify that measurable concentrations of radioactive material in the environment are not greater than expected on the basis of environmental exposure pathway modeling.

The finding was entered into in the CAP as CR-PLP-2010-1013 in March 2010. The actions completed to resolve the issue were rejected by the licensee's Onsite Safety Review Committee in November 2010. However, CR-PLP-2010-1013 was closed without this approval.

In April 2011, the inspectors reviewed actions taken by the licensee to address the finding and associated NCV of NRC requirements. The inspectors determined that as of April 29, 2011, the licensee failed to restore compliance either with an acceptable evaluation or by restoring drinking well sampling requirements to the ODCM. The licensee created CR-PLP-2011-2149 because the violation concerning a failure of the

ODCM revision documentation to address the community wells was not adequately addressed and brought to closure. However, the licensee has obtained well samples on a monthly basis starting in May 2011 with all results less than minimum detectable activity for radionuclides.

On May 17, 2011, the licensee revised the ODCM to add the sampling and analysis of the Palisades Park drinking water well. The inspectors determined that this action restored compliance with TSs. The inspectors determined that although CR-PLP-2010-1013 was inappropriately closed, compliance was within a reasonable period of time after the issue was identified in April 2011.

Analysis: The failure to implement TSs for managing ODCM changes is a performance deficiency, because the licensee failed to meet the requirement and the cause of this issue was reasonably within its ability to foresee and correct, and should have been prevented.

The finding was not subject to traditional enforcement since the incident did not have a significant safety consequence, did not impact the NRC's ability to perform its regulatory function, and was not willful.

The inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, but did not identify any examples similar to the performance deficiency. However, in accordance with IMC 0612, the inspectors determined that the finding was more than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain, in that these conditions could result in reduced capability to detect potential impacts associated with this pathway. It is associated with program and process attribute of this cornerstone. The finding was assessed using IMC 0609, Attachment D, for the Public Radiation Safety SDP and determined to be of very low-safety significance (Green) because it involved the environmental monitoring program.

This finding had a cross-cutting aspect in the area of Problem Identification and Resolution related to the cross-cutting component of corrective action program, in that the licensee had previously entered this issue into their CAP, however failed to thoroughly evaluate the problem and did not ensure that the problem was resolved. (P1(c))

Enforcement: Technical Specification 5.5.1.c states that changes to the ODCM shall be documented and records of reviews performed shall be retained. This documentation shall contain:

- Sufficient information to support the change together with the appropriate analyses or evaluations justifying the changes; and
- determination that the change will maintain the level of radioactive effluent control required by 10 CFR Part 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

Contrary to the above, as of April 29, 2011, the licensee did not have sufficient information to support the change to the ODCM for drinking water sampling requirements, together with the appropriate analyses or evaluations justifying the changes. This was a violation. Additionally, the licensee could not demonstrate that the

change maintained the level of radioactive effluent control required by 10 CFR Part 50, Appendix I, and did not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations. This issue was entered into the licensee corrective action program as CR-PLP-2010-1013. As of May 16, 2011, the licensee revised the ODCM to add to sampling and analysis of the Palisades Park drink water well. Because this issue was of very low-safety significance and was entered in and corrected through the licensee's corrective action program it is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. NCV 50-255/2011003-08, Failure to Adequately Manage Changes to the ODCM.

4. OTHER ACTIVITIES

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

4OA1 Performance Indicator Verification (71151)

.1 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours performance indicator (PI) for the period from the second quarter 2010 through the first quarter 2011. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Inspection Reports for the period of the second quarter 2010 through the first quarter 2011 to validate the accuracy of the submittals. 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 unplanned scrams per 7000 critical hours sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications performance indicator from the second quarter 2010 through the first quarter 2011. 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 6, dated October 2009, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC Integrated Inspection Reports for the period of the second

quarter 2010 through the first quarter 2011to validate the accuracy of the submittals. 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 unplanned scrams with complications sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - High Pressure Injection Systems performance indicator for the period from the first quarter of 2010 through the first quarter of 2011. 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 6, dated October 2009, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports, and NRC Integrated Inspection Reports for the period of the first quarter of 2010 through the first quarter of 2011 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 condition 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 high pressure injection system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.4 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System performance for the period from the second quarter 2010 through the first quarter 2011. 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 6, dated October 2009, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of from the second quarter 2010 through the first quarter 2011 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 heat removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.5 Drill/Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill/Exercise PI for the period from the first quarter 2010 through fourth quarter 2010. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; assessments of PI opportunities during predesignated control room simulator training sessions, performance during the 2010 biennial exercise, and performance during other drills. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one drill/exercise performance sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.6 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the ERO Drill Participation PI for the period from the first quarter 2010 through the fourth quarter 2010. 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 6, dated October 2009, was used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; performance during the 2010 biennial exercise and other drills; and revisions of the roster of personnel assigned to key emergency

response organization positions. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one ERO drill participation sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.7 Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System (ANS) PI for the period from the first quarter 2010 through the fourth quarter 2010. 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 6, dated October 2009, was used. The inspectors reviewed the licensee's records associated with the PI to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the NEI guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the PI; and results of periodic ANS operability tests. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one alert and notification system sample as defined in IP 71151-05.

b. Findings

No findings 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: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; 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 Attachment to this report.

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 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 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, and licensee human performance results. The inspectors' review nominally considered the 6 month period of October 2010 through March 2011, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self assessment reports, and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. 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 were identified.

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

.1 (Closed) Licensee Event Report 05000255/2010-002-00: Condition that Could Have Prevented the Fulfillment of a Safety Function

This event, which occurred on August 23, 2010, involved the loss of the Loss of Load Reactor Protection System function. Specifically, failure of a DC power system removed power from the circuitry supporting the Loss of Load trip function. Previous inspector review of this issue resulted in a NCV of TSs and a Severity Level IV violation for failing to make an 8 hour report. These violations are described in Inspection Report 05000255/2010004. Documents reviewed as part of this inspection are listed in the attachment. No additional findings or violations of NRC requirements were identified. This Licensee Event Report (LER) is closed.

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

.2 (Closed) Licensee Event Report 05000255/2010-004-00: Cracks Discovered in Emergency Diesel Generator Turbocharger Support Plates

This event, which occurred on November 9, 2010, involved the discovery of cracking on the 1-1 EDG turbocharger vertical support plates. On October 31, 2010, the licensee discovered two cracks in the vertical support plates for the 1-1 EDG turbocharger during a system walkdown. The licensee declared the EDG inoperable to perform repairs. While repairing the two cracks, a third was identified. This placed the EDG outside the bounds of previous operability evaluations which assumed two cracks. The licensee repaired all cracks and added formal preventative maintenance activities to periodically inspect for cracks. The LER was submitted because a detailed engineering evaluation had not yet been completed to assess past operability. Later, an evaluation concluded EDG operability was not impacted by the cracking. The licensee then submitted an LER cancellation letter. The inspectors reviewed the issue as a sample in Section 1R15 of inspection report 05000255/2011002 and determined there was a minor violation of TS 5.4, which states, in part, that the procedures of Regulatory Guide 1.33 shall be implemented and maintained. Regulatory Guide 1.33 states, in part, that maintenance schedules should be developed to specify inspections of equipment. Despite industry and site operating experience with turbocharger support cracking, the licensee had only instituted informal engineering inspections of the turbocharger supports. The failure to comply with TS 5.4 constituted a violation of minor significance that is not subject to enforcement action in accordance with the NRC's Enforcement Policy. No additional findings or violations of NRC requirements were identified. This LER is closed.

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

.3 (Discussed) Licensee Event Report 05000255/2010-003-00, Unanalyzed Condition Discovered Due to Non-Compliance with 10 CFR 50 Appendix R:

On October 1, 2010, during a corrective action program extent of condition review, the licensee identified that a postulated Appendix R fire scenario in three fire areas could potentially result in the loss of safety-related 2400 VAC Bus 1C and/or Bus 1D. Because the licensee is transitioning to National Fire Protection Association 805, the non-compliance must meet the criteria established by the NRC Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR Part 50.48(c)) for the NRC to exercise enforcement discretion to not cite the violation in accordance with the NRC's Enforcement Policy. The licensee, as of inspector review, had not completed a risk evaluation to show that this issue is not associated with a finding of high safety significance.

The licensee established compensatory measures which included hourly fire tours in the affected fire areas and a standing order to immediately sound the site fire alarm and call out the fire brigade for a control room alarm that indicates a fire in any of the affected three fire areas. A corrective action was initiated by the licensee to complete a design change to make the configuration of the affected breakers less vulnerable to the hypothesized fire failure. This LER will remain open due to the absence of a risk evaluation for this issue to determine that this issue is not associated with a finding of high safety significance and subsequent NRC review. No additional findings or violations of NRC requirements were identified.

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

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction 2515/183, "Follow Up to the Fukushima Daiichi Nuclear Station Fuel Damage Event"

The inspectors assessed the activities and actions taken by the licensee to assess its readiness to respond to an event similar to the Fukushima Daiichi nuclear plant fuel damage event. This included (1) and assessment of the licensee's capability to mitigate conditions that may result from beyond design basis events, with a particular emphasis on strategies related to the spent fuel pool, as required by NRC Security Order Section B.5.b issued February 25, 2002, as committed to in severe accident management guidelines, and as required by 10 CFR 50.54(hh); (2) an assessment of the licensee's capability to mitigate station blackout conditions, as required by 10 CFR 50.63 and station design bases; (3) an assessment of the licensee's capability to mitigate internal and external flooding events, as required by station design bases; and (4) an assessment of the thoroughness of the walkdowns and inspections of important equipment needed to mitigate fire and flood events, which were performed by the licensee to identify any potential loss of function of this equipment during seismic events possible for the site.

Inspection Report 05000255/2011010 (ML111320363) documented detailed results of this inspection activity. Following issuance of the report, the inspectors conducted detailed follow-up on selected issues. The inspectors evaluated a discrepancy with a missing fitting associated with a mitigating strategy associated with B.5.b. The inspectors concluded that that the missing fitting was of minor significance, because other strategies were available. No findings were identified.

.2 (Closed) NRC Temporary Instruction 2515/184, "Availability and Readiness of Severe Accident Management Guidelines (SAMGs)"

a. On May 27, 2011, the inspectors completed a review of the licensee's severe accident management guidelines (SAMGs), implemented as a voluntary industry initiative in the 1990's, to determine (1) whether the SAMGs were available and updated, (2) whether the licensee had procedures and processes in place to control and update its SAMGs, (3) the nature and extent of the licensee's training of personnel on the use of SAMGs, and (4) licensee personnel's familiarity with SAMG implementation.

The results of this review were provided to the NRC task force chartered by the Executive Director for Operations to conduct a near-term evaluation of the need for agency actions following the Fukushima Daiichi fuel damage event in Japan. Plant-specific results for Palisades Nuclear Plant were provided as an Enclosure to a memorandum to the Chief, Reactor Inspection Branch, Division of Inspection and Regional Support, dated June 1, 2011 (ML111520396).

(1) Unresolved Item : Failure to Update Severe Accident Management Guidelines

Introduction: The inspectors identified that the licensee did not review and update the SAMGs as required by the SAMGs. The licensee had not performed periodic reviews nor had the licensee revised the SAMGs to reflect changes to the facility.

Discussion: During review of the SAMGs, the inspectors noted that although the SAMG writers guide requires the licensee to perform periodic or biennial reviews of the SAMGs, no reviews had taken place since 2005. In addition, the licensee's Engineering Change Process requires the licensee to review SAMG's for impact as part of the design review process. The inspectors noted that the licensee had not removed references to the hydrogen recombiners from the SAMGs. In addition, the inspectors identified that the SAMG's had not been revised to address changes and information developed in response to GSI-191 for sump strainer performance. The licensee wrote CR-PLP-2011-02515 to address the issue. Since the extent of condition regarding SAMG inaccuracies is not known, this issue is considered to be an URI pending an extent of condition review. In addition, during the inspection period, the NRC planned to provide additional guidance to the inspectors to ensure that issues identified during this inspection were handled consistently, and within the process, by each regional office. This guidance became available at the conclusion of the inspection period. As a result, this issue will remain unresolved pending further review by regional management, URI 05000255/2011003-09, Failure to Update SAMGs.

.3 (Closed) Unresolved Item 05000255/2010005-03; Head Corrosion Not Evaluated

In October of 2010, following observation of the CC N-729-1 VE visual examination in accordance with IP 7111108, "Inservice Inspection," the inspectors identified an URI related to the licensee's decision to not record and evaluate areas of corrosion visible on the reactor vessel head. The licensee's decision was based upon interpretation of CC N-729-1 VE visual examination requirements. Specifically, the licensee concluded that no evaluation was required because the head corrosion was not caused by boric acid leakage from J-groove welds and nozzles and documented their position in a paper "Bare Metal Visual Examinations in Accordance with CC N-729-1," dated November 1, 2010. The NRC reviewed this document and the Agency's position on this issue was issued on April 1, 2011, as documented in TIA No. 2011-006 (ADAMs Accession

No. ML111110722). Based upon review of TIA No. 2011-006 and the licensee's corrective actions as discussed in Section 1R08, URI 05000255/2010005-03 is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On July 11, 2011 the inspectors presented the inspection results to Mr. Dave Hamilton 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.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The licensed operator requalification training annual operating test results were discussed with the Operators Training staff, Tim Horan, via telephone on May 9, 2011.
- The results of the Emergency Preparedness program inspection were discussed with Mr. T. Kirwin on April, 14, 2011.
- The results of the inservice inspection with Acting Site Vice-President Mr. T. Kirwin, and other members of the licensee staff on June 2, 2011.
- The results of the Emergency Preparedness program inspection were discussed with Mr. D. Malone on June 22, 2011.
- The results of the radiological environmental monitoring program inspection with the Plant Manager, Mr. D. Hamilton, and other members of your staff, on April 29, 2011, and with the Plant Manager, Mr. D. Hamilton, and other members of your staff, on June 16, 2011.
- On July 25, the addition of an URI regarding SAMG's was discussed with you and other members of your staff.

The inspectors confirmed that none of the potential report input discussed was considered proprietary. Proprietary material received during the inspection was returned to the licensee.

4OA7 Licensee-Identified Violations

There were no licensee-identified violations.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Kirwin, Entergy/Acting Site Vice President
P. Anderson, Entergy/Acting Nuclear Safety Assurance Director
B. Bauer, Entergy/EP
D. Bemis, Engineering Programs
A. Blind, Entergy/Engineering Director
J. Burnett, RETS-REMP Specialist
P. Deeds, Programs Engineer
B. Dotson, Entergy/Licensing Technical Specialist
J. Fontaine, Entergy/EP
D. Hamilton, Entergy/Acting General Manager
T. Horan, Licensed Operator Requalification Exam Lead
D. Malone, Entergy/EP Manager
J. Miksa, Engineering Programs Manager
J. Miller, Chemistry Manager
J. Ridley, Entergy/EP
C. Sherman, Entergy/Radiation Protection Manager
J. Walker, Entergy/QA

Nuclear Regulatory Commission

J. Giessner, Chief, Reactor Projects Branch 4
R. Walton, Senior Operations Engineer
J. Beavers, Senior Operations Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000255/2011003-01	NCV	Failure to Evaluate Reactor Vessel Head Corrosion During Visual Examination, Human Performance, Decision Making (H.1(.b)) (1R08)
05000255/2011003-02	NCV	Failure to Establish a Back-up Radiation Monitor (1R13)
05000255/2011003-03	NCV	Failure to Inspect ASME Class 2 Piping (1R15)
05000255/2011003-04	URI	Turbine-Driven Auxiliary Feedwater Pump Trip (1R15)
05000255/2011003-05	URI	Application of EAL Scheme During Drill (1EP6)
05000255/2011003-06	NCV	Failure to Include The Steam Generator Mausoleum in the Groundwater Protection Risk Ranking Program, Problem Identification & Resolution (P.1(d)) (2RS7)
05000255/2011003-07	URI	Anomalous Environmental Samples (2RS7)
05000255/2011003-08	NCV	Failure to Adequately Manage Changes to the ODCM, Problem Identification & Resolution (P.1(c)) (2RS7)
05000255/2011003-09	URI	Failure to Update SAMGs (4OA5.2)

Closed

05000255/2011003-01	NCV	Failure to Evaluate Reactor Vessel Head Corrosion During Visual Examination, Human Performance, Decision Making (H.1.(b)) (1R08)
05000255/2011003-02	NCV	Failure to Establish a Back-up Radiation Monitor (1R13)
05000255/2011003-03	NCV	Failure to Inspect ASME Class 2 Piping (1R15)
05000255/2011003-06	NCV	Failure to Include The Steam Generator Mausoleum in the Groundwater Protection Risk Ranking Program, Problem Identification & Resolution (P.1(d)) (2RS7)
05000255/2011003-08	NCV	Failure to Adequately Manage Changes to the ODCM Problem Identification & Resolution (P.1(c)) (2RS7)
05000255/2010-002-00	LER	Condition that Could Have Prevented the Fulfillment of a Safety Function (4OA3)
05000255/2010-004-00	LER	Cracks Discovered in Emergency Diesel Generator Turbocharger Support Plates (4OA3)
05000255/2010005-03	URI	Head Corrosion Not Evaluated (4OA5)

Discussed

05000255/2010-003-00	LER	Unanalyzed Condition Discovered Due to Non Compliance with 10 CFR 50 Appendix R: (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

- Admin 4.02, Control of Equipment, Revision 58
- CR-PLP-2010-06592, Received notification reporting a geomagnetic disturbance with a K-index of 5, December 15, 2010
- CR-PLP-2011-00685, Two alarm indications for breaker 31F7 do not illuminate, February 11, 2011
- CR-PLP-2011-00743, Indian Point Energy Center Unit 2 automatically scrammed as a result of main transformer fault, February 15, 2011
- Nuclear Plant Operating Agreement for Palisades Plant, March 29, 2010
- SOP-30, Station Power, Revision 61

1R04 Equipment Alignment

- CR-PLP-2010-00646, MV-FW750, AFW Pump C suction from critical service water hard to operate, February 14, 2010
- CR-PLP-2011-02290, No check valve shown between alternate fire protection supply to P-8A and P-8B and condensate storage tank, May 6, 2011
- DBD 1.03, Auxiliary Feedwater System, Revision 7
- EA-AFW-CA016278, Analysis of Auxiliary Feedwater System Parameters when Cross-Connected to the Fire Protection System using Pipe-Flo
- FPSP-MO-1, Fire Suppression Water System Valve Alignment, Revision 14
- UFSAR Chapter 9, Auxiliary Systems, Revision 27
- SOP-12, Feedwater System, Revision 58
- SOP-21, Fire Protection System, Revision 23
- SOP-22, Emergency Diesel Generators, Revision 49
- SOP-24, Ventilation and Air Conditioning System, Revision 56
- SOP-3, Safety Injection and Shutdown Cooling System, Revision 80

1R05 Fire Protection

- FPSP-SO-2, Inspection and Testing of Palisades Plant Fire Doors, Revision 7
- ONP-25.1, Fire Which Threatens Safety Related Equipment, Revision 20
- Palisades 1-1 EDG Room Pre-Fire Plan
- Palisades Plant Fire Hazards Analysis Report, Revision 7
- Palisades Pre-Fire Plan for Charging Pump Room, Revision 0

1R06 Flooding

- ARP-8, Safeguards Safety Injection and Isolation Scheme EK-13 (EC-13), Revision 70
- Calculation EA-C-PAL-95-1526-01, Internal Flooding Evaluation for Plant Areas Outside Containment, Revision 4
- CR-PLP-2008-00750, Review of NRC Information Notice 2007-01 Recent Operating Experience Concerning Hydrostatic Barriers, February 14, 2008

- DBD 7.08, Plant Protection from Flooding, Revision 6
- EC-5000121910, Replacement of SFP to ESS SDC to SFP SIRW to SDC/ESS and SDC to CCW Header Expansion Joints [flood barriers],
- MSM-M-16, Inspection of Watertight Barriers, Revision 17
- ONP-12, Acts of Nature, Revision 26
- WO 52233622 , Inspection of Watertight Barriers

1R08 Inservice Inspection Activities (71111.08)

- CR PLP-2011-02413, NRR Evaluation of URI, May 13, 2011
- Operability Evaluation No. CR-PLP-2011-02413, May 20, 2011.
- Palisades Nuclear Plant Reactor Vessel Bare Metal Head Examination – Compliance with CC N-729-1, May 3, 2011.
- Position Paper "Bare Metal Visual Examinations in Accordance with CC N-729-1", November 1, 2010.
- TIA- 2011-006; Final Response to Task Interface Agreement 2011-006,

1R11 Licensed Operator Requalification Program

- Simulator Exam Scenario PLSXM-OPS-117

1R12 Maintenance Effectiveness

- CR-PLP-2008-01410 / CR-PLP-2009-02493 Maintenance Rule a(1) Goal Setting Action Plan for Control Room HVAC System, Revision 5
- CR-PLP-2009-03735, Rubber boot above jacket water cooler has two cuts, July 29, 2009
- CR-PLP-2009-03986, Control Room HVAC V-26B Fan Tripped when Starting for Testing after maintenance, August 19, 2009
- CR-PLP-2009-04200, OE related to Palisades regarding speed switch exceeding recommended PM life, September 3, 2009
- CR-PLP-2009-05592, Inadvertent short causes EDG 1-1 control power breakers to open, December 7, 2009
- CR-PLP-2010-00552, 1-1 EDG aftercooler has dirty fins, February 8, 2010
- CR-PLP-2010-00942, VC-11 Tripped due to Low Pressure, March 4, 2010
- CR-PLP-2010-01091, EDG 1-2 KVAR loading hard to maintain, March 17, 2010
- CR-PLP-2010-01222, Fire Protection Program Self Assessment Identified Program Deficiency 3.1, March 23, 2010
- CR-PLP-2010-01670, SV-1698 was Chattering when PS-1808 Reached its set point, April 23, 2010
- CR-PLP-2010-01859, VC-11 CRHVAC Chiller Tripped During Pump Down Power Supply Found Tripped, May 4, 2010
- CR-PLP-2010-04151, 1-3 Supplemental Diesel Generator would not start, September 27, 2010
- CR-PLP-2010-06670, EDG system has exceeded maintenance rule performance criteria, December 21, 2010
- CR-PLP-2011-01081, Feedwater NPO on Rounds Noted the Inservice Control Room HVAC Chiller (VC-10) Tripped, March 5, 2011
- CR-PLP-2011-01676, Air Handling Unit V-96 Discharge Flow Indicator was Alarming Spuriously, April 23, 2010
- CR-PLP-2011-01873, VC-10 CRHVAC Tripped on Low Suction Pressure, April 15, 2011
- CR-PLP-2011-02176, Found a Small Crack on a ¼" Copper Tubing on the Suction Side of VC-10, April 30, 2011

- CR-PLP-2011-02534, VC-10 Failed to Start on Rising Control Room Temperature, May 20, 2011
- CR-PLP-2011-02544, VC-10 Failed to Start due to Fuse Having Bad connection, May 20, 2011
- CR-PLP-2011-02811, Three Fuses found loose During Planned Work Inspection, June 8, 2011
- EGAD-EP-10, Palisades Maintenance Rule Scoping Document, Revision 5
- EN-DC-205, Maintenance Rule Monitoring, Revision 3
- EPRI EDG Governing System Maintenance Guide for Nuclear Applications, Final Report, December 2007
- NRC IN-201-025; Inadequate Electrical Connections; November 17, 2010
- SOP-22, Emergency Diesel Generators, Revision 50

1R13 Maintenance Risk Assessments and Emergent Work Control

- AR-01015197, Operator Work Around: P-8B steam trap can stick open, March 21, 2006
- Armstrong Inverted Bucket Steam Traps, Service Guide
- CR-PLP-2008-02153, ST-0512 and ST-0513 not passing steam or condensate, May 12, 2008
- CR-PLP-2011-02350, P-8B, steam driven auxiliary feedwater pump tripped on overspeed, May 10, 2011
- CR-PLP-2011-02380, ST-0514 and ST-0523 (turbine exhaust steam traps) were not discharging condensate, May 12, 2011
- DBD-1.03, Auxiliary Feedwater System, Revision 7
- WO 52204403, PM Breaker 52-1901 (MCC-25 Feeder Breaker)
- CR-PLP-2011-0826, Review of Gaseous Monitor System, February 18, 2011
- Cr-PLP-2011-1704, RIA-0823 Obstructions, April 6, 2011
- CR-PLP-2011-1712, Errors in DABD-03, April 6, 2011

1R15 Operability Determinations

- Armstrong Bulletin 301-I, Service Guide, Inverted Bucket Steam Traps
- CR-PLP-2003-2506, Reactor Head Staining and Scaling, March 31, 2003
- CR-PLP-2006-03743, Pinhole leak discovered downstream of CV-0824, July 30, 2006
- CR-PLP-2008-02153, ST-512 and ST-513 not passing steam or condensate as expected, May 12, 2008
- CR-PLP-2011-00730, During QO-21, pump speed not within tolerance, February 14, 2011
- CR-PLP-2011-01933, Jacket water leakage at 50mL/min, higher than previously noted, April 18, 2011
- CR-PLP-2011-02738, During VT-2 of T-58, an active flange gasket leak was identified, June 2, 2011
- CR-PLP-2011-03021, Past performances of RT-71M performed with catacomb area beneath SIRW tank considered inaccessible, June 16, 2011
- CR-PLP-2011-03207, Service water leakage from lagging downstream of CV-0824, June 26, 2011
- CR-PLP-2011-2413, Inadequate Bare Metal Visual Examination of reactor Head, May 13, 2011
- DBD 1.03, Auxiliary Feedwater System, Revision 7
- Elliott vendor manual, Instruction Book 100-L, Type YR Turbines
- EM-09-13, Inservice Inspection Pressure Testing Program, Revision 13
- RT-71M, Class 2 System Inservice Test for Safety Injection and Refueling Water Tank, Revision 4

- SOP-12, Feedwater System, Revision 59
- WO 282307, 60dpm leak downstream of CV-0824

1R19 Post-Maintenance Testing

- CR-PLP-2011-02176, Small Crack on VC-10 Tubing, April 30, 2011
- CR-PLP-2011-2350, P-8B Tripped on Overspeed, May 10,2011
- CR-PLP-2011-2364, TDAFW Pump Knife Edge Greased, May 11, 2011
- EC 27705, Replace Control Room HVAC Condensing Unit Pump Down Switches
- EPS-E-1, Replace and Calibrate Diesel Generator EGA Control Box, Revision 22
- Operations Narrative Logs, May 10 2011 thru May 12, 2011
- PS-1700 Calibration Sheet, performed May 17, 2011
- QO-21 Inservice Test Procedure- Auxiliary Feedwater Pumps, May 11, 2011
- WO 266184, Replace PS-1700 per EC 27705 and EC 28028
- WO 270440, G1-1/DRU, Replace Digital Reference Unit
- WO 52282761, RO-128 24 hour load run of diesel generator
- WO-00276751, QO-21B IST Auxiliary feed water System, May 12, 2011
- WO-52289689-01, RO-97B- AFW Automatic Initiation test, May, 11 2011

1R22 Surveillance Testing

- Admin 4.19, PCS Leak Rate Monitoring Program
- CR-PLP-2007-05147, CK-CA481 has leak rate greater than acceptance criteria, October 11, 2007
- CR-PLP-2009-05751, During RI-95A…attempted to perform calibration section and had multiple problems…step 5.7.3 could not be performed as written, December 15, 2009
- DBD 2.01, Low Pressure Safety Injection System, Revision 10
- Drawing M-207, Sh 2, Auxiliary Feedwater System, Revision 37
- DWO-1 Basis, Basis Document for Operators's Daily/Weekly Items Modes 1,2,3,and 4, Revision 56
- DWO-1, Operator's daily/Weekly Items Modes 1,2,3 and 4, Revision 91
- UFSAR Section 1.8, Special Major Programs, Revision 28
- ONP 23.1, PCS Operational Leakage, Revision 25
- PCS Leak Rate Snap Shot, May 17, 2011 at 0734
- PCS Leak Rate Snap Shot, May 18 2011 at 0231 and 0541
- QO-16 Basis Document, Revision 16
- QO-16, Inservice Test Procedure, Containment Spray Pumps, Revision 31
- QO-42 Basis Document, Revision 7
- QO-42, Inservice Testing of Shutdown Cooling Control Valves, Revision 15
- Quench tank T-73 Inleakage ODMI, February 18, 2011
- RI-95A, Auxiliary Feedwater Flow FT-0727 Instrument Loop Calibration, Revision 13
- RI-99, Left Channel Nuclear Instrument Calibrations, Revision 11
- WO 52289689, RO-97B- Auxiliary Feedwater System Automatic Initiation Test, May 11, 2011
- WO 52306528, QO-16C-P-54C, ISI Test Procedure, Containment Spray Pump

1EP2 Alert and Notification System Testing (71114.02)

- 2009-2010 Emergency Preparedness Mailer
- 2010-2011 Emergency Preparedness Mailer
- EI-17, Compensating Measures for OOS EAL Equipment and Listing of Non-EAL Equipment Important for Emergency Preparedness, Revision 1

- FEMA approval of Palisades Nuclear Power Plant's Proposed Replacement of their Primary Warning System, December 20, 2002
- PAL PWS, Palisades Nuclear Plant Public Warning System Operating Procedure, Revision 20
- Records of Silent, Full Cycle, and Growl ANS Testing, January 1 - December 31, 2010
- Selected Documentation of ANS Repair and Annual Preventative Maintenance, October 2009 to March 2011

1EP3 Emergency Response Organization Augmentation (71114.03)

- 03/17/2010 Quarterly Augmentation Test
- 06/15/2009 Backshift Mobilization Drill
- 06/22/2010 Quarterly Augmentation Test
- 09/26/2010 Quarterly Augmentation Test
- 12/13/2010 Quarterly Augmentation Test
- 12/16/2009 Semi-Annual Augmentation Test
- Current Palisades ERO Augmentation Roster, March 22, 2011
- EI-2.1, Emergency Plant Manager, Revision 28
- EI-2.2, Emergency Staff Augmentation, Revision 15
- EI-4.1, Technical Support Center Activation, Revision 21
- EI-4.2, Operations Support Center Activation, Revision 22
- EI-4.3, Emergency Operations Facility Activation, Revision 23
- PL-BEP-SEP, Training Program Description, Revision 9
- SEP, Site Emergency Plan, Revision 20

1EP 4 Emergency Action level and Emergency Plan Changes (71114.04

- 10 CFR 50.54(q) Evaluation Package, EI-1 Emergency Classification and Actions, Revision 51
- 10 CFR 50.54(q) Evaluation Package, EI-1 Emergency Classification and Actions, Revision 52
- 10 CFR 50.54(q) Evaluation Package, EI-2.2 Emergency Staff Augmentation, Revision 15
- 10 CFR 50.54(q) Evaluation Package, EI-4.3 Emergency Operations Facility Operations, Revision 23
- 10 CFR 50.54(q) Evaluation Package, EI-6.0 Offsite Dose Calculations and Recommendations for Protective Actions, Revision 11
- 10 CFR 50.54(q) Evaluation Package, EI-6.0 Offsite Dose Calculations and Recommendations for Protective Actions, Revision 12
- 10 CFR 50.54(q) Evaluation Package, EI-6.3 Protective Action Recommendations for Offsite Populations, Revision 20
- 10 CFR 50.54(q) Evaluation Package, Palisades Nuclear Plant Site Emergency Plan, Revision 19
- 10 CFR 50.54(q) Evaluation Package, Palisades Nuclear Plant Site Emergency Plan, Revision 20

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

- CR-2010-04150, On-call ERO Duty Team Drill Response Issues, September 26, 2010
- CR-2010-06413, On-site Siren and Plant Paging System Issues, December 2, 2010
- CR-2011-01374, ERDS Upgrade Issues, March 21, 2011
- CR-2011-01704, Stack Release Back Up Monitor Assumption Issues, April 6, 2011
- CR-2011-01712, Stack Release Rate Calculation Errors, April 6, 2011
- OS2 Report, Individual Observations, March 2011
- PLPLO-2009-00112, Snapshot Assessment, July 2010
- PLPLO-2010-00094, Snapshot Assessment, March 2011

- Quality Assurance Emergency Planning Audit, April 2010
- Unusual Event Evaluation, January 8, 2011

1EP6 Drill Evaluation

- Palisades 2011 Second Quarter Emergency Planning Drill, June 1, 2011

2RS7 Radiological Environmental Monitoring Program

- 2009 Radiological Environmental Operating Report, Palisades Nuclear Plant, May 14, 2010
- CR-PLP-2010-1013, Further Justification May Be Needed to Demonstrate Drinking Water Sampling Locations, March 10, 2010
- CR-PLP-2010-2166, Unable to Verify Procedures and Standards for Calibration of Flow Meters Used to Determine Volume of Environmental Air Samples, May 27, 2010
- CR-PLP-2010-4145, Cs-137 and Tritium Activity Detected in S/G Interim Storage Facility (Mausoleum), December 16, 2010
- CR-PLP-2011-2143, Steam Generator Mausoleum Should be Reviewed for Inclusion in the System, Structure and Component (SSC) Risk Ranking document, April 28, 2011
- CR-PLP-2011-2149, A Violation of NRC Requirements Concerning a Failure of the ODCM Revision Documentation to Address Nearby Community Wells was not Adequately Addressed and Brought to Closure, April, 29 2011
- CR-PLP-2011-2157, Unable to Verify Procedures and Standards for Calibration of Flow Meters Used to Determine Volume of Environmental Air Samples and it Needs to be Determined if the Vendor is Under a QA Program, April 29, 2011
- CR-PLP-2011-2158, Re-evaluate the Cs-137 Identified in Environmental Broadleaf Samples, April 29, 2011

4OA1 Performance Indicator Verification

- AFW MSPI validation packages, second quarter 2010 thru first qtr 2011
- CR-2011-01796, Participation PI Calculation Error, April 14, 2011
- CR-PLP-2010-04029, MO-3066 exhibiting leakby, September 21, 2010
- CR-PLP-2010-05145, PCV-3030A closing pressure regulator low out of specification, October 16, 2010
- CR-PLP-2010-05246, Leak rate from CV-3056 did not meet acceptance criteria, October 18, 2010
- CR-PLP-2010-05774, MO-3062 found with active boric acid leak during RT-71B, October 28, 2010
- CR-PLP-2011-339M, Turbine Bypass to Condenser Did not Open, January 22, 2011
- DEP Opportunities, January 1 - December 31, 2010
- EI-1, Emergency Classification and Actions, Revision 52
- EI-3, Communications and Notifications, Revision 30
- EN-EP-201; Performance Indicators, Revision 12
- EN-LI-114, Performance Indicator Process, Revision 4
- ERO Personnel Participation, March 31 - December 31, 2010
- LER-2011-002, Automatic Reator trip and Auxliary Feedwater System Actuation, March 23, 2011
- Palisades MSPI Basis Document, June 26, 2008
- Palisades Nuclear Plant MSPI Basis Document, June 26, 2008
- Selected Operator logs, April 2010 thru March 2011
- Siren System Availability Test Records, January 1 - December 31, 2010

4OA2 Problem Identification and Resolution of Problems

- 1St Quarter 2011 Operations Department Quarterly Trend Report
- 4th Quarter 2010 Operations Department Quarterly Trend Report
- CR-PLP-2011-1522, Potential Cross-Cutting Violation in Human Performance- Design Procedures and Labeling (H2(c)), March 28, 2011
- Nuclear Oversite Fleet Trimester Report, November 2010 thru February 2011, March 29, 2011
- October 2010 thru April 2011 Operations Department Monthly Performance Reports
- Ops Trend Reports, October 2010 thru March 2011
- QS-2011-PLP-003, QA Surveillance on lack of Traceability on Safety Related Solder, January 7, 2011
- QS-2011-PLP-003, Quality Assurance Follow-Up on Traceability of Safety Related Solder, January 7, 2011
- QS-2011-PLP-004, QA Surveillance of recurring Equipment Performance Problems, January 11, 2011
- QS-2011-PLP-004, Quality Assurance Follow-up Surveiallance Recurring Equipment Problems, January 10-11 2011
- RCE CR-PLP-2011-1264, Root Cause Evaluation Report, Equipment Reliability Organizational Effectiveness, Revision 0
- RCE CR-PLP-2011-1522, Root Cause Evaluation Report Violation in Human Performance-Design Procedures and Labeling, (H2(c)), Revision 1

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

- CR-PLP-2010-01222, Fire Protection Program Self Assessment Identified Program Deficiency 3.1, March 23, 2010
- Drawing E-3, Single Line Meter and Relay Diagram – 2400 Volt System, Revision 49
- Drawing E-8, Single Line and Meter Diagram – 125 VDC and 120 V Instrument and Preferred AC System, Revision 54
- LER 2010-003-00, Unanalyzed Condition Discovered due to Non-Compliance with 10 CFR 50, Appendix R, November 22, 2010
- Palisades LER 2010-002-00, Condition that Could Have Prevented the Fulfillment of a Safety Function, October 18, 2010
- Palisades LER 2010-004-00, Cracks Discovered in Emergency Diesel Generator Turbocharger Support Plates, January 7, 2011
- Palisades letter to NRC, Cancellation of LER 2010-004, Dated February 18, 2011

4OA5 Other Activities

- CR-PLP-1280, Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami, March 16, 2011
- EN-DC-105, Configuration Management, Revision 3
- EN-DC-115, Engineering Change Process, Revision 11

- Phase 1 Initial Diagnosis, Revision 2
- Phase 2, Verification of Diagnosis, Revision 1
- Phase 3 EX_I, EX_CH and EX_CC CHLAs, Revision 1
- Phase 3, BD/CH, BD_I, BD_CC CHLAs, Revision 1X
- Restorative Accident Management Guidelines, Revision 1
- User Curriculum Status group for SAMG and EMG sub-curriculum, printed April 26, 2011
- VA-SAMG-1, SAMG Evaluator and Decision Maker Initial training
- Writers/Users Guide for Severe Accident Management Guidelines, Revision 1

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
ANS	Alert and Notification System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CC	Code Case
CFR	Code of Federal Regulations
EAL	Emergency Action level
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
ERO	Emergency Response Organization
IMC	Inspection Manual Chapter
IP	Inspection Procedure
LER	Licensee Event Report
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicator
SAMGs	Severe Accident Management Guidelines
SDP	Significance Determination Process
SIRW	Safety Injection and Refueling Water
TDAFW	Turbine-Driven Auxiliary Feedwater
TIA	Task Interface Agreement
TS	Technical Specification
TSO	Transmission System Operator
UE	Unusual Event
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item

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Sincerely,

/RA/

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

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SUBJECT: PALISADES NUCLEAR PLANT INTEGRATED INSPECTION REPORT 05000255/2011003

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