



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

October 30, 2015

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  
NRC INTEGRATED INSPECTION REPORT 05000255/2015003

Dear Mr. Vitale:

On September 30, 2015, 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 October 29, 2015, with you and other members of your staff.

Based on the results of this inspection, two NRC-identified findings 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 violations 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 any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission-Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Palisades Nuclear Plant. In 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.

A. Vitale

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In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records System (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Eric Duncan, Chief  
Branch 3  
Division of Reactor Projects

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

Enclosure:  
IR 05000255/2015003  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-255

License No: DPR-20

Report No: 05000255/2015003

Licensee: Entergy Nuclear Operations, Inc.

Facility: Palisades Nuclear Plant

Location: Covert, MI

Dates: July 1 through September 30, 2015

Inspectors: A. Nguyen, Senior Resident Inspector  
J. Boettcher, Resident Inspector  
B. Boston, Acting Resident Inspector  
J. Cassidy, Senior Health Physicist  
R. Elliott, Reactor Engineer  
M. Holmberg, Reactor Inspector  
J. Lennartz, Project Engineer  
V. Myers, Senior Health Physicist  
T. Taylor, Resident Inspector, D.C. Cook

Approved by: E. Duncan, Chief  
Branch 3  
Division of Reactor Projects

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000255/2015003, 07/01/2015–09/30/2015; Palisades Nuclear Plant; Operability Determinations and Functional Assessments; and Radioactive Gaseous and Liquid Effluent Treatment.

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. These findings were considered non-cited violations (NCVs) of U.S. Nuclear Regulatory Commission (NRC) regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5, dated February 2014.

### Cornerstone: Mitigating Systems

Green. An NRC-identified finding of very low safety significance and an associated NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," was identified for the failure to justify continued service of safety-related electrolytic capacitors that were installed beyond their recommended service life associated with the safety-related containment floor level indicating transmitters (LITs). Specifically, on June 21, 2015, containment floor LIT LIT-0446B and LIT-0446A did not satisfy the acceptance criteria of the technical specification surveillance monthly channel checks and LIT-0446B was declared inoperable. Further troubleshooting identified a failure of the electrolytic capacitor within the transmitter's converter module and that this failure was most likely due to age since the transmitter had been in service for greater than its recommended service life. In addition to entering this issue into their Corrective Action Program (CAP) as CR-PLP-2015-04972, the licensee replaced the failed components and planned to develop a replacement schedule for non-critical, safety-related electrolytic capacitors.

The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The finding screened as having very low safety significance based on answering "No" to all of the screening questions in the Mitigating Structures, Systems, and Components (SSCs) and Functionality section of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 1, "Mitigating Systems Screening Questions." The finding had a cross-cutting aspect of Operating Experience in the Problem Identification and Resolution cross-cutting area because the licensee did not effectively and thoroughly evaluate and implement relevant industry operating experience and guidance for age-related electrolytic capacitor degradation [P.5]. (Section 1R15)

## **Cornerstones: Occupational Radiation Safety and Public Radiation Safety**

Green. A finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.5.1, "Offsite Dose Calculation Manual," was identified for the failure to establish, implement, and maintain the Offsite Dose Calculation Manual (ODCM) relative to dose calculation parameters. Specifically, the licensee failed to modify the parameters used in public radiation calculations when changes in the use of unrestricted areas were identified. As a result, the quarterly and annual doses that were calculated every 31 days, as required by the ODCM, were incorrect and non-conservative. In addition to entering this issue into their CAP as CR-PLP-2015-2972, the licensee recalculated the dose using the correct calculation parameters.

The performance deficiency was determined to be more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring the 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. The finding was determined to be of very low safety significance in accordance with IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," because the issue did not represent a significant deficiency in evaluating a planned or unplanned effluent release since the resulting dose was not grossly underestimated. The finding had a cross-cutting aspect of Training in the Human Performance cross-cutting area because the licensee did not ensure adequate knowledge transfer to maintain a knowledgeable, technically competent workforce. [H.9] (Section 2RS6)

## **REPORT DETAILS**

### **Summary of Plant Status**

The plant operated at or near full power during the inspection period until August 24, 2015, when the operators entered a coastdown period in preparation for refueling outage (RFO) 1R24. On September 16, 2015, the unit automatically tripped in response to an electrical failure in the digital electrohydraulic control system. The unit remained shutdown and transitioned into the RFO for the remainder of the inspection period.

## **1. REACTOR SAFETY**

### **Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity**

#### **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:

- Left train auxiliary feedwater system during surveillance of right train auxiliary feedwater system;
- 1-2 diesel generator during surveillance of the 1-1 diesel generator;
- 'A' train shutdown cooling system during RFO 1R24; and
- Air system alignment to containment during RFO 1R24.

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, the Updated Final Safety Analysis Report (UFSAR), Technical Specification (TS) requirements, outstanding work orders (WOs), condition reports (CRs), and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the Corrective Action Program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted four partial system walkdown samples as defined in Inspection Procedure (IP) 71111.04–05.

b. Findings

No findings were identified.

.2 Semiannual Complete System Walkdown

a. Inspection Scope

Between July 21 and August 12, 2015, the inspectors performed a complete system alignment inspection of the service water system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications; 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)

a. Inspection Scope

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

- Fire Area 16: component cooling water (CCW) pump room;
- Fire Area 9: screenhouse;
- Fire Area 10: east engineered safeguards room;
- Risk-significant fire areas during the higher risk plant operating state #1 of RFO 1R24;
- Fire Areas 29, 30, and 31: electrical and mechanical equipment rooms; and
- Fire Area 6: diesel generator 1-2 and fuel oil day tank room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and 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 to this report, 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.

These activities constituted six quarterly fire protection inspection samples as defined in IP 71111.05–05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

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 inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP 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:

- cable spreading room.

Documents reviewed during this inspection are listed in the Attachment to this report. This inspection constituted one internal flooding sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

.2 Underground Vaults

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors determined whether the cables were submerged, whether splices were intact, and whether appropriate cable support structures were in place. In those areas where

dewatering devices were used, such as a sump pump, the inspectors determined whether the device was operable and level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submerged conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- Manhole #4 and Manhole #8.

Documents reviewed are listed in the Attachment to this report. This inspection constituted one underground vaults sample as defined in IP 71111.06–05.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review of Licensed Operator Regualification (71111.11Q)

a. Inspection Scope

On August 5, 2015, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that 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;
- the 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
- the ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

Crew 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 regualification program simulator sample as defined in IP 71111.11–05.

b. Findings

No findings were identified.

.2 Resident Inspector Quarterly Observation During Periods of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On September 16, 2015, the inspectors observed a reactor cooldown to Mode 5 following a reactor trip. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- the 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 procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- the ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

Performance in these areas was compared to pre-established operator action expectations, procedural compliance, and task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator heightened activity/risk sample as defined in IP 71111.11–05.

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 system:

- containment personnel inner air lock door.

The inspectors reviewed events including those in which ineffective equipment maintenance 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 Title 10 of the *Code of Federal Regulations* (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 one quarterly maintenance effectiveness sample 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 appropriate risk assessments were performed prior to removing equipment for work:

- breaker 72-13, 'A' primary coolant pump (PCP) direct current oil lift pump, removal;
- purification demineralizer filter replacement;
- diving in the spent fuel pool tilt pit;
- reduced inventory period #1 during RFO; and
- emergent work to uncouple control rod drive 11.

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.

Documents reviewed are listed in the Attachment to this report. These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 71111.13-05.

b. Findings

No findings were identified.

## 1R15 Operability Determinations and Functional Assessments (71111.15)

### a. Inspection Scope

The inspectors reviewed the following issues:

- primary cooling system (PCS) branch connection weld inspection calculation errors;
- fuel oil transfer system operability;
- 'A' PCP decreasing lower bearing oil level trend; and
- containment level indicating transmitter (LIT) capacitor failure.

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 sample 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 three samples as defined in IP 71111.15–05. The sample for the weld inspection calculation error was accounted for in Inspection Report (IR) 05000255/2015012.

### b. Findings

Introduction. An NRC-identified finding of very low safety significance (Green) and an associated Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified for the failure to justify continued service of safety-related electrolytic capacitors installed beyond their recommended service life associated with containment floor LITs LIT–0446B and LIT–0446A.

Description. During the performance of monthly operations TS surveillance test MO–45, "Control Room Channel Checks," on June 21, 2015, LIT–0446B, the 'B' containment LIT, was found to be indicating below the acceptance criteria minimum required value. The transmitter was declared inoperable in accordance with TS 3.3.7, "Post Accident Monitoring," since the accuracy over the entire level span of the instrument was considered degraded such that it could no longer perform its function to accurately monitor containment water level as specified by Regulatory Guide 1.97. These containment LITs are relied upon in the plant's emergency operating procedures to ensure adequate net positive suction head for emergency core cooling system (ECCS) pumps following receipt of a recirculation actuation signal (RAS).

On July 16, 2015, further troubleshooting was conducted and determined that the electrolytic capacitor within the transmitter's converter module failed and the most likely cause of the capacitor failure was operation beyond the component's service life since the LITs had been in service for greater than 10 years. Entergy subsequently submitted letter PNP 2015-058 to the NRC on August 3, 2015, reporting this information as required by TS 5.6.6. This specification states that if post-accident monitoring instrumentation is inoperable, a preplanned alternate method of monitoring, the cause of the inoperability, and the schedule for restoring the inoperable instrument to an operable status shall be submitted in a report to the NRC.

The resident inspectors asked follow-up questions associated with industry operating experience and the preventive maintenance program for these transmitters. These LITs were replaced on an "as-required" basis (no preventive maintenance frequency) and were classified as non-critical components in the licensee's maintenance program. However, industry operating experience and Electric Power Research Institute guidance was found by the inspectors that indicated electrolytic capacitors have a specified lifespan based on operating conditions and applications. The NRC issued Information Notice (IN) 2012-11, "Age-Related Capacitor Degradation," in July 2012, which also informed licensees of problems that involved the age-related degradation of capacitors. The licensee documented a review of this IN in CR-PLP-2012-5721. However, the licensee's preventive maintenance interval review of this operating experience only considered electrolytic capacitors that were classified as critical components in their maintenance rule program. The capacitors which were identified during this review were scheduled for, at most, 10 year replacement intervals. The licensee potentially missed the opportunity to establish a replacement program for these transmitters at that time. In addition to entering this issue into their CAP as CR-PLP-2015-04972, the licensee replaced the failed components and planned to develop a replacement schedule for non-critical, safety-related electrolytic capacitors.

Analysis. The inspectors determined that the failure to review for suitability of application of the safety-related electrolytic capacitors in the containment floor LITs, which were installed beyond their recommended service life, was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency.

The inspectors determined that the performance deficiency was more than minor in accordance with Inspection Manual Chapter (IMC) 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012, because the performance deficiency was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The containment water LITs are relied upon in the plant's emergency operating procedures to ensure adequate net positive suction head for ECCS pumps following a RAS. The finding was screened in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 1, "Mitigating Systems Screening Questions," dated July 1, 2012. The finding screened as having very low safety significance (i.e., Green) based on answering "No" to all the screening questions under the Mitigating SSCs and Functionality section of IMC 0609, Appendix A, Exhibit 1.

The finding had a cross-cutting aspect of Operating Experience in the Problem Identification and Resolution cross-cutting area since the licensee did not effectively and thoroughly evaluate and implement relevant industry operating experience and guidance for age-related electrolytic capacitor degradation [P.5].

Enforcement. 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of SSCs.

Contrary to the above, as of June 21, 2015, the licensee failed to review for suitability of application of parts essential to the safety-related functions of the containment floor level indicating system. Specifically, the licensee did not review for suitability of application of safety-related electrolytic capacitors in the containment floor LITs that were installed beyond their recommended service life to justify their continued service considering in-service deterioration. As part of their immediate corrective actions, the licensee replaced the failed components. Because this violation was of very low safety significance and it was entered into the licensee's CAP as CR-PLP-2015-04972, it is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000255/2015003-01 Failure to Justify Continued Service of Safety-Related Electrolytic Capacitors Installed Beyond Their Service Life)**

## .2 Review of Operator Workarounds

### a. Inspection Scope

Operator workarounds are operator actions taken to compensate for degraded or non-conforming conditions. Operator workarounds that cannot be implemented effectively can contribute to an increase in overall plant risk. The inspectors verified that the licensee was identifying operator workarounds at an appropriate threshold, entering them into their CAP, and had planned or taken appropriate corrective actions. As part of their review, the inspectors considered all existing plant conditions and the cumulative impact of all operator workarounds.

The inspectors evaluated the licensee's operator workarounds to determine if any mitigating system functions were adversely impacted. Additionally, the inspectors assessed whether or not the operator workarounds had adversely impacted the operator's ability to implement abnormal or emergency operating procedures. The inspectors placed particular emphasis on any operator workarounds that had not been effectively evaluated by the licensee; that had been formalized or proceduralized as the long-term corrective actions for a degraded or nonconforming condition; and that may have increased the potential for human error, such as operator workarounds that:

- Required operations that were not consistent with current training and system knowledge;
- Required a change from long-standing operational practices;
- Required operation of a system or component in a manner that was inconsistent with similar systems or components;
- Created the potential for the compensatory action to be performed on equipment or under conditions for which it was not appropriate;

- Impaired access to required indications, increased dependence on oral communications, or impacted the timeliness of time-critical event mitigating actions under adverse environmental conditions;
- Required the use of equipment and interfaces that had not been designed with consideration of the task being performed;
- Required the licensee to assess and manage an increase in risk; or
- Required a license amendment in accordance with 10 CFR 50.59, but were implemented without an approved amendment.

Documents reviewed are listed in the Attachment to this report. These activities by the inspectors constituted a single operator workarounds review inspection sample as required by IP 71111.15, Section 02.01(a).

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- CVCO-4, pump testing, following 'C' charging pump bladder replacement;
- MI-43, instrument calibration, following replacement of the reactor vessel level indicating system power supply;
- valve testing following repairs to the charging system surge tank vent valve; and
- diagnostic and stroke testing of service water control valves replaced on the CCW heat exchanger during RFO 1R24.

These activities were selected based upon the SSCs 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 four post-maintenance testing samples as defined in IP 71111.19-05.



b. Findings

No findings were identified.

1R20 Outage Activities (71111.20)

.1 Refueling Outage Activities

a. Inspection Scope

The inspectors evaluated outage activities for RFO 24 (RFO 1R24) that began on September 16, 2015, and continued through the end of the assessment period. The RFO began when the reactor tripped following a turbine trip due to a digital electrohydraulic control system failure on September 16, 2015. The licensee continued the plant shutdown to cold shutdown conditions to begin the RFO.

The inspectors reviewed the Outage Risk Assessment (ORAT) and contingency plans for 1R24, prior to the shutdown, to confirm that the licensee had appropriately considered risk, industry operating experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the RFO, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the RFO activities listed below:

- licensee configuration management, including maintenance of defense-in-depth commensurate with the ORAT for key safety functions and compliance with the applicable TSs when taking equipment out of service;
- implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing;
- installation and configuration of primary coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error;
- controls over the status and configuration of electrical systems to ensure that TS and ORAT requirements were met, and controls over switchyard activities;
- monitoring of decay heat removal processes, systems, and components;
- controls to ensure that RFO work was not impacting the ability of the operators to operate the spent fuel pool cooling system;
- reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss;
- controls over activities that could affect reactivity;
- maintenance of secondary containment as required by TSs;
- licensee fatigue management, as required by 10 CFR 26, Subpart I; and
- licensee identification and resolution of problems related to RFO activities.

Documents reviewed are listed in the Attachment to this report. Since the RFO extended into the fourth quarter of 2015, these activities do not count as an inspection sample this quarter, but will be counted next quarter.

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 instrumentation calibration (routine);
- EA-12, protective relay functional testing (routine);
- local leak rate test of containment personnel air lock (routine);
- PCS leak rate calculation (PCS leak detection);
- QO-16C, containment spray pump inservice surveillance testing (inservice test);
- RT-202, control room heating, ventilation, and air conditioning heat removal capability testing (routine);
- RT-8D, right train engineered safeguards system integrated test (routine);
- RO-105, safety injection tank full flow inservice test (routine); and
- RO-141, containment sump check valve inservice test (containment isolation valve).

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, sufficient to demonstrate operational readiness, and consistent with the system design basis;
- was plant equipment calibration correct, accurate, and properly documented;
- were as-left setpoints within required ranges; and was the calibration frequency in accordance with TSs, the UFSAR, plant procedures, and applicable commitments;
- was measuring and test equipment calibration current;
- was the test equipment used within the required range and accuracy and were applicable prerequisites described in the test procedures satisfied;
- did test frequencies meet TS requirements to demonstrate operability and reliability;
- were tests performed in accordance with the test procedures and other applicable procedures;
- were jumpers and lifted leads controlled and restored where used;
- were test data and results accurate, complete, within limits, and valid;
- was test equipment removed following testing;
- where applicable for inservice testing activities, was testing performed in accordance with the applicable version of Section XI of the American Society of Mechanical Engineers Code, and were reference values consistent with the system design basis;
- was the unavailability of the tested equipment appropriately considered in the performance indicator (PI) data;

- where applicable, were test results not meeting acceptance criteria addressed with an adequate operability evaluation, or was the system or component declared inoperable;
- where applicable for safety-related instrument control surveillance tests, was the reference setting data accurately incorporated into the test procedure;
- was equipment returned to a position or status required to support the performance of its safety function following testing;
- were all problems identified during the testing appropriately documented and dispositioned in the licensee's CAP;
- where applicable, were annunciators and other alarms demonstrated to be functional and were annunciator and alarm setpoints consistent with design documents; and
- where applicable, were alarm response procedure entry points and actions consistent with the plant design and licensing documents.

Documents reviewed are listed in the Attachment to this report. This inspection constituted six routine surveillance testing samples, one in-service test sample, one reactor coolant system leak detection inspection sample, and one containment isolation valve sample as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on August 26, 2015, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the emergency operations facility, technical support center, and the control room simulator 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 CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06–06.

b. Findings

No findings were identified.

## 2. RADIATION SAFETY

### 2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

This inspection constituted one complete sample as defined in IP 71124.06–05.

#### .1 Inspection Planning and Program Reviews (02.01)

##### Event Report and Effluent Report Reviews

##### a. Inspection Scope

The inspectors reviewed the Radiological Effluent Release Reports issued since the last inspection to determine if the reports were submitted as required by the Offsite Dose Calculation Manual (ODCM)/TSSs. The inspectors reviewed anomalous results, unexpected trends, or abnormal releases identified by the licensee for further inspection to determine if they were evaluated, were entered in the CAP, and were adequately resolved.

The inspectors selected radioactive effluent monitor operability issues reported by the licensee as provided in effluent release reports, to review these issues during the onsite inspection, as warranted, given their relative significance, and determine if the issues were entered into the CAP and adequately resolved.

##### b. Findings

No findings were identified.

##### Offsite Dose Calculation Manual and Final Safety Analysis Report Review

##### a. Inspection Scope

The inspectors reviewed UFSAR descriptions of the radioactive effluent monitoring systems, treatment systems, and effluent flow paths so they could be evaluated during inspection walkdowns.

The inspectors reviewed changes to the ODCM made by the licensee since the last inspection against the guidance in NUREG–1301, 1302, and 0133, and Regulatory Guides 1.109, 1.21, and 4.1. When differences were identified, the inspectors reviewed the technical basis or evaluations of the change during the onsite inspection to determine whether they were technically justified and maintain effluent releases as-low-as-reasonably-achievable.

The inspectors reviewed licensee documentation to determine if the licensee has identified any non-radioactive systems that have become contaminated as disclosed either through an event report or the ODCM since the last inspection. This review provided an intelligent sample list for the onsite inspection of any 10 CFR 50.59 evaluations, and allowed a determination if any newly contaminated systems have an unmonitored effluent discharge path to the environment, whether any required ODCM revisions were made to incorporate these new pathways, and whether the associated effluents were reported in accordance with Regulatory Guide 1.21.

b. Findings

No findings were identified.

Groundwater Protection Initiative Program

a. Inspection Scope

The inspectors reviewed reported groundwater monitoring results and changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater.

b. Findings

No findings were identified.

Procedures, Special Reports, and Other Documents

a. Inspection Scope

The inspectors reviewed Licensee Event Reports, event reports, and/or special reports related to the Effluent Program issued since the previous inspection to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports.

The inspectors reviewed the Effluent Program implementing procedures, particularly those associated with effluent sampling, effluent monitor set-point determinations, and dose calculations.

The inspectors reviewed copies of licensee and third party (independent) evaluation reports of the Effluent Monitoring Program since the last inspection to gather insights into the licensee's program, and aid in selecting areas for inspection review (smart sampling).

b. Findings

No findings were identified.

.2 Walkdowns and Observations (02.02)

a. Inspection Scope

The inspectors walked down selected components of the gaseous and liquid discharge systems to evaluate whether equipment configuration and flow paths align with the documents reviewed in 02.01 above, and to assess equipment material condition. Special attention was made to identify potential unmonitored release points (such as open roof vents in boiling water reactor turbine decks, temporary structures butted against turbine, auxiliary or containment buildings), building alterations which could impact airborne, or liquid effluent controls, and ventilation system leakage that communicates directly with the environment.

For equipment or areas associated with the systems selected for review that were not readily accessible due to radiological conditions, the inspectors reviewed the licensee's material condition surveillance records, as applicable.

The inspectors walked down filtered ventilation systems to assess for conditions such as degraded high-efficiency particulate air/charcoal banks, improper alignment, or system installation issues that would impact the performance or the effluent monitoring capability of the effluent system.

As available, the inspectors observed selected portions of the routine processing and discharge of radioactive gaseous effluent (including sample collection and analysis) to evaluate whether appropriate treatment equipment was used, and the processing activities align with discharge permits.

The inspectors determined if the licensee had made significant changes to their effluent release points (e.g., changes subject to a 10 CFR 50.59 review, or require NRC approval of alternate discharge points).

As available, the inspectors observed selected portions of the routine processing and discharging of liquid waste (including sample collection and analysis) to determine if appropriate effluent treatment equipment was being used, and that radioactive liquid waste was being processed and discharged in accordance with procedure requirements and aligned with discharge permits.

b. Findings

No findings were identified.

.3 Sampling and Analyses (02.03)

a. Inspection Scope

The inspectors selected effluent sampling activities, consistent with smart sampling, and assessed whether adequate controls have been implemented to ensure representative samples were obtained (e.g., provisions for sample line flushing, vessel recirculation, composite samplers, etc.).

The inspectors selected effluent discharges made with inoperable (declared out-of-service) effluent radiation monitors to assess whether controls were in place to ensure compensatory sampling was performed consistent with the radiological effluent TSs/ODCM, and that those controls were adequate to prevent the release of unmonitored liquid and gaseous effluents.

The inspectors determined whether the facility was routinely relying on the use of compensatory sampling in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspectors reviewed the results of the Inter-Laboratory Comparison Program to evaluate the quality of the radioactive effluent sample analyses, and assessed whether the Inter-Laboratory Comparison Program included hard-to-detect isotopes as appropriate.

b. Findings

No findings were identified.

.4 Instrumentation and Equipment (02.04)

Effluent Flow Measuring Instruments

a. Inspection Scope

The inspectors reviewed the methodology the licensee used to determine the effluent stack and vent flow rates to determine if the flow rates were consistent with radiological effluent TSs/ODCM or UFSAR values, and that differences between assumed and actual stack, and vent flow rates did not affect the results of the projected public doses.

b. Findings

No findings were identified.

Air Cleaning Systems

a. Inspection Scope

The inspectors assessed whether surveillance test results since the previous inspection for TS required ventilation effluent discharge systems (high-efficiency particulate air and charcoal filtration), such as the Standby Gas Treatment System, and the Containment/ Auxiliary Building Ventilation System, met TS acceptance criteria.

b. Findings

No findings were identified.

.5 Dose Calculations (02.05)

a. Inspection Scope

The inspectors reviewed all significant changes in reported dose values compared to the previous Radiological Effluent Release Report (e.g., a factor of five, or increases that approach Appendix I criteria) to evaluate the factors, which may have resulted in the change.

The inspectors reviewed radioactive liquid and gaseous waste discharge permits to assess whether the projected doses to members of the public were accurate and based on representative samples of the discharge path.

The inspectors evaluated the methods used to determine the isotopes that are included in the source term to ensure all applicable radionuclides are included within detectability standards. The review included the current Part 61 analyses to ensure hard-to-detect radionuclides are included in the source term.

The inspectors reviewed changes in the licensee's offsite dose calculations since the last inspection to evaluate whether changes were consistent with the ODCM and, Regulatory Guide 1.109. Inspectors reviewed meteorological dispersion and deposition

factors used in the ODCM and effluent dose calculations to evaluate whether appropriate factors were being used for public dose calculations.

The inspectors reviewed the latest Land Use Census to assess whether changes (e.g., significant increases or decreases to population in the plant environs, changes in critical exposure pathways, the location of nearest member of the public, or critical receptor, etc.) have been factored into the dose calculations.

For the releases reviewed above, the inspectors evaluated whether the calculated doses (monthly, quarterly, and annual dose) were within the 10 CFR Part 50, Appendix I, and TS dose criteria.

The inspectors reviewed, as available, records of any abnormal gaseous or liquid tank discharges (e.g., discharges resulting from misaligned valves, valve leak-by, etc.) to ensure the abnormal discharge was monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages were reviewed to ensure that an evaluation was made of the discharge to satisfy 10 CFR 20.1501 so as to account for the source term and projected doses to the public.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance (Green) and an associated NCV of TS 5.5.1, "Offsite Dose Calculation Manual," for the failure to establish, implement, and maintain the ODCM relative to dose calculation parameters. Specifically, the licensee failed to modify the parameters used in public radiation calculations when changes in the use of unrestricted areas were identified.

Description: The NRC requires that the licensee identify changes in the use of unrestricted areas to permit modifications in monitoring programs for evaluating doses to individuals from principal pathways of exposure. This was described as the "Land Use Census," in the ODCM.

The licensee completed the land use census in September/October 2014 using licensee procedure CH 6.41 "Land Use Census." The procedure also directed that any changes to critical receptors or X/Q values that modify offsite dose calculations due to the land use census be effective January 1 of the year following the land use census. Although this was normal and expected, the new and sometimes more restrictive values were not transferred to the offsite dose calculation software, "GASPAR." As a result, the quarterly and annual doses that were calculated every 31 days, as required by the ODCM, were incorrect and non-conservative.

Discussions with the licensee revealed that the Radiological Effluent Technical Specification (RETS) Radiological Environmental Monitoring Program (REMP) Specialist assumed the duties and responsibilities of this position in November 2014; months after the previous RETS-REMP Specialist had left the organization. The new individual was aware that the land use census had been completed, but did not realize the results were not incorporated into the program for evaluating doses to individuals from principal pathways of exposure. As part of their immediate corrective actions, the licensee entered this issue into their CAP as CR-2015-2972 and recalculated the dose using the correct calculation parameters.



Analysis: The inspectors determined that the failure to establish, implement, and maintain the dose calculation parameters of the ODCM was not in accordance with TS 5.5.1, and was a performance deficiency.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Program and Process attribute of the Public Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring the 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. Specifically, the non-conservative calculation of dose to members of the public impeded the ability to provide 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 operations. The finding was assessed using IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process," and was determined to be of very low safety significance (Green) because the issue did not represent a significant deficiency in evaluating a planned or unplanned effluent release since the resulting dose was not grossly underestimated.

As described above, the cause for this failure was attributed to the lack of turnover to the new program owner from the previous program owner. As a result, the finding had a cross-cutting aspect of Training in the Human Performance cross-cutting area because the licensee did not ensure adequate knowledge transfer to maintain a knowledgeable, technically competent workforce. (H.9).

Enforcement: TS 5.5.1, "Offsite Dose Calculation Manual," requires the licensee to establish, implement, and maintain the ODCM. ODCM, Section I.B, required dose rates to be calculated for: (1) noble gases and (2) iodines and particulates. Dose rates as defined in this section are based on 10 CFR 50, Appendix I, limits of millirem per quarter and millirem per year. All dose pathways of major importance in the Palisades Nuclear Plant environs are considered, and are to be evaluated at the offsite exposure points where maximum concentrations are expected to exist (overland sector site boundaries) and nearest residents.

Contrary to the above, between January 1 and July 16, 2015, the licensee failed to calculate the dose rates from noble gases, iodines, and particulates to the nearest resident. As part of their immediate corrective actions, the licensee recalculated the dose using the correct calculation parameters. Because this violation was of very low safety significance and was entered into the licensee's CAP as CR-2015-2972, this violation is being treated as an NCV, consistent with Section 2.3.2.a of the NRC Enforcement Policy. **(NCV 05000255/2015003-02, Failure to Establish, Implement, and Maintain the ODCM Relative to Dose Calculation Parameters)**

.6 Groundwater Protection Initiative Implementation (02.06)

a. Inspection Scope

The inspectors reviewed monitoring results of the Groundwater Protection Initiative to determine if the licensee had implemented its program as intended, and to identify any anomalous results. For anomalous results or missed samples, the inspectors assessed whether the licensee had identified and addressed deficiencies through its CAP.

The inspectors reviewed identified leakage or spill events and entries made into 10 CFR 50.75(g) records. The inspectors reviewed evaluations of leaks or spills and reviewed any remediation actions taken for effectiveness. The inspectors reviewed onsite contamination events involving contamination of ground water and assessed whether the source of the leak or spill was identified and mitigated.

For unmonitored spills, leaks, or unexpected liquid or gaseous discharges, the inspectors assessed whether an evaluation was performed to determine the type and amount of radioactive material that was discharged by:

- assessing whether sufficient radiological surveys were performed to evaluate the extent of the contamination and the radiological source term and assessing whether a survey/evaluation had been performed to include consideration of hard-to-detect radionuclides; and
- determining whether the licensee completed offsite notifications, as provided in its Groundwater Protection Initiative implementing procedures.

The inspectors reviewed the evaluation of discharges from onsite surface water bodies that contained or potentially contained radioactivity, and the potential for groundwater leakage from these onsite surface water bodies. The inspectors assessed whether the licensee was properly accounting for discharges from these surface water bodies as part of their Effluent Release Reports.

The inspectors assessed whether onsite groundwater sample results and a description of any significant onsite leaks/spills into groundwater for each calendar year were documented in the Annual Radiological Environmental Operating Report for the REMP, or the Annual Radiological Effluent Release Report for the RETS.

For significant, new effluent discharge points (such as significant or continuing leakage to groundwater that continues to impact the environment if not remediated), the inspectors evaluated whether the ODCM was updated to include the new release point.

b. Findings

No findings were identified.

.7 Problem Identification and Resolution (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with the Effluent Monitoring and Control Program were being identified by the licensee at an appropriate threshold, and

were properly addressed for resolution in the licensee CAP. In addition, the inspectors evaluated the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving radiation monitoring and exposure controls.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

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

4OA1 Performance Indicator Verification (71151)

.1 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 (MS07) PI for the period from the third quarter 2014 through the second quarter 2015. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, CRs, MSPI derivation reports, event reports and NRC Integrated IRs for the period of July 1, 2014, through June 30, 2015, 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 CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. 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.

.2 Mitigating Systems Performance Index—Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Residual Heat Removal System (MS09) PI for the period from the third quarter 2014 through the second quarter 2015. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, CRs, MSPI derivation reports,

event reports and NRC Integrated IRs for the period of July 1, 2014, to June 30, 2015, 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 CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI - Residual Heat Removal System sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity PI for Palisades Nuclear Plant for the period from the fourth quarter 2014 through the second quarter 2015. The inspectors used Performance Indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's reactor coolant system chemistry samples, TS requirements, CRs, event reports, and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.4 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage PI for the period from the fourth quarter 2014 through the second quarter 2015. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator logs, Reactor Coolant System leakage tracking data, CRs, event reports, and NRC Integrated IRs for the period of the fourth quarter 2014 through the second quarter 2015 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CR database to determine if any problems had been identified

with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness PI for the period from the second quarter 2014 through the second quarter 2015. The inspectors used PI definitions and guidance contained in NEI 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee’s assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee’s PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports, and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one occupational exposure control effectiveness sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.6 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual  
Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the RETS/ODCM radiological effluent occurrences PI for the period from the third quarter 2014 through the second quarter 2015. The inspectors used PI definitions and guidance contained in NEI 99–02, “Regulatory Assessment Performance Indicator Guideline,” Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee’s CR database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data

and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one RETS/ODCM radiological effluent occurrences sample as defined in IP 71151-05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline IPs discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify 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 CR 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.

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

.1 Event Notification for Spill of Sewage from Chemical Toilet

a. Inspection Scope

The inspectors reviewed the plant's response to an Event Notification for a Spill of Sewage from a Chemical Toilet on July 13, 2015. The inspectors reviewed the licensee's actions to assess and report the spill. The spill occurred during a rainstorm with high winds which caused the chemical toilet to tip over and spill. The spill had no impact on plant operations. The inspectors also reviewed the Material Safety Data Sheet for the chemicals involved and the licensee's notifications of government agencies to validate appropriate actions were taken and notifications were made. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Contingency Plans for Licensee Strikes or Lockouts (IP 92709)

a. Inspection Scope

The United Government Security Officers of America Local 29 contract ended on July 1, 2015. The contract was extended multiple times past this date to continue negotiations between the licensee and union officials. Prior to the extended contract end date of August 21, 2015, the resident inspectors and Region III security specialists developed a strike/lockout contingency plan. The inspectors reviewed the licensee's strike/lockout preparations, including staffing and training. A verbal agreement was reached between the union and Entergy on August 21, 2015, and was ratified on August 24, 2015, without a strike/lockout. These activities constituted one sample as defined in IP 92709.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 29, 2015, the inspectors presented the inspection results to Mr. A. Vitale, Site Vice President, 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 inspection results for the areas of radioactive gaseous and liquid effluent treatment; and reactor coolant system specific activity, occupational exposure control effectiveness, and RETS/ODCM radiological effluent occurrences PI verification with Mr. A. Vitale, Site Vice President, on July 17, 2015.

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.

ATTACHMENT: SUPPLEMENTAL INFORMATION



## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

A. Vitale, Site Vice President  
A. Williams, General Manager Plant Operations  
B. Baker, Operations Manager Support  
T. Mulford, Operations Manager  
R. Craven, Senior Manager Production  
B. Dotson, Licensing Specialist  
T. Davis, Licensing Specialist  
O. Gustafson, Regulatory and Performance Improvement Director  
J. Hardy, Regulatory Assurance Manager  
J. Haumersen, Senior Manager Projects  
D. Malone, Emergency Preparedness Manager  
W. Nelson, Training Manager  
K. O'Connor, Engineering Design Manager  
J. Borah, Engineering Systems and Components Manager  
G. Heisterman, Senior Maintenance Manager  
M. Schultheis, Performance Improvement Manager  
C. Plachta, Nuclear Independent Oversight Manager  
P. Russell, Engineering Director  
J. Tharp, Security Manager  
D. Nestle, Radiation Protection Manager  
M. Soja, Interim Chemistry Manager  
K. Strickland, Environmental Specialist

#### Nuclear Regulatory Commission

E. Duncan, Chief, Branch 3

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000255/2015003-01	NCV	Failure to Justify Continued Service of Safety-Related Electrolytic Capacitors Installed Beyond Their Service Life (Section 1R15)
05000255/2015003-02	NCV	Failure to Establish, Implement, and Maintain the Offsite Dose Calculation Manual (Section 2RS6.5.b)

### Closed

05000255/2015003-01	NCV	Failure to Justify Continued Service of Safety-Related Electrolytic Capacitors Installed Beyond Their Service Life (Section 1R15)
05000255/2015003-02	NCV	Failure to Establish, Implement, and Maintain the Offsite Dose Calculation Manual (Section 2RS6.5.b)

### Discussed

None

## LIST OF DOCUMENTS REVIEWED

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

### 1R04 Equipment Alignment

- CR0PLP-2014-04910, Perform A Radiographic Examination of the CV-1655, Condensing Unit VC-11 Service Water Control, Valve Body, October 6, 2014
- CR-PLP-2014-02801, Tube Leak Discovered in E-901, Raw Water Heat Exchanger, April 26, 2014
- CR-PLP-2014-03090, CV-0821, CCW Heat Exchanger E-54A Temp Control Positioner Has a Small Air Leak, May 19, 2014
- CR-PLP-2014-03563, Main Lube Oil Bearing Supply Temperature is High, June 30, 2014
- CR-PLP-2014-03602, P-7A Basket Strainer High D/P Alarm, July 3, 2014
- CR-PLP-2014-03607, P-7C Pump Shaft in the Area of the Packing was Worn in an Hour Glass Shape, July 3, 2014
- CR-PLP-2014-04427, UT Measured Pipe Thickness Fell Below the Screening Criteria, September 10, 2014
- CR-PLP-2014-04502, While Performing Work on Service Water Pump P-7A Under WO #52474416-03, Some Problems Were Encountered, September 15, 2014
- CR-PLP-2014-04959, Maintenance Performed on the Pump P-7A Affected the Current Vibration Reference Values for the Test, October 12, 2014
- CR-PLP-2014-4401, Corrective Actions Associated with CR-PLP-2012-05813 Were Ineffective in the Prevention of Service Water Leaks Due to Cavitation, September 10, 2014
- CR-PLP-2015-00348, Service Water Side of the Lube Oil Cooler (E-31B) on Emergency Diesel Generator 1-2 East Side End Bell Cover Had Experienced Some Deep Corrosion in Some Areas of the Sealing Gasket, January 21, 2015
- CR-PLP-2015-00355, Copper Tubing Exiting Critical Service Water Piping Immediately Upstream of Control Valve CV-0885 (D/G 102 Service Water Inlet) Has a Pin Hole Leak, January 21, 2015
- CR-PLP-2015-00967, Engineering Review Has Determined that Credible New Information Exists that Potentially Challenges the Conservatism of Current Flooding Design Assumptions or Requirements, March 3, 2015
- CR-PLP-2015-01229, MV-SW176, K-7B Lube Oil Cooler E-24D Service Water Inlet Has an Active Packing Leak of 6 Drops Per Minute, March 23, 2015
- CR-PLP-2015-01573, Ultrasonic Thickness Measurements Less Than Tmin for Piping JB-1-10" Between E-15B and MV-SW201, April 15, 2015
- CR-PLP-2015-02177, P-7C Packing Shaft Was Excessively Worn in the Area Where the Packing Seals Against the Packing Shaft, May 27, 2015
- CR-PLP-2015-02578, E-15A Turbine Generator K-1 Main Lube Oil Cooler, West End Bell Has Approximately a 2.5-3 Gallon Per Hour Service Water Leak, June 23, 2015
- CR-PLP-2015-03178, DPS-1319 SWS PP P-7A Basket Strainer Hi Differential Pressure Switch is Alarming, July 31, 2015
- CR-PLP-2015-03404, P-7A Service Water Pump Packing Leakage Has Been Elevated and Has Required Daily Packing Adjustments, August 15, 2015
- CR-PLP-2015-03953, C-903A, Feedwater Purity Building Air Compressor Oil Pressure at 18 psi with ESOMS Minimum of 20 psi, September 18, 2015

- CR-PLP-2015-04012, Alarm EK-1105 (Air Compressor Standby Comp Running) Unexpectedly, September 19, 2015
- CR-PLP-2015-04037, Standby Compressor Started Despite Normal Operating Pressure in System, September 20, 2015
- CR-PLP-2015-04122, C-903B Feedwater Purity Building Air Compressor Has Oil Leaking From Copper Tube Fitting, September 22, 2015
- Drawing M-214, Sheet 1, Lube Oil, Fuel Oil, and Diesel Generating Systems, Revision 69
- EC 5000121478, Replace Service Water Supply and Discharge Piping & Components for CR HVAC Condenser VC-10, Revision 2WT-PLP-2013-0324, Track Completion of Actions in Service Water Top Ten Action Plan, December 17, 2013
- EN-DC-136, EC-36294, Augmentation of Existing Proceduralized TM (SOP-19, "Instrument Air System", Att. 6, "Supply Service Air Header with Temporary Compressor") to Allow Rapid Realignment of IA Compressor C-2C, Revision 6
- M-203, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet A, Revision 7
- M-203, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 2, Revision 27
- M-204, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet A, Revision 8
- M-204, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1A, Revision 43
- M-204, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1, Revision 84
- M-204, System Diagram Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1B, Revision 41
- M-208, Piping & Instrument Diagram, Non-Critical Service Water System, Sheet 1, Revision 105
- M-208, Piping & Instrument Diagram, Service Water System, Sheet 1A, Revision 65
- M-208, Piping & Instrument Diagram, Service Water system, Sheet 1B, Revision 38
- M-212, Piping & Instrument Diagram; Service & Instrument Air System, Sheet 1, Revision 83
- M-213, Piping & Instrument Diagram, Service Water, Screen Structure and Chlorinator, Revision 95
- SEP-SW-PLP-002, Service Water & Fire Protection Inspection Program, Revision 3
- SOP-12, Auxiliary Feedwater System Checklist, Revision 73
- SOP-15, Service Water System, Revision 60
- SOP-19, Instrument Air System, Revision 64
- SOP-3, Safety Injection and Shutdown Cooling System, Revision 100
- WO 384456, Replace MV-SW136; E-54B SW Outlet CV-028 Bypass
- WO 384458, Replace MV-SW-282; Control Room HVAC Condenser VC-10 SW Outlet
- WO 384459, Replace MV-SW283; Control Room HVAC Condenser VC-10 SW Inlet
- WO 52325906, CV-0826; Replace Valve Assembly

#### 1R05 Fire Protection

- Admin 4.49, Non-Power Operation Fire Risk Management, Revision 0
- EN-DC-127, Control of Hot work & Ignition Sources, Revision 15
- EN-DC-161, Control of Combustibles, Revision 13
- EN-DC-359, Fire Risk Management During Non-Power Operations for NFPA 805 Plants, Revision 1
- Palisades Nuclear Plant Fire Hazards Analysis, Revision 7

- Pre Fire Plan 10/Rooms 001, 001A, 001B, & 004, East Engineered Safeguards Room, Elevation 570' & 579'
- Pre Fire Plan 16 / Room 123, Component Cooling Pump Room, Elevation 590'
- Pre Fire Plan 16 / Room 238, Component Cooling Pump Room, Elevation 607' 6"
- Pre Fire Plan 16 / Room 338, Component Cooling Pump Room, Elevation 625'
- Pre Fire Plan 29, 30, & 31 / Mechanical Equipment Rooms, Elevation 629'-2" & 639'
- Pre Fire Plan 6 / Rooms 116B & 147, Diesel Generator 1-2 and Fuel Oil Day Tank Room, Elevation 590', 607', & 625'
- Pre Fire Plan 9 / Room 13, Screen House/Intake Structure, Elevation 590'
- Refueling Outage 1R24 Fire Protection Log 2014

#### 1R06 Flood Protection

- CR-PLP-2015-00585, Improperly Sized Sprinkler Heads Replaced in Cable Spreading Room, February 4, 2015
- CR-PLP-2015-03229, Eleven Inches of Water and Submerged Cables Discovered During MH-8 Cable and Manhole Inspection, August 3, 2015
- DBD-2.05, Reactor Protective System Safety Injection Signal Anticipated Transient Without Scram, Revision 7
- DBD-7.08, Plant Protection Against Flooding, Revision 6
- EN-WM-105, MH-4 Inspection Electrical, Revision February 3, 2007
- EN-WM-105, MH-8 Cable & Manhole Inspection, Revision February 3, 2007
- WO 52575326, D/GS and D Bus Floor Drain Flow Verification

#### 1R11 Licensed Operator Regualification Program

- CR-PLP-2015-03464, Documentation of Coastdown Commencing on August 25, 2015, August 20, 2015
- EOP Supplement 1, Pressure Temperature Limit Curves, Revision 5
- EOP Supplement 2, PCS Cooldown Strategy, Revision 2
- EOP-1.0, Standard Post-Trip Actions, Revision 16
- EOP-2.0, Reactor Trip Recovery, Revision 13
- GOP-8, Power Reduction and Plant Shutdown to Mode 2 or Mode 3  $\geq 525^{\circ}\text{F}$ , Revision 36
- GOP-9, Mode 3  $\geq 525^{\circ}\text{F}$  to Mode 4 or Mode 5, Revision 36
- PNT 17.0 Attachment 2, Form PNF-17-SES, Simulator Exam Scenario SES-115 Revision 4, Revision 5
- PO-2, PCS Heatup/Cooldown Operations, Revision 7
- SOP-1B, Primary Coolant System – Cooldown, Revision 19
- SOP-2A, Chemical and Volume Control System

#### 1R12 Maintenance Effectiveness

- AOP-32, Loss Of Containment Integrity, Revision 0
- CIS-M-6, Personnel Air Lock Seal Contact Adjustment, Revision 0
- CR-PLP-2010-05643, Excessive Leakage on Inner Door Seal During DWO-13 LLRT-Local Leak Rate Tests for Inner and Outer Personnel Air Lock Door Seals, October 26, 2010
- CR-PLP-2011-01048, Inner Door Leakage Was High During Performance of Personnel Air Lock Test, DWO-13, March 3, 2011
- CR-PLP-2011-03574, Inner Door Leakage Was 3650 sccm During Performance of DWO-13 LLRT-Local Leak Rate Tests for Inner and Outer Personnel Air Lock Door Seals, July 20, 2011

- CR-PLP-2011-07003, Determine if There is a Method to Compensate for the Non-Uniform Seal Grooves and Compression Set of Seal Material or Document Acceptability of Continuing Under Current Conditions, December 22, 2011
- CR-PLP-2013-01894, Inner Door Leak Rate was 9011 sccm Per Step During DWO-13 LLRT-Local Leak Rate Tests for Inner and Outer Personnel Air Lock Door Seals, April 26, 2013
- CR-PLP-2013-01965, During Performance of DWO-13, LLRT for Inner and Outer Personnel Air Lock Doors, Inner Door Test Pressure Would Not Return to 10.5-11.5 psig, May 1, 2013
- CR-PLP-2014-00254, AOP-32, Loss of Containment Integrity Was Not Entered When Entry Conditions Were Met, January 15, 2014
- CR-PLP-2014-05929, Assignment of Responsible Manager for Category 'C', Non-Significant CR, December 29, 2014
- CR-PLP-2014-05929, During Local Leak Rate Test Inner Door Leakage Determined to be 5438 scfm With An Acceptance Criteria of Less Than or Equal to 3474 scfm, December 23, 2014
- CR-PLP-2014-05929, Ensure That Condition Documented in CR-PLP-2014-05930 is Appropriately Addressed Within the Scope of Corrective Action Plan, December 29, 2014
- CR-PLP-2015-00911, Evaluate Design of Inner and Outer Personnel Airlock (MZ-19) Seals, May 7, 2015
- CR-PLP-2015-03181, Entered AOP-32 for Inoperable Containment Inner Airlock Door, July 31, 2015
- CR-PLP-2015-03279, MZ-19 Inner Airlock Door Declared Inoperable Due to Excessive Leakage, August 6, 2015
- DBD-2.09, Containment Building, Revision 4
- DR-PLP-2015-00911, Excessive Leakage Excessive During Local Leak Rate Test of Inner Personnel Air Lock Door, February 27, 2015
- DWO-13, LLRT – Local Leak Rate Tests for Inner and Outer Personnel Air Lock Door Seals, Revision 26
- EN-DC-205, Functional Failure Determination Form for CR-PLP-2013-01965, Revision 4
- EN-DC-205, Functional Failure Determination Form, Revision 5
- EN-LI-118, Equipment Failure Evaluation, Revision 21
- EN-LI-119, Apparent Cause Evaluation Report for Failure of Personnel Air Lock Leak Rate Testing, Revision 1
- EN-MA-123, Rework Investigation Template for CR-PLP-2013-01965, Revision 5
- WO 407323 01, MZ-19, Inner Door Leakage Was Excessive Repair Seal
- WO 418803 01, MZ-19, Adjust Inner Door Seal (Contingency)

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

- AOP-30, Loss of Shutdown Cooling, Revision 1
- CR-PLP-2015-03144, NRC Inspector Identified Concern With the Number of Tie-Downs Securing Shielded Cast to Trailer During Purification Demineralizer Filter Change Out, July 28, 2015
- CR-PLP-2015-03682, Diver in Tilt Pit Received Alarm on an Extremity, Informational, Non-Whole Body Electronic Dosimeter, September 3, 2015
- CR-PLP-2015-03683, Discovered Galled Locking Cylinder Bracket Bolt During Removal of Locking Cylinder from the Spent fuel Side Upender, September 4, 2015
- CR-PLP-2015-03690, East Side Top Bolt Galled During Installation During Reassembly of Spent Fuel Side Upender Locking Cylinder, September 4, 2015
- CR-PLP-2015-04133, Implementation of EN-DC-161 During HRPOS, September 22, 2015
- CR-PLP-2015-04156, CRDM Located at Position A11 Was Found Stuck, September 22, 2015

- EN-DC-161, Control of Combustibles, Revision 13
- EN-DC-359, Fire Risk Management During Non-Power Operations for NFPA 805 Plants, Revision 1
- EN-IS-123, Electrical Safety, Revision 14
- EN-MA-118, Foreign Material Exclusion, Revision 10
- EN-MA-119, Material Handling Program, Revision 23
- EN-MA-127, Conduct of Diving Operations, Revision 9
- EN-OP-116, Infrequently Performed Tests For Evolutions, Revision 12
- EN-RP-151, Radiological Diving, Revision 3
- FPIP-4, Fire Protection Systems and fire Protection Equipment, Revision 34
- OL-PLP-2014-0026, ORAT RO-24, Revision 1
- Procedure 4.49, Non-Power Operation Fire Risk Management, Revision 0
- Refueling Outage 1R24 Fire Protection Log
- RFL-D-11, Uncouple CRDMs and Raise Rack Extensions, Revision 8
- WI-RSD-R-016, Replacement of Purification Demineralizer Filter, Revision 11
- WO 2424601, H-13, Rebuild and Reinstall SFP Side Upender Locking Cylinder
- WO 381087, N-50, Uncouple CRDMs and Raise Rack Extensions
- WO 386059, 72-13, Replace DC Contactor and Install Current Limiting Fuses
- WO 409729, H-5, Inspect Wheels and Structure of Fuel Transfer Cart
- WO 52549986, F-54A, Replacement of Filter Prior to 1R24

#### 1R15 Operability Determinations and Functionality Assessments

- AOP-29, PCP Abnormal Conditions, Revision 4
- ARP-5, PCP Steam Generator and Rod Drives Scheme EK-09 (C-12), Revision 102
- Calculation # E48-LE-01, Transamerica Delavel Containment Level Element, Revision 12
- CR-PLP-2011-01341, NRC Identified Concern With Regards to Part 21 Document During the Deferral of Governor Replacement, March 18, 2011
- CR-PLP-2012-05721, NRC Issued IN 2012-11: Age-Related Capacitor Degradation on July 23, 2012, August 16, 2012
- CR-PLP-2014-05918, MO-45 Control Room Channel Checks are Close to Being Outside Acceptance Criteria, December 21, 2014
- CR-PLP-2015-03064, Clarification Required in Maintenance Rule Scoping Document for Containment Level Instrumentation, July 22, 2015
- CR-PLP-2015-00596, Trend in P-50A Oil Level, February 5, 2015
- CR-PLP-2015-00757, Safety Injection Tank T-82C Pressure Transmitter Spiking, February 17, 2015
- CR-PLP-2015-00998, Open Indicating Light for CV-0944A Failed to Light, March 6, 2015
- CR-PLP-2015-01007, Unexpected Primary Makeup Tank T-81 Hi-Lo Alarm, March 8, 2015
- CR-PLP-2015-01133, Containment Radiation Monitor RIA-1817 Warning Light is Illuminated, March 16, 2015
- CR-PLP-2015-01236, Unexpected Charging Low Flow Alarm EK-0735, March 25, 2015
- CR-PLP-2015-01943, Safety Injection Tank T-82B Vent Valve CV-3065, May 12, 2015
- CR-PLP-2015-01994, Fire Protection Review of Oil Leak on PCP 50A, May 14, 2015
- CR-PLP-2015-02559, Containment Level Indicating Transmitter Found to be Indicating Below the Minimum Required, June 21, 2015
- CR-PLP-2015-02828, Received EK-0949, P-50A Seal Pressure Off-Normal, July 6, 2015
- CR-PLP-2015-02946, Oily Smell and Film Detected During Dewatering Setup, July 13, 2015
- CR-PLP-2015-03285, Based on Repair of LIT-0446B, Initiate A WO to Perform Same Repairs to LIT-0446A, August 6, 2015

- CR-PLP-2015-03536, LIT-0446A Containment Level Transmitter Indicator, A Level Indication Appears Erratic On the PPC, August 26, 2015
- CR-PLP-2015-03547, LIT-0446A, LIT-0446B Containment Floor Level Transmitters Do Not Meet the Acceptance Criteria of MO-45, August 27, 2015
- CR-PLP-2015-04972, Failure to Justify Continued Service of Safety-Related Electrolytic Capacitors Installed Beyond Their Service Life, October 13, 2015
- DBD-2.04, Primary Coolant System, Revision 8
- DBD-7.02, Appendix A, Table A-1, EQ Master Equipment List, Revision 13
- EN-DC-153, Preventive Maintenance Component Classification, Revision 12
- EN-DC-205, Functional Failure Determination Form for CR-PLP-2015-02559, Revision 5
- EN-WM-105, Remove LIT-0446A to Bench to Replace Converter Capacitor, June 21, 2011
- EOP-4.0, Loss-of-Coolant Accident Recovery Basis, Revision 14
- EOP-4.0, Loss-of-Coolant Accident Recovery, Revision 23
- EOP-9.0, Functional Recovery Procedure, Revision 22
- FSAR Chapter 7, Instrumentation and Controls, Revision 31
- MO-45, Control Room Channel Checks, Revision 10
- Oil Level Trends, P-50A, 2006-2015
- Operations Aggregate List, August 24, 2015
- Operator Burden, Primary Makeup Tank T-81 Auto Makeup Capability Does Not Work, June 26, 2015
- Operator Burden, Safety Injection Tank T-82B Vent Valve CV-3065 Not Working Properly, June 10, 2015
- PLO-RPT-12-00026, EGAD-EP-10, Palisades Maintenance Rule Scoping Document, Revision 0
- PNP 2015-058, Technical Specification Required Report, August 3, 2015
- RI-68, Containment Water Level and Sump Level Monitor Calibration, Revision 12
- Vendor Document M0001EB-0856, Allis Chalmers PCP Motor
- WO 380046, LIT-0446B; Replace LIT Water Level Transmitter Drifting

#### 1R19 Post-Maintenance Testing

- CR-PLP-2015-03092, Amber Light for LTRI-0101A Heater Power Supply Failed During Performance of MI-43, July 23, 2015
- CR-PLP-2015-04299, New Valve Procured to be Installed as CV-0826 'CCW HX E-54B SW Outlet' Does Not Match the Configuration of the Valve Removed, September 25, 2015
- CR-PLP-2015-04380, CV-0826 'CCW HX E-54B SW Outlet' Failed Leakage Test, September 27, 2015
- CR-PLP-2015-04562, Unable to Fully Evaluate Post-Maintenances Diagnostic Testing on CV-0826 Due to Failure to Collect Torque Data, October 1, 2015
- CVCO-4, Periodic Test Procedure – Charging Pumps, Revision 7
- EC-60236, Evaluation of Alternate Valve Disc Hard Stop Configuration for CCW Heat Exchanger (E-54B) Service Water Outlet Valve CV-0826, Revision 0
- EN-MA-143, Use of VIPER or VOTES Infinity Air Operator Valve Diagnostics, Revision 4
- M-208, Piping & Instrument Diagram Service Water System, Sheet 1A, Revision 65
- MI-43, Reactor Vessel Level Monitoring System Channel Check, Revision 18
- QO-5, Valve Stroke Testing Data Sheet, CV-0821, CV-0822, CV-0826, Attachment 17, Revision 94
- WO 00384456 04, Replace MV-SW136, SW Outlet CV-0826 Bypass
- WO 52325906 01, CV-0826, CCW HX E-54B SW Outlet Valve Replace Valve
- WO 52436026 02, CV-0821, Inspect Valve and Repair or Replace as Necessary
- WO 52436027 04, CV-0822, Inspect Valve and Repair or Replace as Necessary



- WO 52541561 02, CV/VOP-0915; Diagnostic Testing (Return To Service)
- WO 52617441 01, MI-43 Reactor Vessel Level Monitoring System Channel Check

#### 1R20 Outage Activities

- Admin 4.49, Non-Power Operation Fire Risk Management, Revision 0
- AOP-25, Loss of Refueling Water Accident, Revision 0
- AOP-26, Loss of Spent Fuel Pool Cooling, Revision 2
- AOP-30, Loss of Shutdown Cooling, Revision 1
- AOP-34, Fuel Handling Accident, Revision 0
- CR-2015-04249, Penetration MZ-30, Containment Spray Pump Discharge was Not Listed on GOP-14, Attachment 12, September 25, 2015
- CR-PLP-2014-04909, Create a WO to Internally Inspect the Entire Length of the Intake Pipe and the Lakebed Immediately Above the Intake Pipe, October 10, 2014
- CR-PLP-2014-04924, Replace Power Cables Between EX-04 and 2400 V Busses 1C and 1D With Larger Higher Amp Rated Cables, October 10, 2014
- CR-PLP-2015-03039, Fire Risk Management During Non-Power Operations for NFPA 805 Plants Have Not Been Fully Implemented in the Outage Schedule, July 20, 2015
- CR-PLP-2015-03469, Leakage Identified on MV-SW137, "East ESS Room Cooler VHX-27A Outlet", August 20, 2015
- CR-PLP-2015-03840, Oil Build Up Observed Under Fill Port that Leads to Site Glass and Sample Tube on Primary Cooling Pump 50A, September 16, 2015
- CR-PLP-2015-03842, Oil Sample Obtained from the Upper Reservoir of PCP Motor 50B Was Found to be Darker in Color Than the Rest of the Samples Taken, September 16, 2015
- CR-PLP-2015-03848, Oil Samples for the P-50A PCP Motor and P-50C PCP Motor Were Taken With the Motors Running, September 16, 2015
- CR-PLP-2015-03864, Mode 3 Walkdown – CRD-36, September 17, 2015
- CR-PLP-2015-03876, SPI Reading for Rod 27 Was Found to be Reading 30" Prior to Rod Movements, September 17, 2015
- CR-PLP-2015-03882, Problem Identified on Spent Fuel Handling Machine During Dummy Fuel Bundle Moves, September 17, 2015
- CR-PLP-2015-03884, Mode 3 Walkdown – MV-CVC2296, September 16, 2015
- CR-PLP-2015-03885, Mode 3 Walkdown – MV-CVC2299, September 17, 2015
- CR-PLP-2015-03886, Mode 3 Walkdown – MV-ES3009, September 17, 2015
- CR-PLP-2015-03887, Mode 3 Walkdown - MV-ES3010A, September 17, 2015
- CR-PLP-2015-03889, Mode 3 Walkdown – MV-ES3109A, September 17, 2015
- CR-PLP-2015-03890, Mode 3 Walkdown – MV-ES3125A, September 17, 2015
- CR-PLP-2015-03895, Mode 3 Walkdown – CV-1015, September 16, 2015
- CR-PLP-2015-03896, Mode 3 Walkdown – MO-3011, September 17, 2015
- CR-PLP-2015-03897, Mode 3 Walkdown – CV-1013, September 16, 2015
- CR-PLP-2015-03899, Mode 3 Walkdown – MV-SFP505, September 16, 2015
- CR-PLP-2015-03902, Mode 3 Walkdown – MV-CRW113, September 16, 2015
- CR-PLP-2015-03903, Mode 3 Walkdown – MO-3068, September 17, 2015
- CR-PLP-2015-03904, Mode 3 Walkdown – MV-CRW112, September 16, 2015
- CR-PLP-2015-03906, Repair Workers Calculated Corrected Load Value for Input to the Battery Capacity Computer Test System Multiplied Correction to the Uncorrected Load vs the Procedural Step, September 27, 2015
- CR-PLP-2015-03915, Mode 3 Walkdown – CRD-40, September 18, 2015
- CR-PLP-2015-03916, Mode 3 Walkdown – CRD-17, September 18, 2015
- CR-PLP-2015-03920, Mode 3 Walkdown – T-72, September 18, 2015
- CR-PLP-2015-03921, Mode 3 Walkdown – MV-PC1068, September 18, 2015

- CR-PLP-2015-03922, Mode 3 Walkdown – P-50B, September 18, 2015
- CR-PLP-2015-03923, mode 3 Walkdown – P-50A, September 18, 2015
- CR-PLP-2015-03926, Mode 3 Walkdown – CV-2202, September 18, 2015
- CR-PLP-2015-03927, Mode 3 Walkdown – CV-3038, September 18, 2015
- CR-PLP-2015-03931, Control Valve CV-0608 for the Moisture Separator Drain Tank Level Controls Did Not Stroke as Expected, September 18, 2015
- CR-PLP-2015-03933, Red Indication Lamp on Escape Airlock Door is Malfunctioning, September 18, 2015
- CR-PLP-2015-03945, Issues Identified During E-30B System Engineer Cooling Tower Walkdown, September 18, 2015
- CR-PLP-2015-03956, Mode 3 Walkdown of the PCS 590' Elevation, September 16, 2015
- CR-PLP-2015-03958, Operations Noted on Cameras That a Cable Was Routed Through the Recently Opened Equipment Hatch, September 18, 2015
- CR-PLP-2015-03960, Mode 3 Walkdown - MV-CC110, PCP P-50A, September 16, 2015
- CR-PLP-2015-03961, Mode 3 Walkdown – MV-CC112, PCP P50B, September 16, 2015
- CR-PLP-2015-03962, Mode 3 Walkdown – MV-CC196, September 16, 2015
- CR-PLP-2015-03964, Mode 3 Walkdown – P-50C, September 16, 2015
- CR-PLP-2015-03965, Mode 3 Walkdown – PCP P-50C, September 16, 2015
- CR-PLP-2015-03966, Mode 3 Walkdown – T-64C, September 16, 2015
- CR-PLP-2015-03967, Mode 3 Walkdown – RV-1041, PZR T-72, September 16, 2015
- CR-PLP-2015-03968, Mode 3 Walkdown – Pressurizer Shed on the 649' Elevation, September 16, 2015
- CR-PLP-2015-03969, Mode 3 Walkdown - P-50A, September 16, 2015
- CR-PLP-2015-03970, Alignments Between Work Group and Operations Were Not Precise, September 18, 2015
- CR-PLP-2015-03970, During Performance of RFL-D-3 "Open Equipment Hatch," Alignments Between the Work Group and Operations Were Not Concise, September 18, 2015
- CR-PLP-2015-03971, Mode 3 Walkdown - P-50B, PCP, September 16, 2015
- CR-PLP-2015-03972, Mode 3 Walkdown - MV-PC1137, P-50C FE-0143A, September 16, 2015
- CR-PLP-2015-03973, Mode 3 Walkdown – T-64B, September 16, 2015
- CR-PLP-2015-03975, Mode 3 Walkdown – VHX-4, September 16, 2015
- CR-PLP-2015-03976, Mode 3 Walkdown – CRD-37, September 16, 2015
- CR-PLP-2015-03977, Mode 3 Walkdown – CRD-41, September 16, 2015
- CR-PLP-2015-03990, NDE Activities on L-1/D-1, September 19, 2015
- CR-PLP-2015-04022, CV-3057 Solenoid Valve is Not Functioning Properly, September 20, 2015
- CR-PLP-2015-04023, Category 5 Air Leak on the Diaphragm of CV02111, September 20, 2015
- CR-PLP-2015-04050, Concentrate Boric Acid Storage Tank, T-53A is Above the Refueling Mode Admin Limit of 15,000-ppm, September 20, 2015
- CR-PLP-2015-04052, Mode 3 Walkdown – MO-3012, September 20, 2015
- CR-PLP-2015-04053, Mode 3 Walkdown – MO-3008, September 20, 2015
- CR-PLP-2015-04059, Mode 3 Walkdown – CRD-45, September 21, 2015
- CR-PLP-2015-04061, During Performance of RFL-D-8, CRDM Tool Access Flange Removal, Control Room SRO Approval Was Not Obtained, September 21, 2015
- CR-PLP-2015-04066, Drain Line for RV-0707 Was Found Broken During Valve Removal, September 21, 2015
- CR-PLP-2015-04070, Gaps Identified During Performance of the Turbine Stop Valve Cover Lift, September 21, 2015

- CR-PLP-2015-04076, Signal Person and Crane Operator Were Not in Constant Communication During One Portion of the Turbine Stop Valve Cover Removal, September 21, 2015
- CR-PLP-2015-04079, CV-1059 Failed Drop Test, September 21, 2015
- CR-PLP-2015-04085, CV-2099, PCP Controlled Bleed Off Containment Isolation, Diagnostic Testing Performed With Out Communications to Operations Personnel, September 21, 2015
- CR-PLP-2015-04090, CV-0701 and CV-0703 Actuator Stems and Bushings are Worn and Require Replacement, No Parts Available, September 22, 2015
- CR-PLP-2015-04092, Drop Test Failed During As-Left Testing to Check CV-2099 PCP Controlled Bleed Off Containment Isolation, September 22, 2015
- CR-PLP-2015-04096, BTV-0610 Internal Inspection Reveals Damage to Disc Causing it to Lay Sideways, September 22, 2015
- CR-PLP-2015-04109, As Found Testing Results at the Upper End of its Acceptance Criteria, September 22, 2015
- CR-PLP-2015-04116, RV-0775 Failed to Lift With an Acceptance Range of 1265 to 1465 psi, September 22, 2015
- CR-PLP-2015-04123, One Worker on Scaffold Building Crew Was Not FME qualified, September 22, 2015
- CR-PLP-2015-04130, "B" Channel AFAS Power Supply Appears to be Bad, September 22, 2015
- CR-PLP-2015-04153, Loose Spindle Cap Identified During Offsite Testing and Repair of RV-0703, September 23, 2015
- CR-PLP-2015-04155, ICI Flange 2 Cannot be Removed Due to What Appears to be a Bent Connector, September 23, 2015
- CR-PLP-2015-04159, An FME Bladder Was Installed Into the Valve Body of Main Steam Governor Valve #1 CV-0570 Without Logging it Into the FEM Log Book, September 23, 2015
- CR-PLP-2015-04163, RO-32-11 Exceeds Administrative Limit for Second Outage In A Row, September 23, 2015
- CR-PLP-2015-04169, PCV-1492 Failed As-Left Testing and Cannot Be Repaired, September 23, 2015
- CR-PLP-2015-04172, RO-32-42 Exceeds Administrative Limit for Second Outage in a Row, September 23, 2015
- CR-PLP-2015-04178, There are No Lanyards Available to Workers In Containment, September 23, 2015
- CR-PLP-2015-04180, Maintenance Activities on RV-0721, September 23, 2015
- CR-PLP-2015-04187, A High Pressure Turbine Rigging Hardware Interference Was Identified While Rigging the HP Turbine K-1-HP Outer Cylinder for Removal, September 23, 2015
- CR-PLP-2015-04192, Magnetic Particle NDE Examinations on the L-1/LD-4 and Alloy 600 Projects, September 23, 2015
- CR-PLP-2015-04203, CV-0780 Failed a Drop Test by Dropping 7.5 Percent of Pressure, September 24, 2015
- CR-PLP-2015-04204, CV-0781 Failed a Drop Test by Dropping Approximately 10.1 Percent of Pressure Over 5 Minutes, September 24, 2015
- CR-PLP-2015-04218, Unable to Establish Required Flow Rate for Final Bundle Flush During Draining and Filling the 'B' Steam Generator, September 25, 2015
- CR-PLP-2015-04222, Foreign Material Exclusion is Not Meeting Requirements of EN-MA-118 for the Main Turbine Project, September 24, 2015
- CR-PLP-2015-04240, CV-1057 "Pressurizer Spray Valve From Loop 1B" Failed its Drop Test, September 24, 2015
- CR-PLP-2015-04243, RP Technician Preparing to Enter Containment Was Not Signed in on Tagging, September 23, 2015

- CR-PLP-2015-04246, P50A PCP Motor Lower Oil Reservoir Has Active Leak From Lower Bearing Reservoir Gasket, September 25, 2015
- CR-PLP-2015-04248, During Venting, CV-3065, Safety Injection Tank T-82B Vent Valve, Would Not Close, September 25, 2015
- CR-PLP-2015-04265, Errors Were Discovered Within EN-MA-119, "Material Handling Program" Attachment 9.10, September 25, 2016
- CR-PLP-2015-04277, Packing End Rings Ordered for the AOV Stem Were Not the Proper Size, September 25, 2015
- CR-PLP-2015-04278, Slowly Lowering Trend on T-3, CCW Surge Tank, September 25, 2015
- CR-PLP-2015-04281, Procedure HED-M-2 Requires Revision, September 25, 2015
- CR-PLP-2015-04282, Robot Disconnected From Tubesheet and Fell Into Bowl with No Damage and All Loose Parts Accounted for, September 25, 2015
- CR-PLP-2015-04283, Feedwater Pump P-1A to SG E-50B Has Pipe Wall Thickness Readings Below the Calculated Minimum, September 25, 2015
- CR-PLP-2015-04290, A Protected Equipment Boundary Was Found Not to be in Place in the Cable Spreading Room, September 25, 2015
- CR-PLP-2015-04292, ED-16, Charger #2 for Station Battery #2 Would Not Transfer to Equalize Charge Mode, September 25, 2015
- CR-PLP-2015-04293, Supplemental Workers Performing Main Feedwater Pump P-1A Maintenance and Inspection Activities Were Observed Using Less Than Adequate Human Performance Tools, September 25, 2015
- CR-PLP-2015-04295, Replacement Flange Found Not to be the Same as Old Flange During Attempted Replacement on MV-FW166 Valve, September 25, 2015
- CR-PLP-2015-04302, Steam Erosion Found at the North East Corner of the K-1-HP Horizontal Joint, September 25, 2015
- CR-PLP-2015-04319, "As-Built" Rigging Assembly Too Long for the HP Turbine Rotor, September 26, 2015
- CR-PLP-2015-04339, GCA Oversight Seeing Minor Administrative Issues With FME Log Keeping, September 26, 2015
- CR-PLP-2015-04343, Incorrect Size Sealtight Ordered For TE-0131A, September 26, 2015
- CR-PLP-2015-04357, Steam Leak Path Bypasses the Finger Seal, September 27, 2015
- CR-PLP-2015-04361, Permissive in Pelco Camera System Needs to be Removed Prior to Start of Refueling Outage, September 27, 2015
- CR-PLP-2015-04368, New Piston Seals Were Not Like for Like in Repair of CV-3057, September, 27, 2015
- CR-PLP-2015-04388, Wrong Packing Was Procured for CV-3001, September 27, 2015
- CR-PLP-2015-04391, As Found Condition of Valve Internals on CV-0780, S/G E-50B ASDV Are Poor, September 27, 2015
- CR-PLP-2015-04392, Small Leak From Conduit Box on P-50D, September 27, 2015
- CR-PLP-2015-04396, Replacement Actuator Base Plate Does Not Match the Piece Removed From VOP-3057, September 27, 2015
- CR-PLP-2015-04398, CV-2191 PCP Controlled Bleedoff Stop, Air Supply Regulator Failed, September 28, 2015
- CR-PLP-2015-04400, Installed Flanges Were 300# and Replacement Flanges of 150# During Performance of WO-00378591, September 28, 2015
- CR-PLP-2015-04404, Need to Determine Correct Replacement Part for Steam Element Due to Mis-Marking, September 28, 2015
- CR-PLP-2015-04410, Packing Adjustment on MV-CC713 Was Unsuccessful, September 28, 2015
- CR-PLP-2015-04421, Work Group Did Not Fully Barricade or Adequately Verify the Work Area for the Main Condensate Pump (P-2A) Lift, September 28, 2015

- CR-PLP-2015-04434, Performed PCP P-50D Inspection of Lube Oil System and Oil Collection System, September 28, 2015
- CR-PLP-2015-04435, Performed PCP P-50A Inspection of Lube Oil System and Oil Collection System, September 28, 2015
- CR-PLP-2015-04436, Performed PCP P-50B Inspection of Lube Oil System and Oil Collection System, September 28, 2015
- CR-PLP-2015-04438, Flange Leakage Drain, Leaked by at 3 GPM to the Primary System Drain Tank with the Reactor Head Removed and the Cavity Flooded, September 29, 2015
- CR-PLP-2015-04462, PCV-3057B, T-58 Outlet CV-3057 Needs to Be Adjusted A/S REG Setpoint, September 29, 2015
- CR-PLP-2015-04473, Containment Sump Check Valve Inservice Testing, Step 5.2.13.3 Was Not Consistent With CK-ES3166 Data Review, September 29, 2015
- CR-PLP-2015-04481, New Style Kits for Replacement of Buses 1C, 1D, and 1B Feeder Cable Replacement Projects, September 29, 2015
- CR-PLP-2015-04488, MV-ES3184, JPSI P-66A Suction Manual Valve Was Difficult to Operate During a Tagout, September 29, 2015
- CR-PLP-2015-04505, ICI Locking Device Quick Disconnect on Flange Number 7 Disconnected, September 28, 2015
- CR-PLP-2015-04507, Valve Bellow at Maximum Procedural Tolerance, Valve Shows Erratic Set Pressure Testing/Adjustment, and Valve Disc is Within Tolerance During as Left Testing on RV-1041, September 30, 2015
- CR-PLP-2015-04511, Atmospheric Steam Dump Solenoid SV-0779A & SV-0782A did Not Isolate When Expected During Functional Test, September 30, 2015
- CR-PLP-2015-04514, Two Air Compressors Providing Breathing Air to Steam Generator Project are Within 10 Feet of Two Diesel Powered Water Pumps, September 30, 2015
- CR-PLP-2015-04521, Pen Cap Observed Floating in Reactor Cavity, September 29, 2015
- CR-PLP-2015-04533, Threads on the Valve Actuator Stem Were Sheared During Seat Load Adjustment on CV-3038, September 30, 2015
- CR-PLP-2015-04534, CV-3065 Safety Injection Tank T-82B Vent Valve Internal Valve Stem Guide Bushing Had Significant Corrosion Build Up, September 29, 2015
- CR-PLP-2015-04544, Minor Defects Identified on the Disk for CV-0781 That Will be Removed Prior to Installation, October 1, 2015
- CR-PLP-2015-04547, Red and Green Lenses Mistakenly Swapped During Repair, October 1, 2015
- CR-PLP-2105-03919, Battery Charger #1 (ED-15) Would Not Go Into Equalize, September 18, 2015
- CR-PLP-2105-04297, Loads Being Flown Over Top of People, September 25, 2015
- DR-PLP-2015-04043, Air Leak Was Heard Around CV-3057, SIRW Tank Outlet Isolation Valve During Containment Sump Check Valve Inservice Test, September 20, 2015
- EN-DC-127, Control of Hot Work & Ignition Sources, Revision 15
- EN-DC-161, Control of Combustibles, Revision 13
- EN-DC-319, Boric Acid Corrosion Control Program, Revision 11
- EN-DC-359, Fire Risk Management During Non-Power Operations for NFPA 805 Plants, Revision 1
- EN-MA-118, Foreign Material Exclusion, Revision 10
- EN-MA-119, Material Handling Program, Revision 11
- EN-OM-123, Fatigue Management Program, Revision 11
- EN-OP-102, Protective and Caution Tagging, Revision 18
- EN-OP-116, Infrequently Performed Tests or Evolutions, Revision 12
- EN-OU-108, Shutdown Safety Management Program (SSMP), Revision 8
- EOP Supplement 1, Pressure Temperature Limit Curves, Revision 5

- FHS-M-23, Movement of Heavy Loads in the Spent Fuel Pool Area, Revision 36
- FHS-M-24, Movement of Heavy Loads in the Containment Building Area, Revision 38
- FPIP-1, Fire Protection Plan, Organization and Responsibilities, Revision 24
- GOP-11, Refueling Operations and Fuel Handling, Revision 48
- GOP-14, Shutdown Cooling Operations, Revision 49
- MSM-M-72, Movement of Heavy Loads in Turbine Building, Revision 1
- OL-OLPIP-2014-0026, ORAT, Revision 1
- PO-2, PCS Heatup/Cooldown Operations, Revision 7
- Report P2298-14-001, 1R24 Non-Power Operations Outage Assessment, Revision 0
- RFL-D-13, Reactor Pressure Vessel Head Detensioning, Revision 6
- RFL-D-16, Reactor Vessel Closure Head Removal, Revision 17
- RFL-D-19, Removal of UGS From Reactor Vessel, Revision 6
- RFL-D-3, Open Equipment Hatch, Revision 8
- RFL-SG-2, S/G Primary Nozzle Dam Installation and Removal, Revision 10
- SOP-1A, Primary Coolant System, Revision 28
- SOP-1B, Primary Coolant System – Cooldown, Revision 19
- SOP-3, Safety Injection and Shutdown Cooling system, Revision 100
- SOP-6, Reactor Control System, Revision 35
- WI-PCS-M-06, NSSS Walkdown, Revision 5
- WO# 00381087-14, N-50; Reactor Head Removal
- WO# 425-483-01, L-1/LD-1 Lift Rig NDE Inspection PM

#### 1R22 Surveillance Testing

- Admin Procedure No. 4.19, PCS Leak Rate Monitoring Program, Revision 6
- CR-PLP-2014-01047, Steps of RT-8C, Attachment 1 Were Inadvertently Signed Off, February 4, 2014
- CR-PLP-2014-01099, P-54C Would Not Start During RT-8C, February 5, 2014
- CR-PLP-2014-01108, Wavebook Failed to Capture Data in RE-139-1, February 6, 2014
- CR-PLP-2014-4463, PCS Leak Rate Greater than Three Standard Deviations From the Mean, September 12, 2014
- CR-PLP-2014-4861, T-82B Alarm Received for Lo Level Unexpectedly, October 7, 2014
- CR-PLP-2015-02974, As Finds Were Out of Tolerance During RI-99 for Left Channel Nuclear Instrumentation Calibrations, June 15, 2015
- CR-PLP-2015-02979, New Circuit Board Failed Upon Installation, June 16, 2015
- CR-PLP-2015-0323, Incorrect Data Reporting for PCS Primary-to-Secondary Leakage to INPO, January 20, 2015
- CR-PLP-2015-03565, Minor Leaks Identified on VC-10 During RT-202 Control Room HVAC Heat Removal Capability Test, August 28, 2015
- CR-PLP-2015-04043, CV-30057, SIRW Tank Outlet Isolation Valve Wouldn't Fully Open During RO-141, September 20, 2015
- CR-PLP-2015-1501, Rising Trend in 'D' SIT, April 12, 2015
- CR-PLP-2015-1737, Trending of PCS Indicates Measured Seal Leakage Rate for P-55A, 'A' Charging Pump, Experienced a Significant Increase, April 27, 2015
- CR-PLP-2015-2626, Primary System Drain Tank Has In-Leakage, June 24, 2015
- CR-PLP-2015-2683, PCS Leak Rate had Two of Last Three Consecutive Unidentified Leak Rates Greater Than 2 Standard Deviations From the Baseline Mean, June 27, 2015
- CR-PLP-2015-3337, PCS Unidentified Leak Rate Exceeded Action Level 1 Deviation From Baseline Mean, August 11, 2015
- CR-PLP-2015-3357, PCS Unidentified Leak Rate Exceeded Action Level 1 Deviation From Baseline Mean, August 12, 2015

- DBD-2.09, Design Basis Document for Containment Building, Revision 4
- DRN-15-00774, SOP-30, Section 7.3.2, to Transfer from Safeguards/Station Power to Startup Power, Step D.7., References the Wrong Procedure Section
- DWO-1, Operator's Daily/Weekly Items Modes 1, 2, 3, and 4, Revision 105
- EN-DC-161, Control of Combustibles, Revision 10
- EN-MA-134, Offline Motor Electrical Testing, Revision 5
- EN-MA-135, Online Motor Electrical Testing, Revision 5
- EN-MA-153, Use of VIPER or VOTES Infinity Air Operator Valve Diagnostics, Revision 4
- MSI-I-16, Nonintrusive Diagnostic Check Valve Test Procedure (Using Viper/UDS Platform), Revision 5
- Operation's Daily Logs
- Operation's Primary Coolant System Leak Rate Program Data Worksheet
- QO-16, Inservice Test Procedure – Containment Spray Pumps, Revision 35
- RE-139-2, Test Starting Time of Diesel Generator, Revision 12
- RI-99, Left Channel Nuclear Instrumentation Calibrations, Revision 14
- RO-105, Full Flow Test for SIT Check Valves and PCS Loop Check Valves, Revision 13
- RO-141, Containment Sump Check Valves Inservice Test, Revision 6
- RO-32-19, Local Leak Rate Test Procedure for Personnel Air Lock, Revision 9
- RT-202, Control Room HVAC Heat Removal Capability, Revision 15
- RT-8D, Engineered Safeguards System – Right Channel Basis Document, Revision 7
- SEP-CV-PLP-002, Check Valve Condition Monitoring and Inservice Testing Program, Revision 2
- SOP-30, Station Power, Revision 76
- SPS-E-20, Maintenance for 2400 Volt Siemens Switchgear, Revision 6
- WO #380495, RO-141; Containment Sump Check Valve Testing
- WO #419812, T-74; Operations to Troubleshoot Where In-Leakage is Coming From
- WO 419858; NI-1/3A; Source Range Reading Upscale with Detector Disconnected
- WO 52537390-01, RT-8D Engineered Safeguards Sys-Right Channel
- WO 52538538, EMA-1114 (P-54C) Perform Online Motor Testing
- WO 52544830, CK-ES3131 & CK-ES3132, Nonintrusive Check Valve Testing
- WO 52558713, EEQ-EMA-1114, Containment Spray P-54C Motor
- WO 52561654-01, RO-105 – Full Flow Test for SIT Check Valves
- WO 52623508, QO-16C – P-54C, ISI Test Procedure, Containment Spray

#### 1EP6 Drill Evaluation

- AOP-35, Loss of Service Water, Revision 0
- AOP-38, Acts of Nature, Revision 3
- CR-PLP-2015-03549, Sentinel Radiation Work Permit Log-In Station Did Not Function Normally During EP Drill, August 26, 2015
- CR-PLP-2015-03554, Field Monitoring Team 2 Did Not Placekeep the Steps They Followed While Performing Their Drill Duties, August 26, 2015
- CR-PLP-2015-03559, Four Emergency Preparedness Drill Participants Were Observed Without Their Dosimetry of Legal Record During the EP Drill, August 27, 2015
- CR-PLP-2015-03567, Problems Encountered with Radio Communications
- CR-PLP-2015-03568, Cell Phones in Field Monitoring Team Vans had Dead Batteries During Third Quarter 2015 Drill, August 28, 2015
- EI-6.13, Protective Action Recommendations for Offsite Populations, Revision 24
- Emergency Action Level Technical Basis, Revision 7
- EOP Supplement 2, PCS Cooldown Strategy, Revision 8
- EOP-1.0, Standard Post-Trip Actions, Revision 16

- EOP-5.0 Steam Generator Tube Rupture Recovery, Revision 18
- EOP-9.0, Functional Recovery Procedure, Revision 22
- Palisades Third Quarter Emergency Planning Drill, August 26, 2015
- SEP Supplement 1, EAL Wall Charts, Revision 2

#### 2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

- 2013 Annual Radioactive Effluent and Waste Disposal Report, April 30, 2014
- 2014 Annual Radioactive Effluent and Waste Disposal Report, April 27, 2015
- CH 6.20, Radioactive Effluent Operating Procedure, Revision 3
- CH 6.21, Radioactive Liquid Release, Revision 8
- CH 6.41, Land Use Census, Revision 6
- COP-35, Groundwater Monitoring Program, Revision 5
- CR-PLP-2015-03000, RR-10-003 RETS Basis Document is Not Consistent With ODCM Methodology, July 16, 2015
- CR-PLP-2015-2972, Failure to Incorporate Land Use Census Data Into Required Dose Rate Calculations for Nearest Resident, July 15, 2015
- DWR-10, Stack Effluent Sampling and Calculations, Revision 41
- EN-CY-111, Radiological Groundwater Monitoring Program, Revision 6
- LO-PLP-2014-00153, 2015 RET PRE-NRC Assessment, May 26, 2015
- MR-35, Turbine Sump Collection and Calculation, Revision 16
- MR-36, Service Water Collection and Calculation, Revision 17
- ODCM, Appendix A, Relocated Technical Specifications per NRC Generic Letter 89-01 (TAC NO 75060), Revision 18
- ODCM, Revision 26
- REMP RETS Basis Document, Number R10-002, Demonstrating Compliance with 40 CFR, Part 190 Dose Limits, March 28, 2010
- RETS Basis Document, Number R09-001, Liquid Effluent Release Concentration Limit for Dose Calculations, November 29, 2009
- RETS Basis Document, Number R10-001, T-91 Two-Tank Volume Recirculation Time Prior to Sampling Justification, March 15, 2010
- RIA/RIA System Walkdown Checklist, June 30, 2015
- RIA/RIA System Walkdown Checklist, March 30, 2015
- RR 10-03, Predetermined Radioactive Liquid Releases Criteria, Revision 0
- RT-85C, Fuel Handling Area Ventilation System Filter Testing, Revision 12
- RT-85D, Control Room Emergency Ventilation Filtration Testing, Revision 16
- System Health Report, RIA-Radiation Monitoring System, Period Q1-2015
- System Health Report, RIA-Radiation Monitoring System, Period Q4-2014
- WO 52470171 01, RT-85C-SFP Ventilation HEPA & Charcoal Testing

#### 4OA1 Performance Indicator Verification

- CR-PLP-2015-03834, NRC Resident Identified Three Errors in Data Validation Packages for ROPS PCS Identified Leakrate Performance Indicator, September 16, 2015
- EN-LI-114; Performance Indicator Process; Revision 6
- NRC Performance Indicator Data; Reactor Coolant System Leakage; Fourth Quarter 2014 Through Second Quarter 2015
- NRC Performance Indicator Technique/Data Sheet, Mitigating Systems Performance Indicator, High Pressure Injection (MS07), July 2014 Through June 2015
- NRC Performance Indicator Technique/Data Sheet, Mitigating Systems Performance Indicator, Residual Heat Removal (MS09), July 2014 Through June 2015



- Operation's Daily Logs
- Operation's Primary Coolant System Leak Rate Program Data Worksheet
- Palisades MSPI Basis Document, December 21, 2011

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

- CR-PLP-2015-02928, Chemical Toilet Spill During Heavy Rain, July 13, 2015
- EN-51224, Event Notification Worksheet for Chemical Toilet Spill, July 13, 2015
- MSDS-Material Safety Data Sheet for Chemical Toilet, March 12, 2013

#### 4OA5 Other Activities

- CR-PLP-2015-3403, Inconsistency in Meeting Intent of EN-NS-300 for Non-Palisades Security Force Members Physical Agility Tests, August 15, 2015
- EN-NS-300, Security Training Program, Revision 5
- EN-NS-304, Security On-the-Job Training, Task Performance Evaluation, and Training Exemptions, Revision 6
- EN-OM-123, Fatigue Management Program, Revision 11
- Palisades Staffing Contingency Plan

## LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access Management System
CAP	Corrective Action Program
CCW	Component Cooling Water
CR	Condition Report
ECSS	Emergency Core Cooling System
IMC	Inspection Manual Chapter
IN	Information Notice
IP	Inspection Procedure
IR	Inspection Report
LIT	Level Indicating Transmitter
MSPI	Mitigating Systems Performance Index
NEI	Nuclear Energy Institute
NCV	Non-Cited Violation
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
ORAT	Outage Risk Assessment
PARS	Publicly Available Records System
PCP	Primary Coolant Pump
PCS	Primary Coolant System
PI	Performance Indicator
RAS	Recirculation Actuation Signal
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluent Technical Specification
RFO	Refueling Outage
SSC	Structures, Systems, and Components
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order

A. Vitale

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Sincerely,

/RA/

Eric Duncan, Chief  
Branch 3  
Division of Reactor Projects

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