



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
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LISLE, IL 60532-4352

May 4, 2016

EA-16-019

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  
05000255/2016001

Dear Mr. Vitale:

On March 31, 2016, 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 April 7, 2016, with yourself and other members of your staff.

Based on the results of this inspection, the NRC has identified two issues that were evaluated under the risk significance determination process as having very low safety significance (Green). The NRC has also determined that violations are associated with these issues. These violations are being treated as Non-Cited Violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy. These NCVs are described in the subject inspection report. Additionally, two licensee-identified violations are listed in Section 4OA7 of this report.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) the Regional Administrator, Region III; (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the NRC Resident Inspector 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 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 05000255/2016001

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-255

License No: DPR-20

Report No: 05000255/2016001

Licensee: Entergy Nuclear Operations, Inc.

Facility: Palisades Nuclear Plant

Location: Covert, MI

Dates: January 1 through March 31, 2016

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Enclosure

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## SUMMARY

Inspection Report (IR) 05000255/2016001, 01/01/2016 – 03/31/2016; Palisades Nuclear Plant; Radiological Hazard Assessment and Exposure Controls; Identification and Resolution of Problems.

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 involved Non-Cited Violations (NCVs) of U.S. Nuclear Regulatory Commission (NRC) requirements. 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 February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," 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, Section 48(c) and the National Fire Protection Association (NFPA) Standard 805 Section 3.4.1 was identified for the failure to meet the minimum staffing requirements for the Fire Brigade on January 4 and 5, 2016. Specifically, two nuclear plant operators (NPOs) who had their Fire Brigade qualifications suspended, stood watch as Fire Brigade members during day shift on January 4, 2016 and approximately one half of day shift on January 5, 2016. The licensee entered this issue into their Corrective Action Program (CAP) as CR-PLP-2016-00198, performed an apparent cause evaluation, successfully performed a fire drill to requalify the Fire Brigade members with suspended qualifications on January 6, 2016, and planned to update the tracking method used to validate drill completion for Fire Brigade qualifications.

The performance deficiency was determined to be more than minor because it was associated with the Protection Against External Factors 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 using qualitative criteria located in IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." The finding had a cross-cutting aspect of Documentation in the Human Performance cross-cutting area because the licensee informally tracked drill completion and this information was not accessible to each individual Fire Brigade member to validate their qualifications [H.7]. (Section 4OA2)

### Cornerstone: Occupational Radiation Safety

- Green. A self-revealed finding of very low safety significance and an associated NCV of Technical Specification 5.7.1 was identified when movement of a bag of radioactive material caused an area to become a high radiation area without the proper posting and barricades. The licensee immediately moved this bag of radioactive material to a posted

locked high-radiation area and entered this issue into their CAP as CR-PLP-2015-05019.

The performance deficiency was determined to be more than minor because it was associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, the movement of the bag from an area that was a high-radiation area to an area that was not posted and barricaded as a high-radiation area removed a barrier that was intended to prevent workers from receiving unexpected dose. The finding was determined to be of very low safety significance in accordance with IMC 0609 Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008. The violation was of very low safety significance because: (1) it did not involve as-low-as-reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised. The finding had a cross-cutting aspect of Teamwork in the Human Performance cross-cutting area because the individuals and work groups involved did not communicate or coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained [H.4]. (Section 2RS1.5)

### **Other Findings**

Violations of very low safety or security significance or Severity Level IV that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. These violations and CAP tracking numbers are listed in Section 4OA7 of this report.

## REPORT DETAILS

### Summary of Plant Status

The plant began the assessment period operating at full power. The unit downpowered to approximately 98 percent on January 19, 2016, due to a feedwater heater temperature transmitter failing high, which caused heat balance power to be declared inoperable. The unit was returned to 100 percent power on January 20, 2016. The unit was also downpowered on January 26, 2016, to approximately 95 percent for emergent maintenance on Moisture Separator Drain Tank level control valve CV-0608. The unit returned to 100 percent power on January 27, 2016, and operated at full power for the remainder of the inspection period.

### 1. REACTOR SAFETY

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

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

##### .1 Extreme Low Temperature Seasonal Readiness Preparations

##### a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for extreme low temperature conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to extreme low temperature issues:

- auxiliary feedwater (AFW); and
- service water.

This inspection constituted one seasonal extreme weather readiness preparation sample as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings were identified.

## .2 Readiness for Impending Adverse Weather Conditions-High Wind/Blizzard Conditions

### a. Inspection Scope

Due to high winds and blizzard conditions being forecast in the vicinity of the facility for February 24 and 25, 2016, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On February 24, 2016, the inspectors walked down the emergency diesel generators (DGs), in addition to the licensee's emergency alternating current power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors compared the licensee staff's preparations with site procedures and determined whether the staff's actions were adequate. During the inspection, the inspectors focused on plant-specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during high winds. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the UFSAR and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. The inspectors also reviewed a sample of CAP items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment to this report.

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

### b. Findings

No findings were identified.

## 1R04 Equipment Alignment (71111.04)

### .1 Quarterly Partial System Walkdowns

#### a. Inspection Scope

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

- 'B' component cooling water (CCW) train;
- 'A' and 'C' AFW trains; and
- 'B' and 'C' charging system trains.

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 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 CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

These activities constituted three partial system walkdown samples as defined in IP 71111.04–05.

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On January 4–5, 2016, the inspectors performed a complete system alignment inspection of the DGs and auxiliary systems to verify the functional capability of those systems. These systems were selected because they were considered both safety significant and risk significant in the licensee’s probabilistic risk assessment. The inspectors walked down the systems to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; support system operability; 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 systems’ functions. 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 condition of firefighting equipment in the following risk-significant plant areas:

- Fire Area 23: turbine building, elevations 590’ and 580’;

- Fire Areas 2, 11, and 12: cable spreading room and battery rooms, elevation 607’;
- Fire Area 3: 1–D switchgear room and north cableway, elevations 607’–6” and 625’;
- Fire Areas 4, 5, and 7: 1–C switchgear, 1–1 DG, and 1–1 DG fuel oil day tank rooms, elevations 590’, 607’, and 625’;
- Fire Area 13A: auxiliary building main corridor-north and south, elevation 590’; and
- Fire Areas 6 and 8: 1–2 DG and 1–2 DG fuel oil day tank rooms, elevations 590’, 607’, and 625’.

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 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)

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 areas 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:

- DG 1–1 and 1–2 rooms.

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.

1R07 Annual Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed the licensee’s testing of the 1–1 DG lube oil cooler and jacket water cooler heat exchangers to verify that potential deficiencies did not mask the licensee’s ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors compared the licensee’s observations with acceptance criteria, reviewed the correlation of scheduled testing and the frequency of testing, and assessed the impact of instrument inaccuracies on test results. The inspectors also verified that test acceptance criteria considered differences between design conditions and testing conditions. Documents reviewed for this inspection are listed in the Attachment to this document.

This annual heat sink performance inspection constituted one sample as defined in IP 71111.07–05.

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 March 22, 2016, 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;
- 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 abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- the crew’s ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

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

This inspection constituted one quarterly licensed operator requalification program 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 January 26, 2016, the inspectors observed activities in the main control room during isolation of moisture separator drain tank level control valve CV-0608 at approximately 95 percent power. This was an activity that required heightened awareness and 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; and
- oversight and direction from supervisors.

The 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.

.3 Biennial Written and Annual Operating Test Results (71111.11A)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the Annual Operating Test, and Written Examination administered by the licensee between January 14, 2016, and February 12, 2016, required by Title 10 of the *Code of Federal Regulations* (10 CFR) 55.59(a). The results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process," to assess the overall adequacy of the licensee's Licensed Operator Requalification Training (LORT) program to meet the requirements of 10 CFR 55.59.

This inspection constituted one annual licensed operator requalification inspection sample as defined in IP 71111.11A.

b. Findings

No findings were identified.

.4 Biennial Review (71111.11B)

a. Inspection Scope

The following inspection activities were conducted during the week of December 7, 2015, to assess: (1) the effectiveness and adequacy of the facility licensee's implementation and maintenance of its Systems Approach to Training (SAT) based LORT program implemented to satisfy the requirements of 10 CFR 55.59; (2) conformance with the requirements of 10 CFR 55.46 for use of a plant reference simulator to conduct operator licensing examinations and for satisfying experience requirements; and (3) conformance with the operator license conditions specified in 10 CFR 55.53. Documents reviewed are listed in the Attachment to this report.

- Problem Identification and Resolution (10 CFR 55.59(c); SAT Element 5 as Defined in 10 CFR 55.4): The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions to maintain its LORT program up-to-date. The inspectors reviewed about a dozen corrective action documents related to the plant's operation and associated responses (e.g., recent examination and inspection reports; and licensee Condition Reports). The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports.
- Licensee Requalification Examinations (10 CFR 55.59(c); SAT Element 4 as Defined in 10 CFR 55.4): The inspectors reviewed the licensee's program for development and administration of the LORT biennial written examination and annual operating tests to assess the licensee's ability to develop and administer examinations that were acceptable for meeting the requirements of 10 CFR 55.59(a).
  - The inspectors reviewed the methodology used to construct the examination including content, level of difficulty, and general quality of the examination/ test materials. The inspectors also assessed the level of examination material duplication from week-to-week of the operating tests conducted during 2016. The inspectors reviewed the written examination given during the inspection week and associated answer keys to check for consistency and accuracy.
  - The inspectors observed the administration of the annual operating test to assess the licensee's effectiveness in conducting the examinations, including the conduct of pre-examination briefings, evaluations of individual operator and crew performance, and post-examination analysis. The inspectors evaluated the performance of one crew, in parallel with the facility evaluators during two dynamic simulator scenarios, and evaluated various licensed crew members concurrently with facility evaluators during the administration of several job performance measures.

- The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the last requalification examination and the training planned for the current examination cycle to ensure that the licensee addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed two individual remedial training plans.
- Conformance with Examination Security Requirements (10 CFR 55.49): The inspectors conducted an assessment of the licensee's processes related to examination physical security and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors reviewed the facility licensee's examination security procedure, and observed the implementation of physical security controls (e.g., access restrictions and simulator input/output controls) and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the inspection period.
- Conformance with Simulator Requirements (10 CFR 55.46): The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements. The inspectors reviewed a sample of simulator performance test records (e.g., transient tests, malfunction tests, post-event tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy corrective action process to ensure that simulator fidelity was being maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions, as well as on nuclear and thermal hydraulic operating characteristics.
- Conformance with Operator License Conditions (10 CFR 55.53): The inspectors reviewed the facility licensee's program for maintaining active operator licenses to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators, and which control room positions were granted watch-standing credit for maintaining active operator licenses. Additionally, medical records for six licensed operators were reviewed for compliance with 10 CFR 55.27.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- AFW system.

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

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components/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 samples as defined in IP 71111.12–05.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- emergent, high risk work to downpower the unit and repair moisture separator drain tank level control valve CV–0608;
- yellow operational and fire risk for 1–1 DG maintenance window;
- maintenance activities during the week of March 7–11, 2016, concurrent with emergent repairs on the 1–1 DG fuel oil header pressure control valve; the air supply piping to CV–0937, component cooling water inlet control valve to the shutdown cooling heat exchangers; and primary makeup tank makeup control valve CV–2008;
- maintenance activities during the week of April 21–25, 2016, concurrent with emergent repairs to the control room ventilation boundary; and
- emergent troubleshooting on the containment instrument air system low pressure alarm.

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 during this inspection 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:

- missed TS limiting condition for operation entry for breaker 52–1214 during maintenance;
- 1–2 DG service water pipe wall thinning;
- charging system cooling water flow indicators were calculated with non-conservative weights in the stress package analysis of the charging system piping; and
- past operability evaluations of issues discovered during 'B' AFW pump maintenance.

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 four samples as defined in IP 71111.15–05.



b. Findings

One licensee-identified NCV of very low safety significance was identified and is documented in Section 4OA7 of this report.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following modification:

- Track alley back wall modifications for dry fuel storage activities.

The inspectors reviewed the configuration changes and associated 10 CFR 50.59 and 72.48 safety evaluation screenings against the design basis, the UFSAR, and the TSs, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modification was installed as directed and consistent with the design control documents; the modification operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modification did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one permanent plant modification sample as defined in IP 71111.18–05.

b. Unresolved Item: Design Review of Modification to Track Alley Wall for Dry Fuel Storage Activities

Introduction: The inspectors identified a unresolved item (URI) associated with the design review of a modification to the Track Alley wall for dry fuel storage (DFS) campaign activities. Specifically, the licensee is currently revising the process applicability determination (50.59 and 72.48 screenings), and reviewing any necessary actions, associated with altering the newly modified wall in support of upcoming DFS campaign activities. The wall, a protective barrier with safety functions per the UFSAR, in its newly modified condition, will be altered when the steel plate covering the opening cut into it will be raised to accommodate the DFS transporter. The DFS campaign is currently on hold pending resolution of other issues.

Description: In January 2016, the licensee began work on an engineering change to permanently modify the west wall of Track Alley in order to accommodate the new transporter used for moving the casks associated with the dry fuel storage campaign. This modification removed a section of the reinforced concrete wall by cutting out an opening approximately 9 feet wide by 4 feet high by 18 inches deep into the existing wall. A three inch thick steel plate was mounted onto vertical rails which can slide down to cover the window cut into the wall and raised to open the window for when the transporter is brought into Track Alley.

The west wall of Track Alley is also the east wall of the Technical Support Center (TSC). This wall is designed to withstand seismic, high wind, and tornado missile loads. It also serves as a radiation protection barrier for personnel in the TSC during emergency situations. The permanent modification of cutting the opening in the wall and installing the steel plate, to provide equivalent protection of the 18 inches of concrete that were cut out, was evaluated in Engineering Change 59170 and calculation EA-EC59170-01. The inspectors reviewed these documents, the supporting process applicability determination (50.59 screening), and risk assessment of implementing the design change.

During this review, the inspectors identified that the licensee did not assess the alteration of the wall, a protective barrier with safety functions per the UFSAR, when the steel plate covering the window would need to be raised to accommodate the DFS transporter. The inspectors questioned this condition and the licensee subsequently completed a process applicability determination (PAD) form (72.48 and 50.59 screening). When reviewing the PAD, the inspectors questioned the licensee's underlying assumption that moving the steel plate to uncover the window was considered to be in support of a maintenance activity and, hence, screened out of the 50.59 process, including not requiring certain compensatory actions for the wall's safety functions during the period of time in which the opening was exposed. At the end of the inspection period the licensee was reviewing their assessment. Once their review is completed, including any changes that may be made, the inspectors will re-assess their evaluation and determine what actions, if any, will need to be accomplished in support of the DFS campaign. Since the campaign is on hold, a URI is being opened to track resolution of this issue. **(URI 05000255/2016001-01, Design Review of Modification to Track Alley Wall for Dry Fuel Storage Activities)**

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- 1-1 DG test start following replacement of SV-1480, 1B air start motor inlet valve;
- 1-1 DG test start following air start system maintenance (second time);
- MO-7A-1, 1-1 DG technical specification surveillance test, following its biennial maintenance window;
- RO-145 and T-186, 'B' AFW pump surveillance tests, following the 'B' train maintenance window;
- QO-21C and RO-97, 'C' AFW pump surveillance tests, following the 'C' train maintenance window; and
- QO-20B, 'B' low pressure safety injection pump surveillance test, following maintenance.

These activities were selected based upon the SSC's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed, testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational

readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constituted six post-maintenance testing sample as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- QO-1, safety injection testing (routine);
- QI-4, pressurizer low pressure safety injection system initiation functional check (routine);
- QO-14B, 'B' service water pump (inservice test);
- RE-137, Bus 1C undervoltage and time delay relay calibration (routine); and
- QI-3, reactor protection matrix logic tests (routine).

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 for Mechanical Engineers (ASME) 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 four routine surveillance testing samples and one in-service test 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 preparedness drill on March 30, 2016, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the control room simulator, Technical Support Center, and the Emergency Operation Facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the

licensee staff in order to evaluate the critique and to determine 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**

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

.1 Radiological Hazard Assessment (02.02)

a. Inspection Scope

The inspectors assessed whether changes to the station's radiological profile due to operating protocols, primary chemistry changes, and plant modifications were adequately addressed in the licensee's Radiation Protection Survey Program. The inspectors conducted walkdowns of various locations and reviewed surveys to evaluate radiological conditions.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

.2 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors assessed whether workers were adequately informed of radiological hazards present through radiation work permits, alarming dosimeter setpoints, area postings, and labelling of containers.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

.3 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors determined whether workers and materials were adequately assessed for radioactive contamination before leaving the radiologically controlled

area(s). Additionally, the inspectors assessed whether sealed sources were adequately identified, stored, and did not leak.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

.4 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors observed work in progress and reviewed processes to ensure adequate implementation of:

- Radiological controls;
- Radiation protection job coverage;
- Dosimeter selection and placement;
- Airborne radioactive materials monitoring and controls; and
- Controls for highly activated materials stored in the spent fuel pool.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

.5 High-Radiation Area and Very-High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors observed the physical controls for high-radiation areas and very-high radiation areas. The inspectors ensured the controls prevented an individual from gaining unauthorized access to very-high radiation areas.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

Introduction: A self-revealing finding of very-low safety significance (Green) and an associated NCV of TS 5.7.1, “High-Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation,” was identified. Specifically, the movement of a bag of radioactive material caused an unintended area to become a high-radiation area without the proper posting and barricades.

Description: On September 27, 2015, a bag of radioactive material trash was generated while performing maintenance work inside an area within containment that was posted and controlled as a high-radiation area. The radiation protection technician (RPT) used a marker to write “Trash \*10R/500 9/27/15” on the bag. This bag was placed under some lead shielding in the area to help reduce general area dose rates. No log entries were made to ensure other radiation protection personnel were aware of this high dose

rate bag. On October 13, 2015, RPTs and a radioactive waste handler (RWH) noticed the bag when removing lead shielding from the area. These individuals moved the bag to another, less occupied, location in containment that was still within the high-radiation area boundaries. On October 14, 2015, RPTs and a RWH again noticed the bag and notified supervision. These individuals then left containment to gather materials and to prepare for the removal of the bag from containment. Shortly after the RPTs and RWH left containment, a nuclear controls operator, who had been instructed to remove any trash from containment in preparations for containment closeout, moved the bag from containment to the personnel air lock, which was not within the established high-radiation area boundaries. A senior reactor operator (SRO) who was consolidating trash at the personnel air lock noticed that a nearby area radiation monitor went into alarm and questioned a nearby RPT about it. The RPT stated that testing of area radiation monitors had been in progress and to disregard the alarm, so no action was taken. The SRO subsequently received a dose rate alarm on his electronic dosimeter with a maximum dose rate of 2160 mrem/hr. The SRO notified an RPT of the alarm and shortly thereafter, RPTs took control of the bag and placed it in a posted and controlled locked high-radiation area. Follow-up surveys on the bag indicated dose rates of 290 mrem/hr at 30 cm and the licensee's review of the event determined that the area radiation monitor did go into alarm due to the bag of radioactive material.

Analysis: The inspectors determined that work activities causing an unintended area to become a high-radiation area without the proper posting and barricades was within the licensee's ability to foresee and correct and should have been prevented, therefore constituting a performance deficiency. The performance deficiency was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the performance deficiency impacted the Program and Process attribute of the Occupational Radiation Safety cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. The high dose rate trash bag being removed from a high-radiation area and being placed in an area that was not posted or barricaded as a high-radiation area removed a barrier intended to prevent workers from receiving unexpected dose.

The finding was determined to be of very low safety significance (Green) in accordance with IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process," dated August 19, 2008. This assessment was based on: (1) it did not involve as-low-as-reasonably-achievable planning or work controls, (2) there was no overexposure, (3) there was no substantial potential for an overexposure, and (4) the ability to assess dose was not compromised.

The inspectors concluded that the cause of the finding involved a cross-cutting component in the Human Performance area of Teamwork because the individuals and work groups involved did not communicate or coordinate their activities within and across organizational boundaries to ensure nuclear safety was maintained. Specifically, radiation protection did not appropriately communicate the hazards associated with the bag to other personnel and operations department personnel did not conduct a sufficient pre-job brief to ensure individuals understand what items could and could not be removed from containment [H.4].

Enforcement: TS 5.7.1, "High-Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface

Penetrated by the Radiation,” requires in part that entryways to such areas shall be barricaded and conspicuously posted as high-radiation areas.

Contrary to the above, on October 14, 2015, an un-posted and un-barricaded high-radiation area was created when a high dose rate bag of radioactive material was removed from containment. Upon identification, work was stopped and RPTs transferred the bag of radioactive material to a posted and controlled locked high-radiation area. Because this violation was of very low safety significance and was entered into the licensee’s CAP as CR–PLP–2015–05019, this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. **(NCV 05000255/2016001–02, Movement of Radioactive Material Results in an Unposted and Un-Barricaded High-Radiation Area)**

.6 Radiation Worker Performance and Radiation Protection Technician Proficiency (02.07)

a. Inspection Scope

The inspectors observed radiation workers and radiation protection technicians to assess whether they were aware of the radiological conditions in their workplace and whether their performance reflected the radiological hazards that were present.

These inspection activities constituted one sample as defined in IP 71124.01–05.

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems (02.08)

a. Inspection Scope

The inspectors assessed whether problems associated with radiation surveys, radiological controls, and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution. For selected issues, the inspectors assessed the appropriateness of the corrective actions. Additionally, the inspectors reviewed events that were caused by radiation worker error or radiation protection technician error to assess whether the corrective action approach taken by the licensee was adequate to resolve the reported problems.

These inspection activities constituted one sample as defined in IP 71124.01–05.

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**

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index—Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI)—Heat Removal System Performance Indicator (PI) (MS08) for the period from the first quarter 2015 through the fourth 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, condition reports, event reports, MSPI derivation reports, and NRC inspection reports for the period of January 2015 through December 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, whether the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's CAP 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-Heat Removal system sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Unplanned Scrams Per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams Per 7000 Critical Hours PI (IE01) for the period from the first quarter 2015 through the fourth 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, condition reports, event reports, and NRC inspection reports for the period of January 2015 through December 2015 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP 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 Unplanned Scrams Per 7000 Critical Hours sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI (IE04) for the period from the first quarter 2015 through the fourth 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, condition reports, event reports, and NRC inspection reports for the period of January 2015 through December 2015 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CAP 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 Unplanned Scrams with Complications 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 inspection procedures 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 condition report packages.

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

b. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues: Unqualified Members of the Fire Brigade

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors reviewed a corrective action item documenting the failure of three Fire Brigade members to participate in the required Fire Brigade drills during calendar year 2015. The licensee identified on January 5, 2016, that these qualified Fire Brigade members did not participate in two drills as required by EN-TQ-125, "Fire Brigade Drills." Qualifications for two Fire Brigade members were retroactively suspended from January 1, 2016, until participation in a successful drill was completed on January 6, 2016. It was determined that Fire Brigade qualifications were no longer needed for the third member.

The inspectors reviewed non-licensed operator shift staffing from January 1, 2016, to January 6, 2016, to determine if the minimum required staffing was impacted while the three brigade members had suspended qualifications. The inspectors questioned the Fire Brigade staffing during day shifts on January 4, 2016 and January 5, 2016. Specifically, during day shift on January 4, 2016, six NPOs were members of the Fire Brigade required contingent. One individual was designated as the Safe Shutdown NPO and the remaining five were designated as Fire Brigade members. Two of those five designated Fire Brigade members had their qualifications retroactively suspended on January 5, 2016. On January 5, 2016, seven NPOs were staffed on day shift, with one NPO designated as Safe Shutdown and the remaining six designated as Fire Brigade members. Two of the designated Fire Brigade NPOs were again those who had their qualifications retroactively suspended. Approximately halfway through the day shift on January 5, 2016, the two NPOs who had their qualifications retroactively suspended were notified of the situation. Upon notification, those NPOs turned over their Fire Brigade positions to qualified NPOs and took over roles for the rest of the shift that did not require Fire Brigade qualification. The licensee documented this issue in the CAP as CR-PLP-2016-00198 and performed an apparent cause evaluation (ACE).

The inspectors reviewed the CAP for complete, accurate, and timely documentation of the identified problem. The inspectors identified that the licensee did not effectively evaluate Fire Brigade staffing from January 1, 2016 to January 6, 2016 when three Fire Brigade members had qualifications retroactively suspended until questioned by the inspectors. Additionally, the inspectors reviewed the ACE for identification of the apparent cause of the problem and corrective actions that were appropriately focused to correct the problem. The licensee determined that the apparent cause was the informal tracking of fire drill completion in a spreadsheet that was not updated frequently or communicated to the NPOs whose Fire Brigade qualifications it was tracking. Corrective actions included the Fire Brigade members with lapsed qualifications successfully participating in a drill to requalify and the licensee updating the operations log to specifically delineate the Fire Brigade membership. The licensee also planned to update the tracking method used to track drill completion by making it part of their computer-based learning management system so that each Fire Brigade member is able to view their qualifications. The inspectors concluded, based on the ACE and interviews with licensee staff, that the corrective actions associated with the above issues were timely and appropriately focused to correct the problem.

Documents reviewed are listed in the Attachment to this report.

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

b. Findings

Introduction: An NRC-identified finding of very low safety significance (Green) and an associated NCV of 10 CFR, Part 50, Section 48(c) and the National Fire Protection Association (NFPA) Standard 805 Section 3.4.1 was identified for the failure to meet the minimum staffing requirements for the Fire Brigade on January 4 and 5, 2016. Specifically, two NPOs who had Fire Brigade qualifications suspended stood watch as Fire Brigade members during day shift on January 4, 2016, and approximately one half of day shift on January 5, 2016.

Description: On January 5, 2016, the licensee identified, while reviewing records, that there were three Fire Brigade members who did not participate in the required number of drills during calendar year 2015 per EN-TQ-125, "Fire Brigade Drills." EN-TQ-125, Step 5.3 [2] states, "A sufficient number of Fire Brigade drills will be held annually so that each member and Fire Brigade Leader participates in at least two (2) fire drills annually." Upon discovery, the three Fire Brigade members' qualifications were retroactively suspended from January 1, 2016, until they were able to successfully participate in a drill on January 6, 2016. The inspectors reviewed shift staffing from January 1, 2016 to January 6, 2016 to determine if staffing was impacted while the three brigade members had suspended qualifications. The inspectors identified that during day shift on January 4, 2016 and approximately half of day shift on January 5, 2016, the licensee did not meet the minimum required complement of Fire Brigade members due to the suspension of the qualifications of the aforementioned NPOs.

NFPA 805, Section 3.4.1, "On-Site Fire-Fighting Capability," states, in part, that a fully staffed, trained, and equipped fire-fighting force shall be available at all times to control and extinguish all fires on site. This force shall have a minimum complement of five persons on duty. Additionally, EN-OP-115, "Conduct of Operations," Attachment 9.6, Section 1, states, "At a minimum, five qualified Fire Brigade members shall be available

from the Operations shift to respond to a fire at all times. The designated Safe Shutdown NPO cannot be used to meet this requirement.” On January 4, 2016, six NPOs were staffed on day shift. One individual was designated as the Safe Shutdown NPO and the remaining five were designated as Fire Brigade members. Two of those five designated Fire Brigade members had their qualifications retroactively suspended on January 5, 2016. On January 5, 2016, seven NPOs were staffed on day shift, with one NPO designated as the Safe Shutdown NPO and the remaining six NPOs designated as Fire Brigade members. Two of the designated NPOs were again those who had their qualifications retroactively suspended. Approximately halfway through the day shift on January 5, 2016, the two NPOs who had their qualifications retroactively suspended were notified of the situation. Upon notification, those NPOs turned over their Fire Brigade positions to qualified personnel and took over roles for the rest of the shift that did not require Fire Brigade qualification. The licensee entered the issue into their CAP as CR–PLP–2016–00198 and successfully completed a drill on January 6, 2016, to re-qualify two of the three Fire Brigade members. It was determined that the third individual no longer required Fire Brigade member qualification.

Analysis: The inspectors determined that the failure to properly maintain minimum Fire Brigade staffing requirements was contrary to the requirements of 10 CFR 50.48(c) and NFPA 805 Section 3.4.1 and was a performance deficiency. The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612 "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012, because the performance deficiency was associated with the Protection Against External Factors 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). Specifically, there could have been an impact to the Fire Brigade's ability to respond to a fire because the licensee did not meet the staffing requirements. 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 inspectors reviewed the Mitigating Systems Screening Questions in IMC 0609, Appendix A, Exhibit 2, and answered "Yes" to Question D.1, with no items checked in D.1.a. IMC 0609, Appendix A, Exhibit 2 directed the inspectors to IMC 0609, Appendix M, if none of the boxes under D.1.a were checked. In accordance with IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," dated April 12, 2012, the finding was determined to be of very low safety significance (Green). To make this determination, the inspectors reviewed qualitative circumstances associated with the finding, including successful drill performance on January 6, 2016, and the fact that the two individuals who had suspended qualifications were unaware, at the time, that they did not meet the drill training requirements and would have responded to an actual fire. The Fire Brigade was not called upon to respond to a fire during the shifts in question.

The finding had a cross-cutting aspect of Documentation in the Human Performance cross-cutting area because drill completion was tracked informally by the Fire Marshall and was not accessible to Fire Brigade members to individually track drill completion [H.7].

Enforcement: Palisades Nuclear Plant Renewed Facility Operating License Condition 2.C(3) requires the licensee to implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(c), "National Fire

Protection Association Standard NFPA 805,” as approved in the safety evaluation dated February 27, 2015. NFPA 805 Section 3.4.1, “On-Site Fire-Fighting Capability,” states, in part, that a fully staffed, trained, and equipped fire-fighting force shall be available at all times to control and extinguish all fires on-site. This force shall have a minimum complement of five persons on duty.

Contrary to the above, during day shift on January 4, 2016, and approximately one-half of day shift on January 5, 2016, the licensee failed to maintain the minimum Fire Brigade staffing per NFPA 805, as implemented by station procedures. Specifically, two of the required five on-shift Fire Brigade members had their qualifications suspended when it was identified that they did not participate in the required number of annual Fire Brigade drills in calendar year 2015. Because this violation was of very low safety significance and it was entered into the licensee’s CAP as CR–PLP–2016–00198, “NRC Resident Question on Minimum Fire Brigade Manning,” it is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. **(NCV 05000255/2016001–03, Failure to Meet the Minimum Staffing Requirements of the Fire Brigade)**

40A3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 Feedwater Transient Due to Misaligned Fuse

a. Inspection Scope

The inspectors reviewed the operating crew’s response to a feedwater transient on December 23, 2015. At approximately 4:02 p.m., operators observed reactor power increasing, along with the loss of indication for seven valves associated with the condensate and feedwater system. Operators entered abnormal operating procedures for main feedwater transients and commenced a rapid power reduction to ensure licensed power limits were not exceeded. The plant was stabilized at approximately 95 percent power. During troubleshooting of the issue, a fuse holder was identified to be not fully seated. This fuse holder was associated with control power that provided position indication for the seven valves mentioned above. It also supplied control power to position two control valves that supplied additional water to the moisture separator drain tank. The loss of the control power to these two valves caused them to fail open, initiating the feedwater transient. The fuse holder was removed and inspected prior to reinstallation in the system.

The licensee performed an ACE and determined that the direct cause of the loss of control power was due to the fuse holder not being properly seated, allowing it to back out of its socket. The licensee conducted an extent of condition walkdown for similar fuse holders in the control room panels to ensure correct installation and alignment. The licensee also implemented training on correct installation of fuse holders. 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 (Closed) Unresolved Item 05000255/2013005–07, Periodic Design Basis Testing of Safety-Related Electrical Components

As documented in NRC Inspection Report 05000255/2013005–07, the inspectors identified that it appeared that the licensee was not testing safety-related electrical components to verify their design basis capacity in accordance with Institute of Electrical & Electronics Engineers (IEEE) Standard 336–1971, and Regulatory Guides 1.30 and 1.33. During follow-up inspection and review, the inspectors noted that the regulatory guides did not contain detailed or specific testing instructions, but only included general guidelines. IEEE–336 included detailed instructions for the installation, inspection, and testing of class 1E power, instrumentation and control equipment at nuclear facilities. While reviewing the applicability section of IEEE–336, the inspectors noted the standard only applied to the initial installation of new equipment or equipment modifications, or modification of power, instrumentation and control equipment, and systems in a nuclear facility from the time the equipment was turned over for installation until it was declared operable for service; and did not apply to periodic testing and maintenance following initial installation. Therefore, the inspectors concluded the existing periodic testing and maintenance activities performed by the licensee on installed relays and motor starter contactors were adequate. No violation of NRC requirements were identified. This URI is closed.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On April 7, 2016, 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 from the biennial licensed operator requalification program area assessment with Mr. O. Gustafson, Director, Performance Improvement & Regulatory Affairs, and his staff on February 12, 2016;
- The licensed operator annual operator test results with Mr. T. Davis, Regulatory Assurance, via e-mail on February 22, 2016; and
- The inspection results for the radiological hazard assessment and exposure controls area with Mr. D. Nestle, Radiation Protection Manager, on February 12, 2016.

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.

#### 40A7 Licensee-Identified Violations

The following two violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- Title 10 CFR 50.54(m)(2)(iii), "Condition of Licenses," states that when a nuclear power unit is in an operational mode other than cold shutdown or refueling, as defined by the unit's technical specifications, each licensee shall have a person holding a senior operator license for the nuclear power unit in the control room at all times. TS 5.2.1 states in part, that during any absence of the Shift Supervisor from the control room while the plant is in Mode 1, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. Contrary to the above, at approximately 2:00 a.m. on September 2, 2015, with the unit in Mode 1, the Command SRO left the control room without another SRO being present in the control room and without turning over the command function. A few minutes prior to the event, the shift Command SRO turned over to the Shift Technical Advisor (STA) the Command SRO function of the control room so that the shift Command SRO could take a break outside the control room boundary. A minute or so after the STA (who had the Unit Command SRO function at the time) left the control room, a control room reactor operator observed that there were no SROs in the control room and summoned the Shift Manager from an office across the hall to the control room. The Shift Manager then assumed the Command SRO function and the STA was called back to the control room. This issue was identified by the licensee on September 2, 2015, and documented in CR-PLP-2015-03637, "The SRO with Command and Control Momentarily Left the Control Room." There were no risk-significant plant evolutions in progress and no adverse reactor plant operations occurred during the SROs absence. The STA was relieved from shift responsibilities until corrective actions were taken.

The inspectors screened the issue using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power." The inspectors reviewed the screening questions under all three Cornerstones and all of the logic questions did not apply, therefore the finding screened as having a very low safety significance (Green).

- TS Limiting Condition for Operation (LCO) 3.0.6 states, in part, that when a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered; only the support system LCO actions are required to be entered. TS LCO 3.0.6 further specifies that an evaluation shall be performed in accordance with TS 5.5.13, "Safety Function Determination Program." Palisades Administrative Procedure 4.11, "Safety Function Determination Program," step 5.4.3 requires documentation of entry into TS LCO 3.0.6 for the inoperable supported system in the Operations Log. Contrary to the above, on January 19, 2016, the licensee failed to document entry into TS LCO 3.0.6 in the operations log when work was commenced on breaker 52-1214, Motor Control Center (MCC) 22 and MCC-24 480 Volt feeder breaker. The licensee identified this issue when a similar condition was entered on January 22, 2016 and documented the missed entry into TS LCO 3.0.6 in



CR-PLP-2016-00413, "Operations Failed to Log Entry into LCO 3.8.1B and LCO 3.5.2B or LCO 3.0.6." The licensee provided coaching to the individuals involved.

The inspectors screened the issue using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 2, "Mitigating System Screening Questions," and answered "No" to all the questions. Therefore, the finding screened as having very low safety significance (Green).

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

A. Vitale, Site Vice President  
A. Williams, General Manager Plant Operations  
T. Mulford, Operations Manager  
B. Baker, Operations Manager – Shift  
J. Borah, Engineering Manager, Systems and Components  
E. Chatfield, Employee Concerns Coordinator  
R. Craven, Production Manager  
T. Davis, Licensing Specialist  
B. Dotson, Acting Regulatory Assurance Manager  
J. Erickson, Licensing Specialist  
D. Nestle, Radiation Protection Manager  
O. Gustafson, Director of Regulatory and Performance Improvement  
J. Hardy, Acting Director of Regulatory and Performance Improvement  
J. Haumersen, Site Projects and Maintenance Services Manager  
G. Heisterman, Maintenance Manager  
M. Lee, Operations Manager – Support  
D. Lucy, Outage Manager  
D. Malone, Emergency Planning Manager  
W. Nelson, Training Manager  
D. Nestle, Radiation Protection Manager  
K. O'Connor, Engineering Manager, Design and Programs  
C. Plachta, Nuclear Independent Oversight Manager  
P. Russell, Site Engineering Director  
M. Schultheis, Performance Improvement Manager  
M. Soja, Chemistry Manager  
J. Tharp, Security Manager  
C. Smith, Acting Security Manager  
F. Korfius, Training Superintendent

#### Nuclear Regulatory Commission

E. Duncan, Chief, Reactor Projects Branch 3

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000255/2016001-01	URI	Design Review of Modification to Track Alley Wall for Dry Fuel Storage Activities (Section 1R18)
05000255/2016001-02	NCV	Movement of Radioactive Material Results in an Unposted and Un-Barricaded High-Radiation Area (Section 2RS1.5)
05000255/2016001-03	NCV	Failure to Meet the Minimum Staffing Requirements of the Fire Brigade (Section 4OA2)

### Closed

05000255/2016001-02	NCV	Movement of Radioactive Material Results in an Unposted and Un-Barricaded High-Radiation Area (Section 2RS1.5)
05000255/2016001-03	NCV	Failure to Meet the Minimum Staffing Requirements of the Fire Brigade (Section 4OA2)
05000255/2013005-07	URI	Periodic Design Basis Testing of Safety-Related Electrical Components (Section 4OA5.1)

### Discussed

None

## LIST OF DOCUMENTS REVIEWED

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

### 1R01 Adverse Weather Protection

- Administrative Procedure 4.00, Operations Organization, Responsibilities and Conduct, Revision 58
- AOP-38 Basis, Acts of Nature, Revision 5
- AOP-38, Acts of Nature, Revision 5
- CR-PLP-2015-02482, Tracking Condition Report for Follow-Up Items Associated with the NRC Audit on FLEX/SFPI Implementation, June 16, 2015
- CR-PLP-2015-05343, NPO Found MV-VA10105 with a Broken Handwheel, October 27, 2015
- CR-PLP-2015-05345, NPO Found That the Fan for VUH-18 Would not Start, October 27, 2015
- CR-PLP-2015-05346, NPO Found That MV-VA101116 was Very Hard to Operate, October 27, 2015
- CR-PLP-2015-05394, The Positioner for the Fresh Air Damper, PO-3009G, to be Disconnected From the Operating Shaft, October 29, 2015
- CR-PLP-2016-00033, Battery Tender for the Power Dolly Appeared Not to be Working, January 4, 2016
- CR-PLP-2016-00039, No Temporary Heaters Have Been Placed Inside the B Cooling Tower Travelling Screens Enclosure, January 5, 2016
- CR-PLP-2016-00062, NPO Found That the Flex Light Tower "Block Heating" Did Not Appear to be Working, January 5, 2016
- CR-PLP-2016-00088, T-2 Level Transmitter LT-2022 Isolation Valve Underside of the Lagging Has an Approximately 3 Inch Air Gap Where the Caulk has Worn Off, January 6, 2016
- CR-PLP-2016-00151, The Right Light on EC-100A Panel Lit Dimly, January 10, 2016
- CR-PLP-2016-00156, Caulking on Seam of Lagging and Around Conduit Coming Out of LT-2020, January 11, 2016
- CR-PLP-2016-00157, Caulking At Seam of Lagging was Degrading on Piping Coming Out of T-2 Condensate Storage Tank, January 11, 2016
- CR-PLP-2016-00958, During Work Order 0254608 Reactor Protective System New Power Supply Replacement, High Pressurizer Pressure Failed, February 24, 2016
- CR-PLP-2016-00964, A Fatigue Rule Waiver Was Initiated IAW EN-OM-123, February 24, 2016
- CR-PLP-2016-00965, Protected Area Zone 13 Was Removed From Service Due to Frequent Alarms, February 24, 2016
- CR-PLP-2016-00966, Protected Area Zone 6 Was Removed From Service Due to Frequent Alarms, February 24, 2016
- CR-PLP-2016-00967, Protected Area Zone 18 Was Removed From Service Due to Constant Tamper Alarm, February 24, 2016
- DBD-5.03, Emergency Diesel Generator Performance Criteria, Revision 9
- EN-OM-123, Fatigue Management Program, Revision 12
- Entergy Weather Contingency Plan, September 25, 2015, Revision 2

- SOP-14, Circulating Water and Chlorination Systems, Revision 82
- SOP-15, Service Water System, Revision 61
- SOP-23, Plant Heating System, Revision 51
- SOP-34, Palisades Plant Computer (PPC) System, Revision 34
- WO 52591774 01, Perform Cold Weather Check Sheets
- WO 52604436, T-10A; Fuel Oil Sampling for Off Site Analysis
- WO 52653087-01, Ops 348; Operations Check P-S and Recirculation

#### 1R04 Equipment Alignment

- Admin 4.02, Control of Equipment, Revision 75
- Admin 4.02, Attachment 3, Control of Equipment, Revision 75
- CR-PLP-2014-03445, Charging Pump P-55A Exceeded the Maximum Permissible Steady State Speed, August 18, 2015
- CR-PLP-2015, During Performance of MO-7A-1, EDG 1-1 Monthly Surveillance Test it was Noted That Service Water Flow to 1-1 EDG Was Low Out of Service, October 13, 2015
- CR-PLP-2015-00316, During the Replacement of the K-6B (Emergency Diesel Generator 1-2) Turbocharger, it was Discovered That the Support to Manifold Bracket was Broken, January 20, 2015
- CR-PLP-2015-00332, TI-1479, Diesel Generator K-6B Exhaust Temps was Found Out of As-Found and As-Left Tolerance Only at 100%, January 20, 2015
- CR-PLP-2015-00346, Filter-88 (EDG 1-2 K-6B Fuel Oil Booster Pump Suction Filter) Selector Handle is Leaking Fuel Oil, January 21, 2015
- CR-PLP-2015-00378, DG 1-1L Cylinder Jacket Water Return Riser has a Small Water Leak From Header Clamp Joint, January 22, 2015
- CR-PLP-2015-00389, K-6B, EDG 1-2 Starting Time of 13.2 Seconds, January 22, 2015
- CR-PLP-2015-00734, High Pitched Harmonic Vibration Noise was Observed During the Operation of the 1-2 Diesel Generator, February 16, 2015
- CR-PLP-2015-00763, PI-1489, K-6B Starting Air Pressure Indicator was Found to be Reading 161 psig, Which is Above the High Spec, February 17, 2015
- CR-PLP-2015-00859, PI-1489, K-6B Starting Air Pressure Indicator, was Found to be Reading 161 psig, Which Is Above the High Spec, February 25, 2015
- CR-PLP-2015-01181, During MO-7A-2, EDG 1-2, K-6B, EDG Failed To Start, March 18, 2015
- CR-PLP-2015-01333, Pressure Reading on PI-1490, K-6B Starting Air Pressure Indicator was Found Below Minimum Allowed on E-Soms Rounds, March 31, 2015
- CR-PLP-2015-01485, PI-1490 K-6B Starting Air Pressure Indicator for DG 1-2 at 138 psig, Low Out of Spec, April 10, 2015
- CR-PLP-2015-01740, PI-1490 K-6B Starting Air Pressure Indicator at 136 psig, April 27, 2015
- CR-PLP-2015-01839, During the MO-7A-1 Test Run of the 1-1 DG, Observed Jacket Water Pressure Fluctuations (PI-1482) Higher Than Expected, May 4, 2015
- CR-PLP-2015-02053, During Performance of MO-7A-2 EDG 1-2, Fuel Oil Transfer Pump P-18B Test, P-18A Start To Fill T-25B 1-2 D/G Day Tank, May 18, 2015
- CR-PLP-2015-02238, Replace E-22A (D/G Jacket Water Cooler) if Tube Plugging Limits are Exceeded During the Next Eddy Current Inspection, June 1, 2015
- CR-PLP-2015-02239, Replace E-22B (D/G 1-2 Jacket Water Cooler) If Tube Plugging Limits are Exceeded During the Next Eddy Current Inspection, June 1, 2015
- CR-PLP-2015-02388, While Performing Preventive Maintenance on K-6A, 1-1 Diesel Generator, Binding was Noted on the Fuel Oil Pump for Cylinder 7L, June 9, 2015

- CR-PLP-2015-02444, Tank Pressure for T-31A (D/G 1-1 Air Starting Tank) is Trending High, June 12, 2015
- CR-PLP-2015-02445, Differential Pressure for F-89 (FO Booster Pump P-209A Discharge Filter) is Trending High, June 12, 2015
- CR-PLP-2015-03387, Steady State Speed of P-55A, Charging Pump, was Recorded at 500 RPM, Exceeding the Maximum Permissible Steady State Speed of 495 RPM, August 14, 2015
- CR-PLP-2015-03406, During MO-7A-2 for 1-2 EDG, Three of the Cylinder Petcocks Backed Out of the Cylinder Head While Attempting to Open Them, August 16, 2015
- CR-PLP-2015-03461, During Maintenance of P-55C Discharge Accumulator Checks, the Schrader Valve Required Replacement, August 19, 2015
- CR-PLP-2015-03477, P-55C Charging Pump Has Oil Weeping Out From the Gear Box Gasket, August 24, 2015
- CR-PLP-2015-03593, P-55C Charging Pump Input Shaft Seal on Pump Casing and Shaft Seal on Falk Speed Reducer are Leaking at Severity Level 2, August 30, 2015
- CR-PLP-2015-03692, P-55A Charging Pump Speed Exceeded 495 RPM with P-55A Charging Pump In Service, September 4, 2015
- CR-PLP-2015-03794, EK-0557, Diesel Gen 1-2 Trouble, Annunciated Low Raw Water Pressure, September 12, 2015
- CR-PLP-2015-04334, Limit Torque Operator for MO-0755 Manual Operation Lever did not Stay Engaged, September 26, 2015
- CR-PLP-2015-04541, Walkdown of the Fuel Oil System a Leak was Noted at a Set of Flange Joints, October 1, 2015
- CR-PLP-2015-05312, NRC Noted That PI-1485, DG K-6B Fuel Oil Pressure Indicated 0 While its Sister Gauge on K-6A Read Approximately 40 psig, October 26, 2015
- CR-PLP-2015-05427, Found PI-1490, K-6B Starting Air Pressure Indicator Reading 140 psig, Low Out of Spec, November 1, 2015
- CR-PLP-2015-05429, Service Water Flow to 1-1 EDG was 380 gpm, Required Band is 450-900 gpm, November 2, 2015
- CR-PLP-2015-05623, Found P-52B, Outboard Motor Bearing Oiler Bull's-Eye Level Above its Centerline, November 11, 2015
- CR-PLP-2015-05625, PI-1490, K-6B Starting Air Pressure Indicator is Low Out of Spec for the Third Consecutive Set of Rounds, January 11, 2015
- CR-PLP-2015-05960, Steam Trap St-0520 was Discharging Condensate, December 2, 2015
- CR-PLP-2015-06183, While Priming the Fuel System on K-6A, EDG 1-1 that DPI-1476, K-6A Fuel Oil Differential Pressure Indicator Would Indicate Pressure on Each Stroke of the Hand Pump, December 15, 2015
- CR-PLP-2015-06351, PCV-1490 Low Out of Specification at 137 psig, December 31, 2015
- CR-PLP-2015-3087, Diesel Generator Local Field Current Meter EAI-1213DC was Out of Acceptance Range for As-Found Data, July 23, 2015
- CR-PLP-2016-00064, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the Threaded Reducer on the Inlet to PCV-1479, January 5, 2016
- CR-PLP-2016-00065, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the Threaded Fitting on the Tubing Connecting PI-1483 K-6A Starting Air to the System, January 5, 2016
- CR-PLP-2016-00066, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the Upper Elbow Downstream of MV-DE113, January 5, 2016
- CR-PLP-2016-00067, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from MV-DE113 Packing Retaining Nut, January 5, 2016

- CR-PLP-2016-00068, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the MV-DE111 Packing Retaining Nut, January 5, 2016
- CR-PLP-2016-00069, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the MV-DE107 Packing Retaining Nut, January 5, 2016
- CR-PLP-2016-00070, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak was Identified from the MV-DE619 Drain Cap, January 5, 2016
- CR-PLP-2016-00071, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified from the Threaded Fitting Connect to MV-DE619, January 5, 2016
- CR-PLP-2016-00072, During K-6A Snoop Check 1-1 EDG Air Starting System, Severity Level 2 Air Leak Identified From MV-DE108, January 5, 2016
- CR-PLP-2016-00080, MV-DE131 "D/G 1-1 FO Belly Tank Inlet B/P" Has a Packing Leak, Severity Level 2, January 6, 2016
- CR-PLP-2016-00094, Damage Discovered to SW Union Down Steam of SV-1470, January 6, 2016
- CR-PLP-2016-00096, Fixed Particulate Found on the Top Quarter of SV-1470, SW Union Fitting Downstream During Closeout Inspection, January 6, 2016
- CR-PLP-2016-00107, P-55A Charging Pump Local Seal Leakage Has Risen from 40 ml/min to 160 ml/min, January 6, 2016
- CR-PLP-2016-00169, PCV-1490, EDG 1-2, K-6B Starting Air Control Is Controlling Air Pressure 137 psi, January 11, 2016
- CR-PLP-2016-00170, Starting Air Pressure For The 1-2 EDG Has Been Found Out of Specification, January 11, 2016
- CR-PLP-2016-00294, No Power to 42-2535/CS, D/G 1-1 Room Vent Fan V-24A, January 15, 2016
- CR-PLP-2016-00299, Breaker 52-2535 Is in the Tripped Position and Is Unable to be Reset or Closed, January 16, 2016
- CR-PLP-2016-00343, Multiple Hand Wheels Broken and Loose in the 'B' Pumps
- CR-PLP-2016-00421, 1-2 DG Starting Air Pressure High Out of Specification, January 23, 2016
- CR-PLP-2016-00479, While Performing Work Order 52592528-01 There was What Looked to be Paint Chips in the Oil, January 27, 2016
- DBD-1.04, Chemical and Volume Control System, Revision 7
- DBD-5.01, Diesel Engine and Auxiliary Systems, Revision 7
- M-202, Piping & Instrument Diagram, Chemical & Volume Control System, Sheet 1, Revision 77
- M-202, Piping & Instrument Diagram, Chemical & Volume Control System, Sheet 1A, Revision 64
- M-202, Piping & Instrument Diagram, Chemical & Volume Control System, Sheet 1B, Revision 59
- M-205, Sheet 2, Main Steam and Auxiliary Turbine Systems, Revision 70
- M-207, Sheet 2, AFW System, Revision 41
- M-208, Service Water System, Sheet 1A, Revision 65
- M-209, Sheet 1, Component Cooling System, Revision 68
- M-209, Sheet 3, Component Cooling System, Revision 56
- M-214, Lube Oil, Fuel Oil and Diesel Generator Systems, Sheet 1, Revision 79
- M-220, Sheet 1, Make-Up Domestic Water & Chemical Injection Systems, Revision 100
- SOP-12, AFW system Checklist, Revision 75
- SOP-16, Component Cooling Water System, Revision 47
- SOP-19, Instrument Air System, Revision 65
- SOP-22, Diesel Generators System Checklist, Revision 67

- SOP-22, Emergency Diesel Generators, Revision 67
- SOP-2A, Chemical and Volume Control System, Revision 85
- SOP-2B, Chemical and Volume Control System Purification and Chemical Injection, Revision 51
- Tagout 1C25-1-CCS-003-P-52B Oil
- WO 343051, K-6B; Minor Exhaust Leak on Exhaust Manifold Piping Near 1L
- WO 346921, Replace E-22B Jacket Water Cooler on DG 1-2
- WO 415439, E-22A; 1-1 DG Replace Jacket Water Cooler Contingency
- WO 415440, E-22B; 1-2 DG Replace Jacket Water Cooler Contingency
- WO 430765, P-55A; 'A' Charging Pump, 6 Month Maintenance
- WO 433548, MV-DE631; Valve Leaks By Based Upon Indication
- WO 434625, P-55A; Repack Pump
- WO 435281, V-24A; 52-2535 Breaker for 1-1 DG Ventilation Fan Tripped
- WO 5225070, K-6B; Air Start Motor B Starting Air Instruments
- WO 52590301, K-6A; Air Intake Filter Replace Element
- WO 52605921, K-6A; Snoop Check 1-1 EDG Air Starting System

#### 1R05 Fire Protection

- AOP-39, Internal Plant Flooding Basis, Revision 1
- AOP-39, Internal Plant Flooding, Revision 1
- ARP-12, Fire System Flow Scheme EK-28 (C-47), Revision 60
- ARP-7, Auxiliary Systems Scheme EK-11 (C-13), Revision 95
- CR-PLP-2015-01970, MV-FP282 Fire System Cross Time Has A 10 dpm Packing Leak, May 12, 2015
- CR-PLP-2015-02523, Sprinkler Heads #5, 6, 7 and 10 Had Fire Ratings of 286° F and the Systems Drawings Show A Rating Of 165, June 18, 2015
- CR-PLP-2015-04831, WO 52569283 Replace Sprinklers In Room 116A (1C Switchgear), October 8, 2015
- CR-PLP-2016-00319, Slight Jacket Water Leak Noted at the Threaded Connection for the Jacket Water Heater on the Left Bank During MO-7A-2, January 18, 2016
- CR-PLP-2016-00322, EK-1148 and EK-2811 Received Due to A Fire Sprinkler Actuation in the 1-2 Diesel Generator Room, January 18, 2016
- CR-PLP-2016-00365, ELU-136, Diesel Generator Emergency Lighting Unit, Fast Charge Light is Lit, January 20, 2016
- DBD-7.10 Attachment FA-6, NFPA 805 Fire Safety Analysis – 1-2 Diesel Generator Room, Revision 0
- DBD-7.10 Attachment FA-8, NFPA 805 Fire Safety Analysis – Diesel Generator 1-2 Fuel Oil Day Tank, Revision 0
- DBD-7.10, NFPA 805 Fire Safety Analysis, Revision 0
- EA-EPP-FRE-001, NFPA 805 Fire Risk Evaluations, Revision 1
- EA-FPP-03-001, Analysis of Combustible Loading at Palisades Nuclear Plant, Revision 3
- EAL Basis, Emergency Action Level Technical Bases, Revision 7
- EC 58355, Basis For Acceptability of Fire sprinklers with Different Temperature Ratings in the 1-2 Emergency Diesel Generator Room, Revision 0
- EN-DC-161, Control of Combustibles, Revision 13
- FPIP-4, Fire Protection Systems and Fire Protection Equipment, Revision 36
- FPSP-RO-0, Attachment 5, Diesel Generator 1-1 Room #116 and Diesel Generator 1-2 Room #1116B Sprinkler Head Locations, Revision 9
- PLP-RPT-12-0145, NFPA 805 Nuclear Safety Performance Criteria – Fire Area Transition, Revision 1



- PLP-RPT-12-00048, Engineering Evaluation of Fire Area Boundary Components, Fire Damper Installation, Revision 1
- PLP-RPT-12-0143, Nuclear Safety Capability Assessment Fire Area Analysis Results, Revision 1
- Pre-Fire Plan 13A, Auxiliary Building Main Corridor – North and South, Elevation 590'
- Pre-Fire Plan 23, Turbine Building – North, Elevation 590'
- Pre-Fire Plan 3, 1-D Switchgear Room and North Cableway, Elevation 607'-6"
- Pre-Fire Plan 3, North Penetration Room and North Cableway, Elevation 615'
- Pre-Fire Plan 4, 1-C Switchgear Room, Elevation 590'
- Pre-Fire Plan 5, Diesel Generator 1-1 Room, Elevation 590'/607'/625'
- Pre-Fire Plan 6 & 8/Rooms 116B & 147, Diesel Generator 1-2 and Fuel Oil Day Tank Room/Elevation 590'
- Pre-Fire Plan 6/Room 148 & 149, Diesel Generator 1-2 Room/Elevation 607'
- Pre-Fire Plan 6/Room 349, Diesel Generator 1-2 Room/Elevation 625'
- Pre-Fire Plan 7, Diesel Generator 1-1 Fuel Oil Day Tank Room, Elevation 590'
- Pre-Fire Plans 11 and 12, Battery Rooms, Elevation 607'-6"
- SEP, Site Emergency Plan, Revision 26
- WO 433819, P-2A; "Spare" Refurbished Condensate Pump in Turbine Building Storage Location

#### 1R06 Flood Protection Measures

- CR-PLP-2016-01113, NRC Identified Gap in the Left Side of Watertight Door 142, March 3, 2016
- CR-PLP-2016-01252, NRC Inspector Questioned Height of Standpipes in the 1-1 DG Room, March 11, 2016
- CR-PLP-2016-01253, NRC Inspector Questioned Missing Anchor Bolts in Some Holes in the Sill Plates in Two Doors, March 11, 2016
- CR-PLP-2016-01254, NRC Inspector Questioned Missing Caulking in the Sill Plates in the DG Fuel Oil Day Tank Rooms, March 11, 2016
- MSM-M-16, Inspection of Water Tight Doors, Revision 17

#### 1R07 Annual Heat Sink Performance

- ANATEC-ET-33, Eddy Current Examination of Balance of Plant Tubing, Revision 5
- CR-PLP-2015-02238, Generate a Work Request to Support a Top Ten Action Plan: Replace E-22A If Tube Plugging Limits are Exceeded During the Next Eddy Current Inspection, June 1, 2015
- CR-PLP-2015-05728, NRC Identified During Triennial Heat Sink Inspection That the Value Used for Maximum Allowable EDG Jacket Water Temperature is not Consistent with the Value Specified by the Vendor, November 19, 2015
- CR-PLP-2016-00562, Two Inch Long Area of Metal "Washout" was Seen on Divider Plate Gasket Seating Area During Inspection of East Cover Plate for #31A, February 1, 2016
- CR-PLP-2016-00573, E-22A, D/G 1-1 Jacket Water Cooler, ET Inspection Identified Tubes for Plugging, February 1, 2016
- CR-PLP-2016-00581, Vendor Drawing M-12 Sheet 184, K-6B Emergency Diesel Generator Jacket Water Cooler E-22B Tube Plugging Diagram Doesn't Match the Current Configuration of the Plant, February 2, 2016
- CR-PLP-2016-00959, Disagreement Between SEP-ISI-PLP-002, "ASME Code Boundaries for ASME Section XI Inservice Inspection Program" and SEP-PT-PLP-001, "Inservice

Inspection Pressure Testing Program,” Regarding the ASME Classification of EDG Jacket Water Piping, February 24, 2016

- EC 62697, Calculation No: EA-EC28106-04, Diesel Generator Jacket Water Cooler Tube Plugging, Revision 1
- EN-DC-316, Heat Exchanger Performance and Condition Monitoring, Revision 7
- Master Heat Exchanger Testing Plan, Revision 12
- MO-7A-1, Emergency Diesel Generator 1-1, Revision 92
- Palisades’ Heat Exchanger Life Cycle Management Plan, Revision 7
- PLP-RPT-16-00007, Final Eddy Current Inspection Report, 1-1 K-6A, Emergency Diesel Generator, Revision 0
- SEP-HX-PLP-001, Heat Exchanger Condition Assessment Program, Revision 2
- SOP-22, Emergency Diesel Generators, Revision 67
- System Health Report, Emergency Diesel Generators, Q4 2015
- VEN-M-12, Diesel Generator Jacket Water, Sheet 63, Revision 5
- WO 329290, E-22A; Heat Exchange Replacement
- WO 52216003, 24 Month Preventative Maintenance of Engine and Fuel System
- WO 52485819, K-6A; 24 Month Preventative Maintenance of Aftercooler and Heat Exchangers
- WO 52590437, Equipment # E-22A, 1-1 Diesel Generator Jacket Water Cooler
- WO 52590437, Equipment # E-31A, 1-1 Diesel Generator Lube Oil Cooler

#### 1R11 Licensed Operator Regualification Program

- Admin 4.00, Operations Organization, Responsibilities, and Conduct, Revision 58
- AOP-1, Loss of Load, Revision 0
- AOP-17, Loss of 125 DC Panels, Revision 2
- AOP-24, Steam Generator Tube Leak, Revision 0
- AOP-3, Main Feedwater Transients, Revision 0
- AOP-3, Main Feedwater Transients, Revision 1
- AOP-36, Loss of Component Cooling, Revision 1
- AOP-9, Loss of Bus 1D, Revision 0
- ARP-1, Turbine Condenser and Feedwater Scheme EK-01 (C-01), Revision 73
- ARP-1, Turbine Condenser and Feedwater Scheme EK-01 (C-11), Revision 76
- ARP-7, Auxiliary Systems Scheme EK-11 (C-13), Revision 95
- Certification for Resuming Active License Status
- CR-PLP-2014-01229, Incorrect PCS Manual Valve Tagged, February 10, 2014
- CR-PLP-2014-02008, PCS Reactor Head Vent Valve Found Open After Being Checked Closed, March 9, 2014
- CR-PLP-2014-03689, Emergency Planning Drill Exercise Performance Failure Due to Exceeding Time for EAL Call, July 10, 2014
- CR-PLP-2014-03881, Incorrect Oil Placed in CCW Pump P-52A, July 28, 2014
- CR-PLP-2014-04866, MCC-18 Breaker Incorrectly Tagged in the ON Position, October 8, 2014
- CR-PLP-2015-02831, Boric Acid Recirculation Valve MV-CVC2128 Found Open, July 6, 2015
- CR-PLP-2015-03179, Feedwater Purity Building Acid Spill to FWP Acid Tank T-955A, July 31, 2015
- CR-PLP-2015-04785, Loss of a Bus While Testing Generator Field Breaker, October 7, 2015
- CR-PLP-2015-05019, Unexpected Dose Rate Alarm Handling Radioactive Waste, October 14, 2015
- CR-PLP-2015-05290, Hydrogen Cooler Vents Left Open on Rounds, October 24, 2015

- CR-PLP-2016-00759, SRO Did not Stand Requisite 5 12-Hour Watches as Either CRS or SM in 4<sup>th</sup> Quarter 2015, (NRC Identified), February 11, 2016
- CR-PLP-2016-00771, Licensed Operator Failed to Make Notification of a Medical Condition Required by ANSI 3.4-1983, (NRC Identified), February 11, 2016
- CR-PLP-2016-01412, Two Operators Made Incorrected EAL Call During the Out of the Box Simulator Evaluation, March 23, 2016
- DR #05-084, Model Failure of Contract in HIC-0780A, October 18, 2004
- DR #09-040, Simulator Overhead Lighting, May 21, 2009
- DR #11-023, Obsolete Item: Yokogawa Controllers SLCD-181E are not Available, April 7, 2011
- DR #13-041, Verify the Amount of Rod Withdrawal Required to Control TAVG After Turbine Sync is in Line With The Amount of Rod Withdrawal Used in the Plant for the Turbine Sync on June 26, 2014, July 3, 2014
- DR #14-020, Verify LS-2022 Setpoint for CV-2010 T-2 Fill Valve Operation, October 5, 2015
- DR #14-031, Verify that Bus 1D(1C) Can Be Powered From Startup Power After an Undervoltage Condition has Been Cleared, July 21, 2014
- DR #14-038, Verify That P-55A Low Lube Oil Pressure Time Delay at the New Setpoint of 90 Seconds, January 5, 2015
- DR #14-047, Verify Waste Gas Decay Tank T-68C Pressure Response to Malfunction RM04, July 20, 2015
- DR #14-059, Evaluate Adding a Malfunction for Degraded Primary Coolant Pump Seal Stage, November 18, 2014
- DR #15-047, September 16, 2015 Plant Trip Comparison, October 19, 2015
- DR #15-056, Operators Reporting Lighting in Simulator Dimmer than Control Room, November 16, 2015
- EN-OP-115, Conduct of Operations, Revision 16
- EN-TQ-114, Licensed Operator Requalification Training Program Description, Revision 10
- EN-TQ-202, Simulator Configuration Control, Revision 9
- EOP Supplement 1, Pressure Temperature Limit Curves, Revision 5
- EOP Supplement 12, 'A' Steam Generator SGTR Isolation Checklist, Revision 8
- EOP Supplement 29, Restore Buses 1C, 1D, 1E Power from Offsite Source, Revision 9
- EOP Supplement 4, HSPI and LPSI Flow Curves, Revision 6
- EOP-1.0, Standard Post Trip Actions, Revision 17
- EOP-1.0, Standard Post-Trip Actions, Revision 15
- EOP-2.0, Reactor Trip Recovery, Revision 14
- EOP-4.0, Loss of Coolant Recovery, Revision 24
- EOP-9.0, Functional Recovery Procedure, Revision 22
- Licensed Operator Requalification Job Performance Measures (10 of various subjects)
- Licensed Operator Requalification Simulator Scenarios (4 of various subjects)
- Licensed Operator Requalification Written Exam (2014 NCO1, SRO1)
- List of Simulator Deficiency Reports Closed in the Last 24 Months, dated February 9, 2016
- List of Simulator Open Deficiency Reports, dated February 9, 2016
- List of Simulator Plant Modifications in the Last 24 Months, dated February 9, 2016
- Nuclear Independent Oversight Monthly Functional Area Summary Reports, September and October 2015
- O2C Report, February 9, 2016
- PLLP-LOR-MEDICALHOUR, Revision 1
- PNF-17-SES, Simulator Exam Scenario SES-216, Revision 0
- PNT 18.0, Palisades Simulator Configuration Management, Revision 3
- Quality Assurance Audit Report QA-19-2014-PLP-1, April 23, 2014
- Quality Assurance Surveillance Report 2014-PLP-003, December 11, 2014

- Quality Assurance Surveillance Report 2015–PLP–008, November 10, 2015
- Remedial Training Packages (Various)
- RT–191, Startup Physics Test Program, September 29, 2015
- Simulator Core Test Records, Various
- Simulator Deficiency Report 14–030, SG Pressures OOS High at 48% Power, May 19, 2014
- Simulator Exam Scenario–213, Revision 0
- Simulator Post Event Test Records, Various
- Simulator Scenario Based Testing Records, Various
- Simulator Steady State Test Records, Various
- Simulator Transient Test Records, Various
- Site Emergency Plan Supplement 1 – EAL Wall Charts, Revision 3
- Site Emergency Plan Supplement 1 Wall Chart
- SOP–10, Extraction and Heater Drain System, Revision 38
- SOP–24, Ventilation and Air Conditional System, Revision 69
- SOP–30, Station Power, Revision 75
- SOP–36, Reactor Protective System and Anticipated Transient Without Scram System, Revision 13
- Task Qualification Matrix for RO's and SRO's, February 10, 2016

#### 1R12 Maintenance Effectiveness

- CR–PLP–2014–05477, During RO–127, P–8B, AFW Pump Overspeed Trip Mechanism Tripped, November 14, 2014
- CR–PLP–2015–05403, During Boroscope Inspection it was Verified that Debris from Rust Scale Were Found Below the Check Valve Assembly, October 30, 2015
- CR–PLP–2015–05405, While Performing Preventative Maintenance Work Order 52626624–01 it was Discovered Minor Paint Chips in Drain and Around Area, October 30, 2015
- CR–PLP–2016–00716, While Performing Corrective Maintenance on CK–F@415, the Valve Is Stuck in the Closed Position, February 9, 2016
- CR–PLP–2016–00720, While Performing Corrective Maintenance on CK–F@416, Found the Plug on this Lift Piston Check Valve Stuck in position, February 9, 2016
- CR–PLP–2016–00731, While Performing Maintenance Under Work Order Number 408644 Task 01 Procedure Number FWS–M–6 Found An Unsatisfactory Condition, February 10, 2016
- CR–PLP–2016–00735, While Performing Bearing PM on K–8 Auxiliary Feed Pump Turbine, Results Were not Satisfactory on the Pump End Bearings, February 10, 2016
- CR–PLP–2016–00747, K–8 Auxiliary Feed Pump Turbine Bearing, While Performing Inspections on the Outboard End we Found the Results to Be Unsatisfactory, February 10, 2016
- CR–PLP–2016–01116, CV–2008 PMU Tank T–81 M/U was not able to be Manually Stroked, March 3, 2016
- CR–PLP–2016–01189, Steam Driven AFW Pump Train P–8B Has Exceeded 75% of its Maintenance Rule Availability Performance Criteria, March 8, 2016
- CR–PLP–2016–01400, AFW System is Considered Near (a)(1), March 22, 2016
- EC Reply 62921, K–8: Review of the Results of the Bearing Crush Check for the Turbine Driven AFW Pump
- EC Reply, EC No. 63907, Acceptability of Measured Clearance Between Hand Trip Lever and Shoulder Stud of the AFW Pump P–8B Turbine Driver K–8 Steam Chest Assembly, Revision 0
- EC–55520, Overspeed Trip Setting Increase and Trip Pin to Plunger Clearance Adjustment of the Steam Driven AFW Pump (P–8B) Turbine Driver K–8 in Accordance with Manufacturer Recommended Values
- EN–DC–205, Maintenance Rule Monitoring, Revision 5

- ETSL-T-2012, Spurious Trips on YR Turbines, August 1, 2007
- OE-NOE-2014-00064, INPO-IER-L3014-4S, September 17, 2014
- Palisades Maintenance Rule Performance Indicators, AFW system, October 29, 2015
- PLP-RPT-12-00026, "EGAD-EP-10, Palisades Maintenance Rule Scoping Document," Revision 0
- PMCR #190524, CV-0736 & CV-0737 PM Strategy
- PMCR #69960, VOP-0727/0749; Actuator Replacement to ISY
- PMCR 219844, ST-0522B, Inspect and Repair PM
- SOP-12, Feedwater System, Revision 76
- System Health Report, AFW System, Q4-2015
- WO 235764, CK-FW741, HLM Repair Leal at Hinge Pin Cover
- WO 304084; CV-0737A; Slight Packing Leak, CR-PLP-2012-06037>52326023 (MDM)
- WO 52436104, CV-0737A, Perform Valve Diagnostics

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

- Admin 4.02, Attachment 3, Risk Management and Risk Monitoring, Revision 75
- Admin 4.02, Control of Equipment, Revision 75
- Admin 4.02, Maintenance Rule 10 CFR 50.65(a)(4) Fire Risk Management Actions (RMAs) For 1-1 DG Maintenance Window, Revision 68
- Admin 4.16, Abnormal Operating Procedure Development and Implementation, Revision 6
- AOP-32, Loss of Containment Integrity, Revision 0
- AOP-37, Loss of Instrument Air Basis, Revision 0
- AOP-37, Loss of Instrument Air, Revision 0
- AOP-38, Acts of Nature, Revision 3
- ARP-7, Auxiliary Systems Scheme EK-11 (C-13), Revision 95
- CIS-M-6, Personnel Air Lock Seal Contact Adjustment, Revision 0
- Control Room Logs, February 22 through 25
- COP-22A, Diesel Fuel Oil Testing Program, Revision 25
- CR-PLP-2012-07030, Loss of Safety Function Evaluation for MER Door-15, December 7, 2012
- CR-PLP-2013-03523, Control Room Filtration Loss of Safety Function Evaluation for Stuck Open MER Door-15, September 17, 2013
- CR-PLP-2015-00526, Received Alarm EK-0105, Turbine Hi Vibration, Unexpectedly, February 1, 2015
- CR-PLP-2015-00565, Foreign Material Found During Vacuum Sipping for Dry Fuel Storage, February 3, 2015
- CR-PLP-2015-00570, During Fuel Sipping, A Suspect Fuel Leak was Identified on Fuel Assembly T-17, February 3, 2015
- CR-PLP-2015-00597, Non-Conforming Item – Power Supply P/S-0516A, February 5, 2015
- CR-PLP-2015-04242, PS-1220 Containment Instrument Air Pressure Switch Calibration Could not be Performed due to Leak By on Isolation Valve MV-611CAS, September 24, 2015
- CR-PLP-2015-06353, Instrument Air Compressor Unload Time has Lowered from About 45 Seconds to 36 Seconds, December 31, 2015
- CR-PLP-2016-00006, Noted Air Leakage at the Vent for SV-3223A E-60A SDC CV-3223 A/S Block/Bent Appears to be Leaking Air Past Seat, January 2, 2016
- CR-PLP-2016-00037, Administrative CR to Update CR-PLP-2015-06342, EK-1101, Containment Instrument Air Low Pressure With C-2B Instrument Air Compressor Running, January 5, 2016

- CR-PLP-2016-00074, After Receiving EK-1101 Containment Instrument Air Low Pressure Alarm, C-2B Instrument Air Compressor was Observed With a Low Out of Specifications Unload Time of 37 Seconds, January 5, 2016
- CR-PLP-2016-00191, Received Alarm EK-1101, Containment Instrument Air Low Pressure Unexpectedly, January 12, 2016
- CR-PLP-2016-00218, As Part of the EN-MA-125 Troubleshooting Plan for EK-1101 Containment Instrument Air Low Pressure Alarm, a work Request is Needed to Check Calibration and Possibly Calibrate PS-1220, January 13, 2016
- CR-PLP-2016-00268, Received Alarm EK-1101, Containment Instrument Air Low Pressure Unexpectedly, January 14, 2016
- CR-PLP-2016-00298, Cycle Time on CV-0608 Has Gone from Approximately 60 to 65 Seconds to Approximately 12 Seconds, January 16, 2016
- CR-PLP-2016-00311, Received Alarm EK-1101 Containment Instrument Air Low Pressure Unexpectedly 6 Times from 1/17/16 at 1800 to 1/18/16 at 0600, January 18, 2016
- CR-PLP-2016-00334, Heater E-6B Outlet Temperature has Changed, January 18, 2016
- CR-PLP-2016-00471, Planned Power Reduction for Repairs to CV-0608, January 26, 2016
- CR-PLP-2016-00487, CR to Document Findings During Investigation of CV-0608, January 26, 2016
- CR-PLP-2016-00616, Received EK-1101, Containment Instrument Air Low Pressure Unexpectedly, February 3, 2016
- CR-PLP-2016-00651, ITC Crossed into the Relay House While it was Posted as "Protected" due to the EDG 1-1 Outage, February 4, 2016
- CR-PLP-2016-00755, Received EK-1101, Containment Instrument Air Low Pressure Unexpectedly, February 10, 2016
- CR-PLP-2016-00812, Generate a Work Order to Install Temporary Pressure Indication Close to the Location of Containment Instrument Air Low Pressure Switch PS-1220, February 13, 2016
- CR-PLP-2016-00905, MV-CA10129, E-60A/B Inlet CV-0937 Air Supply has a Category 4 Air Leak, February 22, 2016
- CR-PLP-2016-00975, There is a 12 Second Oscillation in the Secondary Side of the Plant that was not Present at Plant Start-up Out of 1R24, February 25, 2016
- CR-PLP-2016-01110, Work On MV-CA10129 Under WO 439211 Could not be Completed as Planned, March 3, 2016
- CR-PLP-2016-01116, CV-2008 PMU Tank T-81 M/U was not able to be Manually Stroked, March 3, 2016
- CR-PLP-2016-01124, While Removing Copper Sweat Fitting on Downstream Side of MV-CA10129 (E-60A/B CCW Inlet CV-0937 A/S), The 1 Inch Stub Piece From the Valve was Damaged Beyond Repair, March 4, 2016
- CR-PLP-2016-01125, Improper FME Controls Used During CV-0937 Air Line Work, March 4, 2016
- CR-PLP-2016-01132, Discovered a Puddle of Liquid in the West SIRWT Access Hatch, March 6, 2016
- CR-PLP-2016-01135, Entered AOP-38, Acts of Nature, March 6, 2016
- CR-PLP-2016-01166, During Performance of MO-7A-1, Found PI-1475 Reading Low Out of Spec, March 7, 2016
- CR-PLP-2016-01172, While Supporting RT-85D-A it was Noticed that the Prefilter to V-26A has About 1/2 Inch of Standing Water, March 8, 2016
- CR-PLP-2016-01184, The DFS Project Failed to Notify the Work Control Center Directly Prior to Removing the Track Alley Window, March 8, 2016
- CR-PLP-2016-01187, Diesel Fuel Oil Storage Tank T-10A has One Inch of Water, March 7, 2016

- CR-PLP-2016-01241, NRC Identified – Slow Drip (2–4 dpm) Noted From Insulation on Flange of 24” Critical Service Water Piping, March 10, 2016
- CR-PLP-2016-01286, The Air Pressure Regulator That Supplies CV=3025 has an Air Leak on its Discharge, March 14, 2016
- CR-PLP-2016-01442, Door-15 Will not Close, Handwheel Will not Turn, Door Dogs Will not Retract, March 24, 2016
- CR-PLP-2016-01447, Relay 162–202 for Breaker 152–202 As-Found Timing was Out of Tolerance High During Testing, March 24, 2016
- CR-PLP-2016-01455, The FWP Roof Is Leaking Above E-901, Raw Water Heat Exchanger When it Rains, March 25, 2016
- CR-PLP-2016-01468, During the Repair of Door 15 Equipment Room Missile Shield, it was Found that the 2 Gears that Operate the Dogs In and Out Were Well Worn as Were the Bushings that Keep the Shaft Centered, March 24, 2016
- CR-PLP-2016-01566, As Found for PS-1220 Containment Instrument Air Pressure Switch Alarm was Found at 89.5 psi, March 31, 2016
- CR-PLP-206-01314, Received Alarm EK-1104, Air Compressors C-2A, C-2B, C-2C Trip Unexpectedly, March 15, 2016
- EN-HU-102, Human Performance Traps & Tools, Revision 14
- EN-IS-123, Electrical Safety Checklist, Revision 16
- EN-LI-118, Cause Evaluation Process, Revision 22
- EN-LI-118-08, Containment Instrument Air Low Pressure Alarm Troubleshooting Plan and Failure Modes Analysis, Revision 2
- EN-MA-118, Foreign Material Exclusion, Revision 10
- EN-MA-125, Troubleshooting Control of Maintenance Activities, Revision 18
- EN-OP-119, Protected Equipment Postings, Revision 7
- EN-WM-104, On-Line Risk Assessment, Revision 12
- M-207, P&ID Feedwater and Condensate System, Sheet 1C, Revision 53
- M-208, P&ID Service Water System, Sheet 1A, Revision 65
- M-212, Piping & Instrumentation Diagram, Service and Instrument Air System, Sheet 1, Revision 84
- M-214, P&ID Lube Oil, Fuel Oil & Diesel Generator Systems, Sheet 1, Revision 79
- MO-7A-1 Basis Document, Emergency Diesel Generators 1-1 and 1-2, Revision 12
- MO-7A-1, Emergency Diesel Generator 1-1, Revision 92
- MO-7A-2 Basis Document, Emergency Diesel Generators 1-1 and 1-2, Revision 12
- P-67B Hammock, P-67B Outage Duration Hammock (7 Day LCO)
- Procedure 10.41, Editorial Correction Request, Revision 49
- Procedure MO-33, Control Room Ventilation Emergency Operation, Revision 25
- Procedure RE-138, Calibration of Bus 1D Undervoltage and Time Delay Relays, Revision 14
- Received Alarm EK-1101, Containment Instrument Air Low Pressure Unexpectedly, December 30, 2015
- SOP-10, Extraction and Heater Drain System, Revision 38
- SOP-16, Component Cooling Water System, Revision 47
- WI-SPS-E-19, Setup and Use of Manta MTS-5000 for Voltage Relays, Revision 1
- WO 00345742-01, EMA-1111; Motor Oil Drain Plug Needs to be Replaced, VLQ
- WO 00382281-01, P-67B, Inspect and Clean Heliflow Cooler
- WO 00382281-03A, P-67B, Hookup UFM to Measure Flow
- WO 00424350-02, P-67B; Clean BA Off Threaded Connection Around Mechanical Seal – MDM
- WO 00425572-01, MO-3189, BA Buildup on the Packing Gland MDM
- WO 293281-01, VF-26A: Repair Door Gaskets
- WO 366087, Replace K-6A; 1-1 Emergency Diesel Generator Raw Water Instrument Tubing

- WO 421959-01, DFS: Install Window in Track Alley Back Wall Per EC-59170
- WO 429130-01, PI-1475; Replace K-6A Fuel Oil Pressure Gauge – VLC
- WO 429130-03, PI-1475; OPS PMT, MO-7A-1
- WO 435207, PS-1220; Calibrate Pressure Switch for Low Service Air Pressure Alarm to Containment Building
- WO 435353, CV-0608; Valve Oscillations May Have Increased
- WO 52544906, PS-1220; Containment Instrument Air Pressure Switch Calibration
- WO 52554934-01, CV-0884, Perform Diagnostic Testing
- WO 52554934-02, CV-0884, Perform Diagnostic Testing PMT
- WO 52559941-01, 52-2139, (MO-139) PM-Breaker/Starter
- WO 52559941-02, 52-2139, (MO-3189) Lab Test Breaker
- WO 52559941-02, P-67B; Pump Oil Change
- WO 52559941-03, PMT\* 52-2139 (MO-3189)
- WO 52559941-04, PM-Breaker/Starter 52-2139, (MO-3189)
- WO 52584085-01, P-67B; Motor Oil Change
- WO 52598941-01, RT-85D-A – In-place HEPA & Charcoal Filter Testing
- WO 52598941-01A, RT-85D-A –“As Found Only” Inplace HEPA & Charcoal Filter Testing
- WO 52605415-01, VFC-26A; Filter/Absorber Charcoal Media Replacement
- WO 52664339-02, Preps for MO-33A (CRHVAC Testing)
- WO 52664342-01, MO-7A-1 Emergency Diesel Generator 1-1 (K-6A) Surveillance Test
- WO 52666599-01, QI-3 Reactor Protection Matrix Logic Tests

#### 1R15 Operability Determinations and Functionality Assessments

- Admin 4.11, Safety Function Determination Program, Revision 6
- BOP-UT-16-002, MV-SW279; Downstream Elbow UT, January 18, 2016
- CR-PLP-2010-03319, P-8B Secured Due to Absence of Observable Leakage, August 9, 2010
- CR-PLP-2010-05812, More Steam than Expected Exiting Steam Traps, October 28, 2010
- CR-PLP-201301128, P-8A was Manually Tripped, March 15, 2013
- CR-PLP-2014-04927, Minor, Severity Level 2, Leak on Threaded Union Downstream of MV-FW147, October 10, 2014
- CR-PLP-2016-00331, Five UT Measurements for MV-SW279, UT on Downstream Elbow are Below Tmin Acceptance Criteria but all are Greater than Tcrit Acceptance Criteria, January 18, 2016
- CR-PLP-2016-00413, Operations Failed to Log Entry into LCO 3.8.1B and LCO 3.5.2B or LCO 3.0.6, January 22, 2016
- CR-PLP-2016-00716, While Performing Corrective Maintenance on CK-FW416, Found the Plug on this Lift Piston Check Valve Stuck in Position, February 9, 2016
- CR-PLP-2016-00733, Six of Twelve Bolts Were Loose on the Inlet Flange to CV-0598 Turbine Driver K-8 Overspeed Trip, February 10, 2016
- CR-PLP-2016-00734, Gray Tin-like Material Found Between Shaft and Follower, February 10, 2016
- CR-PLP-2016-00750, Stress Package SP-033417 has Been Identified as Employing Non-Conservative Values for Flow Indicator Weights, February 10, 2016
- CR-PLP-2016-00782, During Operation of P-8B, AFW Pump, A Crack was Discovered on Swagelock Nut, February 11, 2016
- CR-PLP-2016-00784, The Fitting Documented to be Cracked on CR-PLP-2016-0782 was Determined to be An Orifice Nipple, February 11, 2016



- CR-PLP-2016-00791, Work Order 396763-03 Associated with Engineering Change 62951 on MV-FW147 was not Routed to the Quality Control Inspection Coordinator for Review, February 12, 2016
- E-44, Sheet 138, Lighting Panel Schedule Panel L-58, Revision 7
- E-44, Sheet 138A, Lighting Panel Schedule Panel L-58, Revision 2
- E-5, Sheet 5B, Relay Diagram 480 Volt Motor Control Centers, Revision 12
- E-84, Sheet 2A, Pressurizer Pressure Control & Measurement Channel Instrumentation CKT. No. 2, Revision 4
- EC 62951, Alternate Flow Restriction Method to an Orifice Downstream of MV-FW147, Revision 0
- EC-62197, Minimum Wall Thickness for HB-23-6" Near MV-SW279, Revision 0
- EN-CS-S-008-MULTI, Pipe Wall Thinning Structural Evaluation, Revision 1
- EN-LI-108, Event Notification and Reporting, Revision 12
- EN-OP-104, Operability Determination Process, Revision 10
- EN-OP-104, Operability Determination Process, Revision 10
- M-203, Sheet 1, Safety Injection, Containment Spray & Shutdown Cooling System, Revision 48
- M-203, Sheet 2, Safety Injection, Containment Spray and Shutdown Cooling System, Revision 28
- M-204, Sheet 1A, Safety Injection, Containment Spray & Shutdown Cooling System, Revision 44
- M-204, Sheet 1A, Safety Injection, Containment Spray and Shutdown Cooling System, Revision 44
- M-259, Piping Class Summary, Revision 26
- Operability Evaluation Associated with CR-PLP-2016-00750
- QO-21, Inservice Test Procedure AFW Pumps, Revision 46
- Upon Removing the Upper Half of the Packing Follower There was a Gray Tin-Like Material Found, February 10, 2016
- VEN-M101, Stress ISO Service Water From Engineered Safeguards Emergency Diesel Generator Heat Exchanger, Sheet 3035, Revision 10
- WO 1515500, ST-0513, STM Supply to K-8 Turbine Not Passing Steam/Cond
- WO 36803, CV-0598; P-8B Turbine Driver K-8B Overspeed Trip Valve, Minor Leak Repair, February 10, 2016
- WO 372388, MV-SW279; Perform UT on Downstream Elbow
- WO 396763, MV-FW147; Minor Leak at Threaded Union Repair
- WO 401961, ST-0512; Inspect Trap Internals & Piping for Blockage
- WO 435727, MV-SW279; Perform UT on Elbow (scheduled March 2018)
- WO 52283297, ST-0513 Steam Trap is Leaking Steam More than Expected

#### 1R18 Plant Modifications

- AOP-38, Acts of Nature, Revision 5
- C-50, Architectural Auxiliary & Reactor Building Floor Plan – Elevation 625'-0", Revision 26
- CR-PLP-2016-00416, NRC Identified That Risk Assessment Based on RIS-01-009, Control of Hazard Barriers Methodology Cannot be used As Justification that the Control Room Envelope was not Inoperable for "Missile Protection, January 22, 2016
- CR-PLP-2016-00695, Rebar Encountered While Drilling Two Anchor Bolt Holes in the Auxiliary Building Concrete Wall During Installation of the Track Alley Tornado Missile/Radiation shield, February 8, 2016
- CR-PLP-2016-00717, Missed QC Hold Points During Grouting In Support of Installation of a Removable Plate for the Dry Fuel Storage Project in Track Alley, February 8, 2016

- CR-PLP-2016-00773, While Installing Hilti Kwik Bolt 3 Anchor Bolts, it was Realized That Full Thread Engagement of the Nut to Stud Could not be Achieved, February 11, 2016
- CR-PLP-2016-01163, Editorial Concern as the Calculation on Engineering Change Notice EC 63256 to EC 59170 Did Not Include the Section for the Weld Evaluation, Marc 7, 2016
- CR-PLP-2016-01184, The DFS Project Failed to Notify the Work Control Center Directly Prior to Removing the Track Alley Window, March 8, 2016
- CR-PLP-2016-01309, Drawing C0469 Sheet 2 Should Have Been Updated in ECN EC 63256, March 15, 2016
- EC-62309, Attachment 1, TS LCO 3.7.10 Required Action B.2 Evaluation for Implementation of Track Alley Wall Modification Per EC-59170, Revision 0
- EC-62309, Attachment 2, Tornado Missile Assessment During Implementation of Track Alley Wall Modification EC-62309, Revision 0
- EN-DC-115, EC Number 59170, ECN 61274, ECN61833, ECN62156, Track Alley Back Wall Modifications for Dry Fuel Storage, Revision 0
- EN-DC-115, Post-Installation of the Track Alley Missile Shield, the Shield was not able to be Raised and Lowered as Designed, Revision 18
- EN-DC-126 for EA-EC59170-01, 32-9246840-000 Palisades Track Alley Tornado Missile/Radiation Shield Design, Revision 0
- EN-LI-100, PAD Log # 15-0246, Track Alley Back Wall Modifications for Dry Fuel Storage, Revision 0
- EN-LI-100, PAD Log #16-0017, Procedure Revision of FHS-M-41E, "Hi-Storm Feedwater Dry Fuel Loading Operations – Hi-Storm Site Transportation," Revision 0
- EN-LI-100, Process Applicability Determination, Revision 18
- EN-LI-101, 10 CFR 50.59 Evaluations, Revision 12
- Operations Logs, LCO Board Logs, January 28, 2016
- SEP-HAB-PLP-001, Control Room Envelope Habitability Program, Revision 0
- CR-PLP-2016-00374, Slight Overcut on the First Vertical Cut During Concrete Sawing for WO 421959 for the Track Alley Window, January 20, 2016
- CR-PLP-2016-00874, Track Alley Window Would not Move Upon Completion of Installation, February 19, 2016
- WO 421959, Track Alley Saw Cut West Wall, Revision 2

#### 1R19 Post Maintenance Testing

- Basis Document for QO-20, Inservice Test Procedure – Low Pressure Safety Injection Pumps, Revision 18
- CR-PLP-2015-03159, Pre-Conditioning Evaluation Prior to RO-145B, AFW Comprehensive Pump Test Concluded that The Work Performed was Considered Unacceptable, July 29, 2015
- CR-PLP-2016-00017, SV-1480 Is not Fully Closed to ASM 1B if MV-DE119 Is Opened, January 4, 2016
- CR-PLP-2016-00348, During Review of WO 52649550 it was Identified That There was a Change In Vibration Values, January 19, 2016
- CR-PLP-2016-00511, AFW Instrumentation Power Supply P/S-0737A Over-Voltage Setting Was Found Out of as Found Tolerance, January 28, 2016
- CR-PLP-2016-00515, FME Found in Link Block TB1 Link 34 in the J-1006 Panel, January 28, 2016
- CR-PLP-2016-00517, Operations Review Deemed the Replacement of DC Breaker 72-301 and DC Breaker 72-302 To Be An Unacceptable Risk, January 28, 2016

- CR-PLP-2016-00523, Found During Calibration of I/P-0736 AFW Flow Control Bypass to E-50B That The I/P Pressures Were Fluctuating at Desired Calibration Points, January 28, 2016
- CR-PLP-2016-00527, CV-0731, Condensate Reject to CST T-2 Opened Early, January 28, 2016
- CR-PLP-2016-00540, Fairbanks Morse not able to Support K-6A Engine Analysis, January 29, 016
- CR-PLP-2016-00555, 152-107, DG 1-1 Upper Secondary Contact Bent Slightly During Racking to Bus 1C, February 1, 2016
- CR-PLP-2016-00558, Portion of a Wire Label Found in the JWPR2 Relay, February 1, 2016
- CR-PLP-2016-00567, System Engineer Notified that Crankshaft Deflection Measured 0.0018 Inches During K-6A DG 1-1 Maintenance as Required, February 1, 2016
- CR-PLP-2016-00568, Connecting Rod Bolt Head on 7R Connecting Rod Discovered Out of Position During Maintenance on K-6A DG 1-1, February 1, 2016
- CR-PLP-2016-00569, Broken Wire on TB-2 Terminal Number 60, February 1, 2016
- CR-PLP-2016-00572, During K-6A 4 Cycle Auxiliary System Maintenance, on of the Two Cylinder 2L Fuel Tube-To-Head Clampings Studs Yield Before Torque was Achieved, February 2, 2016
- CR-PLP-2016-00594, DG-B, DG 1-1 Jacket Water Header Return To Expansion Tank Hose Is Labeled As DG-B3 and DG-B4 On the Same Component Tag, February 2, 2016
- CR-PLP-2016-00596, New DG-5 Hose Didn't Have an O-Ring Installed on the Elbow Side of the Hose, February 3, 2016
- CR-PLP-2016-00610, CR-PLP-2016-0511 Should Have Been Screened as Adverse, February 3, 2016
- CR-PLP-2016-00612, Very Difficult to Remove/Reinstall DG-2 Due to Configuration of DG-3 Hose to Block Adaptor, February 3, 2016
- CR-PLP-2016-00613, EN-OM-126 Was not Used When Escorting a Vendor During the Diesel Generator Outage, February 3, 2016
- CR-PLP-2016-00617, Tubing From MV-DE661 To PS-1477 Failed the W-MSM-M-26 Compression Fitting Checklist for Reinstall, February 3, 2016
- CR-PLP-2016-00618, Alarm EK-0551 Alarm Received During SOP-22 Test Run of 1-1 EDG, February 4, 2016
- CR-PLP-2016-00619, Crank Case Cover for Cylinder 2L Leaking Oil, February 4, 2016
- CR-PLP-2016-00620, Lube Oil Leak at the Jacket Water Mounting Plate to Engine Block Gasket Joint Found During WO 436723-02 PMT, February 4, 2016
- CR-PLP-2016-00631, Failed PMT, 1-1 EDG Lube Oil Booster Pump is Leaking From the Pump to the Engine Gasket, February 4, 2016
- CR-PLP-2016-00632, Failed PMT, Crankcase Cover Leak on Cylinder 2R (1-1 EDG) Remains After Maintenance, February 4, 2016
- CR-PLP-2016-00662, Operability Testing of the 1-1 D/G Is Delayed Due to Failure of the Wilmar Timer, February 4, 2016
- CR-PLP-2016-00664, Wilmar Timber M&TE ID#007856 was Returned by Operations for Failure to Function Properly During Diesel Testing, February 4, 2016
- CR-PLP-2016-00668, Peak Load Testing was not Performed During the MO-7A-1 as Required, February 5, 2016
- CR-PLP-2016-00669, Electrical Maintenance Failed to Verify the Bullet Nose of Breaker 152-107 Stayed Engaged While the Breaker was Cycled Open and Closed, February 5, 2016
- CR-PLP-2016-00752, Expedited Procedure Revision Requested During a 72 Hour LCO, February 10, 2016

- CR-PLP-2016-00775, Work Order 52571470, Manta Test Set was Used With an Expired Calibration Date Sticker, February 11, 2016
- CR-PLP-2016-01233, When Draining The Oil From P-67B, Oil Was Spilled, March 10, 2016
- CR-PLP-2016-01238, The Low Dose Waiting Area Under the Hatch to the Component Cooling Water Room had Metal Filings and Loose Dirt Accumulating, March 10, 2016
- CR-PLP-2016-01242, During the Execution of QO-20B the Pump had to be Stopped, March 10, 2016
- EA-F6-866-1, K-8 Steam Trap Design, Revision 0
- EN-MA-105, Control of Measuring and Test Equipment (M&TE), Revision 11
- EPS-M-14A, Diesel Generator Every Cycle Maintenance, Revision 5
- EPS-M-14B, Diesel Generator Second/Third Cycle Maintenance, Revision 0
- EPS-M-14C, Diesel Generator Fourth Cycle Maintenance, Revision 1
- FWS-M-6, AFW Turbine Maintenance, Revision 30
- FWS-M-6, Post Maintenance Testing, Revision 30
- M-205, Sheet 2, Main Steam and Auxiliary Turbine Systems, Revision 70
- M-207, AFW System, Revision 41, Sheet 2
- M-214, P&ID Lube Oil, Fuel Oil and Diesel Generator Systems, Sheet 1, Revision 79
- MO-7A-1, Emergency Diesel Generator 1-1 T.S. Surveillance, Revision 92
- QO-20, Inservice Test Procedure – Low Pressure Safety Injection Pumps, Revision 22
- QO-21 Basis Document, Inservice Test Procedure – AFW, Revision 15
- QO-21, Inservice Test Procedure – AFW Pumps, Revision 45
- QO-5, Valve Test Procedure (Includes Containment Isolation Valves, Revision 96
- RO-145, Comprehensive Pump Test Procedure AFW Pumps P-8A, P-8B and P-8C, Revision 15
- RO-97, AFW System Automatic Initiation Test Procedure, Revision 22
- RO-97, Basis Document for RO-95 AFW System Automatic Initiation Test Procedure, Revision 8
- SOP-12, Feedwater System, Revision 75
- SOP-22, Diesel Generator Log Sheet, Revision 67
- SOP-22, Emergency Diesel Generators, Revision 67
- T-186, AFW Turbine K-8 Overspeed Trip Test and Governor setting, Revision 21
- WO 00382281, P-67B, Inspect and Clean Heliflow Cooler
- WO 398228, P-8B/K-8, Replace OST Spring
- WO 401984, CK-FW416; Inspect Check Valve Internals for Proper Operation
- WO 408644, K-8B; Install New Reset Lever and Latch Plate
- WO 416553, K-6A “1-1 Diesel Generator” 7L Fuel Pump
- WO 425572, MO-3189, BA Buildup on the Packing Gland Area MDM
- WO 434211, SV-1480; Leaks By
- WO 436723, K-6A 1-1 Emergency Diesel Generator
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- WO 52521845, K-6A 1-1 D/G
- WO 52542374, K-8; AFW Pump Turbine Bearing PM
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- WO 5255528, RO-97C – AFW System Automatic Initiation Test
- WO 52555610, AFW Power Supply Checkout (J-1052)
- WO 52559941, PM-Breaker/Starter 52-2139 (MO-3189)
- WO 52569639, CK-ES3330; (IST/CM Valve) Nonintrusive Check Valve Test
- WO 52571470, 62-1/P8C, Timing Test of AFW Agastat Relay
- WO 52578751, K-6A 1-1 D/G
- WO 52584085, P-67B MTR/PMP Oil Change
- WO 52590437, K-6A 1-1 D/G

- WO 52590440-03, K-6A Lube Oil and Jacket Water Pressure; Annunciator Testing
- WO 52615578, K-8; Lubricate Governor Linkage
- WO 52658628, MO-7A-1, Emergency Diesel Generator 1-1
- WO 52666396, QO-20B -P-67B, ISI Test Proc-Low Press SAF INJ Pump
- WO 5268072, QO-21C, AFW System VLV Inservice Test

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- Admin 4.11, Safety Function Determination Program, Revision 6
- ARP-20A, Diesel Generator 1-1 Scheme EK-20, Revision 8VEN-M12, Sheet 98(1), Engine Control D.G. 1-1, Revision 36
- CR-PLP-2014-04903, Issue Identified During the 2014 Component Design Basis Inspection, October 9, 2014
- CR-PLP-2015-05825, Found That MV-SW342, SW Pump P-7A Mini-Flow was Leaking by, November 23, 2015
- CR-PLP-2016-00017, It Appears That SV-1480 is not Fully Closed Allowing Air Flow to ASM 1B If MV-DE119 Is Opened, January 4, 2016
- CR-PLP-2016-00561, ASM-1B Found to Be Damaged, February 1, 2016
- CR-PLP-2016-00561, ASM-1B Was Found to have the Pinion Gear Stuck in the Engaged Position, March 3, 2016
- CR-PLP-2016-00580, Pressure Switch PS-1479 was Found Out of as Found Setpoint High, February 2, 2016
- CR-PLP-2016-00582, K-6A Starting Air Alarm Pressure Switch PS-1481 Out of as Found Tolerance High, February 2, 2016
- CR-PLP-2016-00582, Pressure Switch PS-1481 Out of as Found Tolerance High, February 2, 2016
- CR-PLP-2016-00592, Two Isolation Valves that were Replaced had Two Different Styles, February 2, 2016
- CR-PLP-2016-00593, PS-1484 Out of as Found Tolerance High, September 2, 2016
- CR-PLP-2016-00625, ASM-1B K6A Encountered Interference For Installation, February 3, 2016
- CR-PLP-2016-00662, Operability Testing of the 1-1 D/G is Delayed Due to Failure of the Wilmar Timer, February 4, 2016
- DBD-5.01, Diesel Engine and Auxiliary Systems, Revision 7
- E-17, Sheet 12, Diesel Engine Control Trips and Alarms, Revision 9
- E-212, Sheet 4, Schematic Diagram Gas Radiation Monitoring System, Revision 0
- E-218, Sheet 9400, 2.4KV (Bus 1C Undervoltage Relay Junction Box J9400, Revision 10
- EPS-M-14A, Diesel Generator Every Cycle Maintenance, Revision 5
- FSAR Chapter 8, Section 8.4Electrical systems
- M-213, Service Water and Screen Structure and Chlorinator, Revision 96
- M-214, Sheet 1, Lube Oil, Fuel Oil & Diesel Generator System, Revision 79
- Palisades Nuclear Power Plant IST Program, P-7B Data
- QI-3 Basis Document, Technical Specification Surveillance Procedure, Reactor Protection Matrix Logic Tests, Revision 0
- QI-3, Reactor Protection Matrix Logic Tests, Revision 7
- QI-4, Pressurizer Low Pressure SIS Initiation Functional Check, Revision 4
- QO-1, Safety Injection System, Revision 67
- QO-14 Basis Document, Inservice Test Procedure – Service Water Pumps, Revision 17
- RE-137, Calibration of Bus 1C Undervoltage Time Delay Relays, Revision 15
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- TPA1272-2, ST750 Turbine Starter (Inertia)
- WO 00436861, MV-DE619, Wrong Quality Classification Install New Valve
- WO 228527, MV-DE621, Valve Leaks By While Calibrating PS-1481 & PS-1483
- WO 228623, MV-DE619, Valve Leaks by while Calibrating PS-1484 and PS-1485
- WO 52441252, ASM-1A, K-6A East Air Start Motor; Replacement
- WO 52441253, ASM-1B, K-6A West Air Start Motor; Replacement
- WO 52575325, Re-137-D/G 1-1 Undervoltage Start Channel Calculation
- WO 52590441, K-6A (Air Motor B) Starting Air Instrument
- WO 52591306, K-6A (Air Motor A) Starting Air Instrument
- WO 52654390, QO-1 Safety Injection Actuation System Test
- WO 52658076, QI-4 – PZR LP SIS Initiate PZR High Level Alarm
- WO 52658222 01, QO-14B, -P7B, IST Service Water Pump
  
- 1EP6 Drill Evaluation
  
- AOP-24, Steam Generator Tube Leak, Revision 1
- CR-PLP-2016-01653, The Wrong Revision to SEP Supplement 1, “Site Emergency Plan Supplement 1 – EAL Wall Charts,” Was in the Binder in the Simulator, March 30, 2016
- CR-PLP-2016-01668, Non-Failure Criteria Issues Were Identified by the Operating Crew During Their As-Found Simulator Scenario on March 29, 2016 Regarding the Palisades Event Notification Form, March 29, 2016
- CR-PLP-2016-01681, Controller and Player Objective Evaluation Packets Prepared for the Emergency Preparedness Drill on March 30, 2016, Contained Information from an Out-of-Date Revision of EN-EP-308, April 7, 2016
- CR-PLP-2016-01684, Objective A.1, Command and Control, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01685, Objective B.3, Line of Succession, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01686, Objective E.4, Follow-Up Notification Message Content, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01688, Objective F.4, Utility Communications system, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01689, Objective G2, Media Briefings, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01690, Objective H.1, TSC Support of Emergency Operations was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01691, Objective J.5, Personnel Protection Equipment, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01692, Objective J.6, Potassium Iodide (KI), was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016
- CR-PLP-2016-01693, Objective K.1, Emergency Worker Exposure Control, was Evaluated as NI (Needs Improvement) for the Emergency Preparedness Drill Conducted on March, 30, 2016, April 7, 2016

- EI-6.13, Protective Action Recommendations for Off-Site Populations, Revision 24
- EI-8, Onsite Radiological Monitoring, Revision 18
- Emergency Action level Technical Bases Document, Revision 7
- Emergency Planning Drill Scenario, March 30, 2016
- EN-EP-610, Technical Support Center Operations, Revision 2
- EN-EP-611, Operations Support Center Operations, Revision 2
- EOP Supplement 12, 'A' Steam Generator SGTR Isolation Checklist, Revision 8
- EOP Supplement 17, 'A' Steam Generator ESDE Isolation Checklist, Revision 7
- EOP-1.0, Standard Post-Trip Actions, Revision 17
- EOP-5.0, Steam Generator Tube Rupture Recovery, Revision 19
- EOP-9.0, Functional Recovery, Revision 23
- SEP Supplement 1, Emergency Action Level Wall Charts, Revision 3
- Site Emergency Plan, Revision 26

#### 2RS1 Radiological Hazard Assessment and Exposure Controls

- CR-PLP-2015-04736, Official Stop Work Authority Declared Per EN-RP-141, October 6, 2015
- CR-PLP-2015-04784, Refueling Workers Lost Communication with Viewing Gallery, October 7, 2015
- CR-PLP-2015-04898, Welder Received a Dose Rate Alarm, October 10, 2015
- CR-PLP-2015-05019, Operator Outside Personnel Airlock Received a Dose Rate Alarm, October 14, 2015
- EN-RP-106-01, Radiological Survey Guidelines, Revision 02
- EN-RP-108, Radiation Protection Posting, Revision 16
- EN-RP-121, Radioactive Material Control, Revision 12
- EN-RP-122, Alpha Monitoring, Revision 09
- EN-RP-123, Radiological Controls for Highly Radioactive Objects, Revision 01
- EN-RP-131 Attachment 9.2, Air Sample Form, Various Dates
- EN-RP-131, Air Sampling, Revision 14
- EN-RP-143 Attachment 9.4, Sealed Source Leak Test Worksheet, August 4, 2015
- EN-RP-143 Attachment 9.7, Inventory Worksheet, January 13, 2015
- EN-RP-143, Source Control, Revision 11
- Radiological Survey Maps, Various Dates
- RWP 2016-0101, Radiation Protection Activities in High Radiation, Locked High Radiation, High Contamination and Airborne Radioactivity Areas, Revision 01
- RWP 2016-0206, Sluice ALPS Media, Revision 01
- RWP 2016-0208, Containment Entries with the Reactor Critical, Revision 01
- RWP 2016-0215, Inspect/Decontaminate/Disassemble/Repair Refueling and Reactor Head Outage Equipment, Revision 01

#### 4OA1 Performance Indicator Verification

- NRC Performance Indicator Technical Data Sheet, NRC Indicator Heat Removal System (AFW) (MS08), 1<sup>st</sup> Quarter 2015 through 4<sup>th</sup> Quarter 2015
- NRC Performance Indicator Technical Data Sheet, NRC Indicator Unplanned Scrams with Complications (IE04), 1<sup>st</sup> Quarter 2015 through 4<sup>th</sup> Quarter 2015
- NRC Performance Indicator Technical Data Sheet, NRC Indicator Unplanned Scrams Per 7000 Critical Hours (IE01), 1<sup>st</sup> Quarter 2015 through 4<sup>th</sup> Quarter 2015
- NRC Performance Indicator – Initiating Events, - Unplanned Scrams per 7,000 Critical Hours, 1<sup>st</sup> Quarter 2015, April 1, 2015

- NRC Performance Indicator – Initiating Events, – Unplanned Scrams per 7,000 Critical Hours, 2<sup>nd</sup> Quarter 2015, July 1, 2015
- NRC Performance Indicator – Initiating Events, – Unplanned Scrams per 7,000 Critical Hours, 3<sup>rd</sup> Quarter 2015, October 1, 2015
- NRC Performance Indicator – Initiating Events, – Unplanned Scrams per 7,000 Critical Hours, 4<sup>th</sup> Quarter 2015, January 18, 2016

#### 4OA2 Problem Identification and Verification

- CR–PLP–2015–06307, CRT Screen on PY–0102B, Thermal Margin Monitor Channel ‘B’ Brightness/Contrast Needs to Be Adjusted, December 26, 2015
- CR–PLP–2015–06344, LCO Entry Time for Entry into LCO 3.3.1 Table 3.3.1–1 Functions 1 and 9 Incorrectly Logged, December 30, 2015
- CR–PLP–2016–00077, There Were Three Fire Brigade members who did not Participate In the Required Two Fire Drills Per Year In 2015, January 6, 2016
- CR–PLP–2016–00198, The NRC Resident Has Questioned Whether this Meets the Intent of Minimum Fire Brigade Manning Per FPIP–1 Fire Protection Plan, Organization and Responsibilities, January 12, 2016
- EN–OP–110–09, Log Keeping, Revision 2
- EN–OP–115, Conduct of Operations, Revision 16
- EN–TQ–125, Fire Brigade Drills, Revision 3
- FPIP–1, Fire Protection Plan, Organization and Responsibilities, Revision 24
- FPIP–2, Fire Emergency Responsibility and Response, Revision 21
- FPIP–4, Fire Protection Systems and Fire Protection Equipment, Revision 36
- FPIP–6, Fire Suppression Training, Revision 23
- Training Attendance Roster, Fire Drill 1<sup>st</sup> Quarter 2016, January 6, 2016

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

- Admin 4.00, Operations Organization, Responsibilities, and Conduct, Revision 58
- AOP–3, Main Feedwater Transients Bases, Revision 1
- AOP–3, Main Feedwater Transients, Revision 1
- AOP–7, Rapid Power Reduction Basis, Revision 1
- AOP–7, Rapid Power Reduction, Revision 1
- Apparent Cause Evaluation: Loose Fuse FUZ/J015–1 Results in Main Feedwater Transient and Power Reduction, January 31, 2016
- CR–PLP–2015–06293, The Control Room Observed Tave Lowering, HB Power Steady Rising, and Feed Flow/Steam to Both Steam Generators Lowering, December 23, 2015
- CR–PLP–2015–06294, Feedwater Transient Required the Control Room to Enter a Rapid Power Reduction, December 23, 2015
- CR–PLP–2016–00590, The FUZ/J015–1 Disconnection was Determined to be a Functional Failure, February 2, 2016
- DWO–1, Operator’s Daily/Weekly Items Modes 1, 2, 3, And 4, Revision 107
- E–188, Sheet 1, Condensate Valves, Revision 24
- E–188, Sheet 2, Schematic Diagram Condensate Valves, Revision 16
- EA–BWB–96–01, Heat Balance Calculation Using the Ultrasonic Flowmeter Measurement Device, Revision 5
- EN–DC–186, Fuse Control, Revision 2
- EN–DC–205, Functional Failure Determination for CR–PLP–2015–06293, Event December 23, 2015



- Engineering Change 12729, "Determine Necessary Calculation, PPC And Procedure Changes Necessary to Comply With the New NEI Position Statement on Complying with the Licensed Power Level"
- EN-OP-115, Conduct of Operations, Revision 16
- LAR, Increase Rated Thermal Power- Response to Request for Addition information, October 6, 2003
- M-206, Sheet 1, Extractions, Heater Vents & Drain Systems, Revision 52
- M-207, Sheet 1C, Feedwater & Condensate System, Revision 53
- MT-15, UFM Data Collection, Analysis, and Implementation, Revision 16

## LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
DFS	Dry Fuel Storage
DG	Diesel Generator
HPSI	High Pressure Safety Injection
IEEE	Institute of Electrical and Electronic Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LCO	Limiting Condition for Operation
LORT	Licensed Operator Requalification Training
MCC	Motor Control Center
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NPO	Nuclear Plant Operator
NRC	U.S. Nuclear Regulatory Commission
PAD	Process Applicability Determination
PI	Performance Indicator
RPT	Radiation Protection Technician
RWH	Radiation Waste Handler
SAT	Systems Approach to Training
SRO	Senior Reactor Operator
STA	Shift Technical Advisor
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

A. Vitale

-2-

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Sincerely,

**/RA/**

Eric Duncan, Chief  
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