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

February 14, 2017

EA–14–013

Mr. Charles Arnone
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 05000255/2016004; 05000255/2016501; 07200007/2015001; AND 07200007/2016001

Dear Mr. Arnone:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. On January 23, 2017, the NRC inspectors discussed the results of this inspection with yourself and other members of your staff. The enclosed report documents the results of this inspection. The NRC also completed its annual inspection of the Emergency Preparedness Program. This inspection began on January 1, 2016, and issuance of this letter closes Inspection Report Number 2016501. The inspection also confirmed your implementation of the Confirmatory Order issued to you by the NRC on July 21, 2014. We independently reviewed information you provided, inspected records of activities that were completed, and determined that your actions were in compliance with the requirements delineated in the Confirmatory Order. The NRC has no further questions on this issue. There were no findings in this area.

Based on the results of this inspection, the NRC has identified three issues that were evaluated under the risk significance determination process as having very low safety significance (i.e., Green). The NRC has determined that violations are associated with these issues. Two additional issues were determined to be Severity Level IV violations with no associated findings using the traditional enforcement process. Because you initiated condition reports to address these issues, these violations are being treated as Non-Cited Violations (NCVs), consistent with Section 2.3.2 of the NRC's Enforcement Policy. These NCVs are described in the subject inspection report. Further, the inspectors documented a Severity Level IV licensee-identified violation in this report. The NRC is treating this violation as an NCV consistent with Section 2.3.2.a of the Enforcement Policy.

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 assignment 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.

In accordance with 10 CFR 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC’s Public Document Room or from the Publicly Available Records System (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Eric Duncan, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 50–255; 072–007
License No. DPR–20

Enclosure:
IR 05000255/2016004; 05000255/2016501;
07200007/2015001; 07200007/2016001

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50–255; 072–007
License No:	DPR–20
Report No:	05000255/2016004; 05000255/2016501; 07200007/2015001; 07200007/2016001
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Palisades Nuclear Plant
Location:	Covert, MI
Dates:	October 1 through December 31, 2016
Inspectors:	A. Nguyen, Senior Resident Inspector J. Boettcher, Resident Inspector B. Bartlett, Project Engineer R. Edwards, Senior Health Physicist N. Fields, Health Physicist G. Hansen, Senior Emergency Preparedness Inspector I. Kahn, Reactor Inspector J. Kutlesa, Physical Security Inspector M. Learn, Reactor Engineer V. Meghani, Reactor Inspector V. Myers, Senior Health Physicist J. Neurauter, Senior Reactor Inspector M. Ziolkowski, Physical Security Inspector
Approved by:	E. Duncan, Chief Branch 3 Division of Reactor Projects

Enclosure

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SUMMARY

Inspection Report (IR) 05000255/2016004; 05000255/2016501; 07200007/2015001; 07200007/2016001; 10/01/2016 – 12/31/2016; Palisades Nuclear Plant; Fire Protection; Problem Identification and Resolution; Other Activities

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Three Green findings and two Severity Level IV violations 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 November 1, 2016. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG–1649, "Reactor Oversight Process," Revision 6, dated July 2016.

Cornerstone: Mitigating Systems

- Green. A 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) was identified by the inspectors for the licensee's failure to appropriately implement the requirements of procedure EN–DC–161, "Control of Combustibles." Specifically, between January 1, 2016 and October 22, 2016, the inspectors identified several examples of the licensee's failure to have appropriate controls in place for the storage of combustible materials in excess of the limits required for those respective areas without a completed transient combustible evaluation (TCE). Also, on several occasions from October 19, 2016 to October 22, 2016, the required compensatory actions for a TCE related to the dry fuel storage cask transporter vehicle were not appropriately implemented as required by procedure EN–DC–161. The licensee entered these issues in their corrective action program (CAP) as condition reports (CRs) CR–PLP–2016–03633, CR–PLP–2016–05148, and CR–PLP–2016–0564. Corrective actions for these issues included completing the required TCEs, ensuring the combustible materials in the areas were addressed by the combustible loading calculations, and ensuring appropriate compensatory measures were implemented.

  The issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Protection Against External Factors attribute, in the area of Fire, 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, transient combustible materials without required TCEs were stored in the charging pump cubicles and in the refueling and spent fuel pool areas. The finding screened as having very low safety significance (Green) in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," since none of the stored materials were self-igniting, low flashpoint liquids, or

heat sources and was therefore assigned a “Low” degradation rating. The finding had a cross-cutting aspect of Training in the Human Performance cross-cutting area due to the common element of a lack of knowledge of the individuals with the control of combustibles process and understanding their roles in that process (H.9). (Section 1R05)

- Green. A finding of very low safety significance and an associated NCV of 10 CFR, Part 50, Appendix B, Criterion XVI, “Corrective Action,” was self-revealed for the licensee’s failure to promptly correct a condition adverse to quality. Specifically, the licensee failed to correct an adverse condition associated with the emergency diesel generator (DG) load sequencer and power supply module as revealed when the electrolytic capacitor failed two days after installation. The 1–2 DG was declared inoperable, the licensee replaced the failed module, and an equipment apparent cause evaluation was completed for the equipment failure. An internal operating experience review revealed that a similar issue occurred in 2005 and corrective actions to address that failure, which included establishing shelf life and age requirements for electrolytic capacitors that were part of power supply modules, were not applied to this module. The licensee entered this issue into their CAP as CR–PLP–2016–03260.

  The issue was determined to be more than minor in accordance with IMC 0612, Appendix B, because the performance deficiency was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to correct a condition adverse to quality, which rendered the 1–2 DG inoperable. This condition would have prevented the DG from automatically starting and loading on the prescribed signal. The finding was screened in accordance with IMC 0609, Appendix A, and was determined to have very low safety significance (Green) based on answering “No” to all the screening questions under the Mitigating Structure, System and Components, and Functionality section. The inspectors concluded that the corrective actions for the adverse condition of the aging electrolytic capacitors should have been implemented greater than three years ago, so the finding was not reflective of current licensee performance. Therefore, no cross-cutting aspect was identified. (Section 4OA2)

  Cornerstone: Barrier Integrity

- Green. A finding of very low safety significance and an associated NCV of 10 CFR, Part 50, Appendix B, Criterion III, “Design Control,” was identified by the inspectors for the licensee’s failure to establish measures to assure that the applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the licensee failed to provide instructions in procedures to construct the spent fuel dry cask loading stack-up, in the safety-related auxiliary building, in the configuration that had been analyzed for in the stack-up seismic design basis calculation. In addition, the licensee failed to provide instructions in revised procedures to construct the stack-up without certain gaps as

specified in the stack-up seismic design basis document. The licensee documented these issues in their CAP as CR–PLP–2016–00646, CR–PLP–2016–01308, CR–PLP–2016–01558, CR–PLP–2016–04497, and CR–PLP–2016–04826; revised the stack-up seismic analysis to address the identified issues; and translated the analyzed stack-up design configuration into stack-up installation procedures prior to performing stack-up operations with spent nuclear fuel in the multi-purpose canister.

The issue was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because it was associated with the Design Control attribute of the Barrier Integrity cornerstone and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the performance deficiency resulted in a stack-up configuration that did not ensure stack-up dynamic stability or Auxiliary Building structural integrity to maintain radiological barrier functionality during a design basis seismic event. The finding screened as having very low safety significance (Green) because it did not result in the loss of operability or functionality of the Auxiliary Building. The finding had a cross-cutting aspect of Field Presence in the Human Performance cross-cutting area, because licensee senior managers failed to ensure effective supervisory and management oversight of contractor activities related to the seismic analysis and installation of the stack-up configuration (H.2). (Section 4OA5.1)

Other Findings

- Severity Level IV. A Severity Level IV NCV of 10 CFR 72.212(b)(6), "Conditions of a General License Issued under 72.210," was identified by the inspectors for the failure of the licensee to adequately determine whether the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases. The license entered this issue into their CAP as CR–PLP–2016–00151 and CR–PLP–2016–02332 and initiated actions to perform an additional analysis to demonstrate that the cask systems at Palisades could withstand the effects of a tornado missile impact.

  The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues." Example 3.i was applicable to this issue in that additional analyses were needed to ensure accident analysis requirements were met. The inspectors determined that the violation could be evaluated using Section 6.5.d.1 of the NRC Enforcement Policy, as a Severity Level IV violation, because the licensee failed to meet a regulatory requirement that had a more than minor safety significance. Cross-cutting aspects are not assigned to traditional enforcement violations. (Section 4OA5.3)

- Severity Level IV. A Severity Level IV NCV of 10 CFR 72.146, "Design Control," was identified by the inspectors for the failure of the licensee to correctly translate the results of the fire and explosion hazards analyses performed, as required by 10 CFR 72.212(b)(6), into appropriate specifications, drawings, procedures, and instructions. Specifically, neither procedure FHS–M–41E, Revision 5, "HI-STORM FW Dry Fuel Loading Operations - HI-STORM Site Transportation," or procedure EN–DC–161, Revision 15, "Control of Combustibles," instituted adequate combustible

control measures for the Independent Spent Fuel Storage Installation (ISFSI) storage pad, in accordance with the results from the fire hazard analysis in calculation EA–EC42425–22, Revision 0, and the explosion hazard analysis in calculation EA–EC42425–07, Revision 0. The licensee entered these issues into their CAP as CR–PLP–2016–05470 and CR–PLP–2016–05475 and took timely corrective actions.

The violation was determined to be of more than minor significance using IMC 0612, "Power Reactor Inspection Reports," Appendix E, "Examples of Minor Issues." Example 4.k was applicable to this issue in that the lack of appropriate procedural controls allowed for a credible unanalyzed fire and explosion scenario that could affect the important-to-safety dry cask storage system. The inspectors determined that the violation could be evaluated using Section 6.5.d.1 of the NRC Enforcement Policy, as a Severity Level IV violation, because the licensee failed to meet a regulatory requirement that had a more than minor safety significance. Cross-cutting aspects are not assigned to traditional enforcement violations. (Section 4OA5.5)

- A Severity Level IV violation that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. This violation and CAP tracking number is listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

The plant began the inspection period operating at full power. The unit operated at or near full power for the entire inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter 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 corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. 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 cold weather issues:

- auxiliary feedwater (AFW);
- service water; and
- safety injection system.

This inspection constituted one winter seasonal readiness preparations sample as defined in Inspection Procedure (IP) 71111.01–05.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Condition—Geo-Magnetic Storm Forecast

a. Inspection Scope

A geo-magnetic storm disturbance with a K-index greater than or equal to seven with the potential to influence the plant was forecast on October 25, 2016. The inspectors reviewed the licensee's preparations for the impending weather conditions and conducted independent walkdowns of the plant's alternating current (AC) power systems. The inspectors verified that plant procedures for the reliability and continued availability of the offsite and onsite power systems were appropriate. The inspectors also reviewed the licensee's communications protocols between the transmission system operator and the plant to verify that the appropriate information was being exchanged in a timely manner when issues arose to take any necessary actions. The inspectors 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.

This inspection constituted one readiness for impending adverse weather condition 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:

- spent fuel pool (SFP) cooling system;
- 'A' component cooling water (CCW) system train; and
- motor-driven fire protection system train.

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 their 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.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Area 17: SFP, elevation 649';
- Fire Area 19: track alley, elevation 625';
- Fire Area 24: AFW pumps room, elevation 570'; and
- Fire Area 22: turbine lube oil room, elevation 590'.

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

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

b. Findings

Introduction: An NRC-identified finding of very low safety significance (Green) and an associated non-cited violation (NCV) of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 48(c) was identified for the failure to implement the requirements of procedure EN–DC–161, "Control of Combustibles." Specifically, the inspectors identified three examples of the licensee's failure to have appropriate controls in place for combustible materials.

Description: While performing routine walkdowns in the auxiliary building, the inspectors identified that the transient combustible evaluations (TCEs) for temporary shielding posted in the charging pump cubicles, a Level 2 combustible control zone, were expired. The inspectors brought this to the attention of the licensee who determined that no updated paperwork was completed for the temporary shielding because the responsible department thought the shielding had been changed to a permanent modification. However, the inspectors determined that the permanent modification for the shielding had not yet been completed. As required by the licensee's procedure for temporary modifications, the combustible material was required to be evaluated in accordance with the combustible control program. The combustible materials of concern included approximately 2300 pounds of molded shielding, shielding blankets, and tape in the three connected charging pump cubicles. This amount of material was significantly greater than the limit of 25 pounds for a Level 2 combustible control zone, without the completion of a TCE, from January 1, 2016 to August 10, 2016, contrary to procedure EN–DC–161, "Control of Combustibles."

Additionally, while performing walkdowns in the auxiliary building of dry fuel storage (DFS) campaign activities, the inspectors questioned the control of combustible material associated with the work activities. Specifically, the inspectors could not identify an active TCE associated with the materials, which exceeded 100 pounds, used for DFS work activities in the refueling and spent fuel pool areas. The licensee determined that contrary to procedure EN–DC–161, a required TCE was not created for those materials. These areas were Level 3 combustible control zones, which required a TCE for materials in excess of 100 pounds.

The inspectors also questioned the required compensatory actions associated with a TCE for the DFS transporter located in track alley. This TCE was approved on August 23, 2016, and required initiation of hourly fire tours if the material was left unattended in track alley for more than one hour. The combustible materials included the transporter tires, hydraulic fluid, motor oil, and diesel fuel. The inspectors identified several occasions from October 19, 2016 to October 22, 2016, in which the transporter was left unattended for more than one hour without the required compensatory measures in place.

These issues were discussed with the responsible departments, who initiated CRs; the fire marshal, who updated the TCEs as necessary; and fire protection engineers, who validated that the amount of combustibles was not in excess of the combustible loading calculations for the areas. The required compensatory measures for the materials in track alley were also implemented. Additionally, the licensee performed an adverse cause analysis for an identified adverse trend related to compliance with procedure EN–DC–161. The licensee identified the direct cause of this trend to be insufficient knowledge within the work groups for proper implementation of EN–DC–161. Corrective

actions to address this direct cause included development and execution of training for the impacted work groups, and a site action plan to improve work group awareness of transient combustible control requirements.

Analysis: The inspectors determined that the failure to implement the requirements of procedure EN–DC–161, “Control of Combustibles,” was a performance deficiency that warranted a significance determination.

The inspectors determined that the finding was more than minor in accordance with Inspection Manual Chapter (IMC) 0612, “Power Reactor Inspection Reports,” Appendix B, “Issue Screening,” dated September 7, 2012, because it was associated with the Mitigating Systems Cornerstone attribute of Protection Against External Factors, in the area of Fire, and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Additionally, the issue was similar to IMC 0612, Appendix E, “Examples of Minor Issues,” Example 4.k. This example stated that an issue is not minor if a credible fire scenario involving the identified transient combustibles could affect equipment important to safety. Specifically, the transient combustible materials being stored in the charging pump cubicles were within the zone of influence of the charging pumps, required valves, and power cables, which was equipment important to safety and required for plant shutdown to hot or cold conditions during certain fire scenarios.

The finding was screened in accordance with IMC 0609, Appendix F, “Fire Protection Significance Determination Process,” Attachment 1, dated September 20, 2013. The finding was assigned to the Fire Prevention and Administrative Controls category. It was determined to affect the ability of the reactor to reach and maintain a safe shutdown (hot or cold) condition (question A from Task 1.3.1) based on the Palisades National Fire Protection Association (NFPA) 805 fire risk calculations, which documented the equipment in these areas as being required for safe shutdown. The finding screened as Green based on the criteria in Appendix F, Attachment 2, which assigned the finding a “Low” degradation rating since none of the stored materials were self-igniting, low flashpoint liquids, or heat sources.

The finding had a cross-cutting aspect in the area of Human Performance related to Training, which required that the organization provide training and knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values. Discussions with the responsible work groups revealed that the common element to these three examples was a gap in knowledge on the status of the materials and the actions necessary to implement the requirements of procedure EN–DC–161 [H.9].

Enforcement: Title 10 CFR 50.48(c) approved, by incorporation of reference, the use of NFPA 805, “Performance Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants,” 2001 edition.

NFPA 805 Section 3.3.1.2, states, “Procedures for the control of general housekeeping practices and the control of transient combustibles shall be developed and implemented.”

Procedure EN–DC–161, “Control of Combustibles,” required that if any non-exempt combustibles within a Level 2 area exceed 25 pounds of loose combustible material or within a Level 3 area exceed 100 pounds of loose combustible material, a TCE shall be processed. Additionally, procedure EN–DC–161 required verification that if vehicles with internal combustion engines were brought into Level 2 or Level 3 areas, then compensatory actions were established as specified in the TCE.

Contrary to the above requirement, from January 1, 2016 to August 10, 2016, transient combustibles in excess of 25 pounds were stored in a Level 2 area, the charging pump cubicles, without the completion of a TCE.

On October 26, 2016, transient combustibles in excess of 100 pounds were stored in two Level 3 areas, the refueling and spent fuel pool area and track alley, without the completion of TCEs.

From October 19, 2016 to October 22, 2016, the DFS cask transporter vehicle, a vehicle with an internal combustion engine, was left unattended for greater than one hour on several occasions in the track alley, a Level 3 area, without compensatory measures implemented as required by the associated TCE.

The licensee documented these issues in CRs CR–PLP–2016–03633, CR–PLP–2016–05148, and CR–PLP–2016–0564, respectively. This violation is being treated as a NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee’s CAP. The corrective actions for this issue included completing the required TCEs, ensuring transient combustible materials were addressed by the combustible loading calculations for the areas, and ensuring appropriate compensatory measures were implemented. **(NCV 05000255/2016004–01, Failure to Have Appropriate Controls in Place for Combustible Materials)**

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On October 18, 2016, the inspectors observed a crew of licensed operators in the plant’s simulator during licensed operator requalification training. The inspectors verified that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and that training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

This inspection constituted one quarterly licensed operator requalification program 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 October 7, 12, and 18, 2016, the inspectors observed the replacement of TT–0112HB, 'B' channel hot leg temperature transmitter, and the digital electrohydraulic control system MBD/MBT/MBC-0 boards. These were activities that required heightened awareness or were related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of 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 Resident Inspector Quarterly Observation During Periods of Heightened Activity or Risk (71111.11Q)

a. Inspection Scope

On November 15, 2016, the inspectors observed a 1C/1D/1E Bus swap for troubleshooting activities associated with a 2400V AC ground on the system. These were activities that required heightened awareness or were related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;

- crew's clarity and formality of communications;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of 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.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

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

- DG air start system;
- emergency core cooling system breakers;
- pressurizer pressure control system; and
- charging 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 (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspector performed a quality review for the failure of the DG air start motor as discussed in IP 71111.12, Section 02.02.

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment to this report.

This inspection constituted three quarterly maintenance effectiveness samples and one quality control sample as defined in IP 71111.12–05.

b. Findings

No findings were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

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

- planned risk-significant work to replace the digital electrohydraulic control system drop cards and perform dry fuel storage campaign activities;
- emergent troubleshooting activities for pressurizer spray valve CV–1057;
- planned risk-significant work on the 1–1 DG and DFS campaign activities; and
- planned risk-significant work to troubleshoot the 2400V AC system ground, high industrial safety risk diving in the service water bay to repair traveling screen F–4B, and AFW system actuation testing.

These activities were selected based on their potential risk significance relative to the Reactor Safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that 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 four samples as defined in IP 71111.13–05.

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- evaluation of remaining service life of the 1–1 DG jacket water cooler with tubes plugged;
- extent of condition evaluation of the other DG air start trains after 1–1 DG 'B' air start train failure to start;
- evaluation of electrical coordination between direct current panel breaker 72–214 and the damage curve associated with containment penetration canister Z221;
- evaluation of service water control valve CV–0822 slow response time during testing; and
- evaluation of 1–2 DG turbo-charger support stud failure.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that technical specification (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 TSs 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 five samples as defined in IP 71111.15–05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following plant modification:

- alteration to the Track Alley west wall

The inspectors compared the configuration changes and associated 10 CFR 50.59 safety evaluation screening with 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 system. 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. Findings

(Closed) Unresolved Item 05000255/2016001–01, Design Review of Modification to Track Alley Wall for Dry Fuel Storage Campaign

The inspectors completed a review of Unresolved Item (URI) 05000255/2016001–01, "Design Review of Modification to Track Alley Wall for Dry Fuel Storage Campaign." In January 2016, the licensee began work on an engineering change to permanently modify the west wall of Track Alley to accommodate the new transporter used for moving the casks associated with the dry fuel storage campaign. The wall, a protective barrier with safety functions described in the UFSAR, in its modified condition, added a steel plate covering a recess that was cut into the wall and which could be raised to accommodate the new vendor's DFS transporter, which was longer than the previous transporter, and lowered to provide required radiation shielding when the transporter was not in use. When reviewing the process applicability determination form (72.48 and 50.59 screening), the inspectors questioned the licensee's underlying assumption that moving the steel plate to uncover the recess 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 plate was raised and the recess was exposed.

Subsequently, the inspectors engaged in discussions with technical experts within the NRC and with the licensee on the interpretation and applicability of guidance associated with 50.59 screenings and the Maintenance Rule. It was determined that no findings or violations existed with respect to the modification. Also, the inspectors, along with regional experts, verified the adequacy of the design change (i.e. wall modification) with respect to the existing radiation dose calculations to occupants of the technical support center and control room, which were located on the other side of the wall in question. The modification was determined to be bounded by the existing calculations and no adverse dose consequences would occur.

Prior to starting the DFS campaign in October 2016, the licensee re-evaluated the movement of the missile shield installed on the wall and preservation of the wall safety functions through compensatory actions, as needed. The inspectors reviewed this new evaluation and validated that the evolution of raising the steel plate to accommodate the

transporter was included in the procedures used for DFS campaign activities. These procedures controlled the position of the steel plate and the initiation of any needed compensatory actions. The inspectors observed the licensee's DFS campaign in October and November 2016, and did not identify any additional issues.

Based on the aforementioned discussions, reviews, and observations, this Unresolved Item is being closed. Documents reviewed are listed in the attachment.

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- operability testing of TT–0112HB, 'B' channel hot leg temperature transmitter after replacement;
- test run of P–51B, 'B' SFP cooling pump, after oil change;
- operability testing of the 'A' channel of the auxiliary feedwater actuation system (AFAS) following power supply replacement; and
- 1–1 DG operability run and surveillance test after replacement of jacket water pressure relay #2.

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 four post-maintenance testing samples as defined in IP 71111.19–05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

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–19B, 'B' high pressure safety injection pump surveillance test (routine);
- QO–15A, 'A' CCW pump inservice test (inservice test);
- QO–16B, 'B' containment spray pump surveillance test (routine); and
- RT–71M, class 2 leak test for safety injection and refueling water storage tank (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, 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, procedures, and applicable commitments;
- was measuring and test equipment calibration current;
- was test equipment within the required range and accuracy; 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 after testing;
- where applicable for inservice testing activities, was testing performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and were reference values consistent with the system design basis;
- 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, were reference setting data accurately incorporated into the test procedure;
- where applicable, were actual conditions encountering high resistance electrical contacts such that the intended safety function could still be accomplished;
- had prior procedure changes not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;

- was equipment returned to a position or status required to support the performance of its safety functions; and
- were all problems identified during the testing appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted three routine surveillance testing samples and one in-service test sample as defined in IP 71111.22, Sections–02 and–05.

b. Findings

No findings were identified.

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The regional inspectors performed an in-office review of the latest revisions to the Emergency Plan and Emergency Action Levels (EALs).

The licensee transmitted the Emergency Plan and EAL revisions to the NRC pursuant to the requirements of 10 CFR, Part 50, Appendix E, Section V, “Implementing Procedures.” The NRC review was not documented in a Safety Evaluation Report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspections.

This EAL and Emergency Plan Changes inspection constituted one sample as defined in IP 71114.04.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Occupational and Public Radiation Safety

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

.1 Radioactive Material Storage

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste were stored, and evaluated whether the containers were labeled in accordance with 10 CFR 20.1904, or controlled in accordance with 10 CFR 20.1905.

The inspectors assessed whether the radioactive material storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20. For materials stored or used in controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801 and 10 CFR 20.1802.

The inspectors evaluated whether the licensee established a process for monitoring the impact of low-level radioactive waste storage that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors evaluated the licensee's program for container inventories and inspections. The inspectors selected containers of stored radioactive material, and assessed these containers for indications of swelling, leakage, or deformation.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.2 Radioactive Waste System Walk-down

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in plant and/or vendor manuals.

The inspectors reviewed administrative and/or physical controls to assess whether equipment, which was not in service or abandoned in place, would contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59.

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what was described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59 or that changes to vendor equipment were made in accordance with vendor manuals. The inspectors also assessed the impact of these changes on radiation doses to occupational workers and members of the public.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers and assessed whether the waste stream mixing, sampling, and waste concentration averaging were consistent with the process control program, and provided representative samples of the waste product for the purposes of waste classification.

The inspectors evaluated whether tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's process control program correctly described the current methods and procedures for dewatering and waste stabilization.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

For select waste streams, the inspectors assessed whether the licensee's radiochemical sample analysis results were sufficient to support radioactive waste characterization as required by 10 CFR Part 61. The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analyses.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61.

The inspectors evaluated whether the licensee had established and maintained an adequate quality assurance program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.4 Shipment Preparation

a. Inspection Scope

The inspectors observed radiation workers during the conduct of radioactive waste processing and radioactive material shipment preparation activities.

The inspectors observed various aspects of shipment preparation. The inspectors assessed whether shippers were knowledgeable of the shipping regulations and demonstrated adequate skills to accomplish package preparation requirements. The inspectors evaluated whether the licensee was maintaining shipping procedures in accordance with current regulations. The inspectors assessed whether the licensee was meeting the expectations in NRC Bulletin 79–19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," and 49 CFR Part 172, Subpart H, "Training."

The inspectors evaluated whether the requirements for Type B shipment Certificates of Compliance had been met. The inspectors determined whether the user was a registered package user and had an NRC-approved quality assurance program. The inspectors assessed whether procedures for cask loading and closure were consistent with vendor procedures.

The inspectors assessed whether non-Type B shipments were made in accordance with the package quality documents.

The inspectors assessed whether the receiving licensee was authorized to receive the shipment packages.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.5 Shipping Records

a. Inspection Scope

The inspectors reviewed select shipments to evaluate whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and United Nations number. The inspectors assessed whether the shipment marking, labeling, and placarding was consistent with the information in the shipping documentation.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

b. Findings

No findings were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized, and were properly addressed for resolution. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involved radioactive waste processing, handling, storage, and transportation.

These inspection activities constituted one complete sample as defined in IP 71124.08–05.

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

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index—Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System (MS06) performance indicator (PI) for the period from the fourth quarter 2015 through the third quarter 2016. 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, MSPI derivation reports, CRs, event reports, and NRC Integrated IRs for the period of October 1, 2015, through September 30, 2016, 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 CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI emergency AC power system sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index—Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems (MS10) PI for the period from the fourth quarter 2015 through the third quarter 2016. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in NEI 99–02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, were used. The inspectors reviewed the licensee's operator narrative logs, CRs, MSPI derivation reports, event reports and NRC IRs for the period of October 1, 2015, through September 30, 2016, 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 CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI cooling water systems sample as defined in IP 71151–05.

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity PI for the period from the third quarter 2015 through the third quarter 2016. 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 2013, were used. The inspectors reviewed the licensee's reactor coolant system chemistry samples, technical specification (TS) requirements, CRs, event reports and NRC Integrated IRs to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Exposure Control Effectiveness PI for the period from the third quarter 2015 through the third quarter 2016. 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 2013, were used. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if the indicator-related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially

unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors sampled licensee submittals for the radiological effluent Technical Specification/Offsite Dose Calculation Manual radiological effluent occurrences PI for the period from the third quarter 2015 through the third quarter 2016. 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 2013, were used. The inspectors reviewed the licensee's CR database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one Radiological Effluent Technical Specification/Offsite Dose Calculation Manual radiological effluent occurrences sample as defined in IP 71151–05.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152)

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

a. Inspection Scope

As 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, adequate attention was being given to timely corrective actions, and adverse trends were identified and addressed. Minor issues that were entered into the licensee's CAP as a result of the inspectors' observations are not discussed in 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.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on classification of CRs as adverse or non-adverse, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the 6-month period of June 2016, through December 2016, although some examples expanded beyond those dates where the scope of the trend warranted.

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

This review constituted one semi-annual trend review inspection sample as defined in IP 71152.

Observations: The inspectors reviewed the licensee's classification of CRs as adverse or non-adverse to ensure that conditions adverse to quality were receiving the appropriate level of oversight and corrective actions within the CAP. The licensee identified an adverse trend in the screening of CRs in CR–PLP–2016–01694 and CR–PLP–2016–03722. The NRC biennial Problem Identification & Resolution team also identified some discrepancies in the screening of CRs reviewed for that inspection. Finally, the site Nuclear Independent Oversight (NIOS) organization also identified issues in this area.

The inspectors attended the station's Performance Review Group meetings to observe the licensee senior management screening of CRs. The inspectors also performed an independent assessment of the classification of CRs. Overall, the screening of CRs as adverse or non-adverse had improved over the 6 month review. The licensee's senior management team was engaged in the Performance Review Group meeting, provided a questioning attitude for CR screening, and openly discussed issues when questions arose. In general, conservative decision-making was demonstrated and issues were screened as adverse if the procedural guidance in EN–LI–102, "Corrective Action Program," was unclear. Issues identified during the inspectors' independent review of CRs were discussed with the licensee. These items were appropriately addressed within the CAP.

The inspectors also reviewed the licensee's corrective actions taken in response to the identified adverse trend. These actions included biweekly discussions with Department Performance Improvement Coordinators (DPICs), station leaders, and the Performance Improvement staff; re-screening of CRs that were identified as being classified incorrectly based on an extent of condition review; and additional information provided to the station staff on the difference between adverse and non-adverse conditions. Based on the improving trend observed by the station Performance Improvement group, NIOS organization, and through the inspectors' independent reviews, these corrective actions appeared to have appropriately addressed the adverse trend.

b. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues: Review of Enforcement Discretion Non-Cited Violations Identified During the 2015 Cyber-Security Inspection and Documented in Inspection Report 2015407 and Associated Corrective Action Documents

a. Inspection Scope

The inspectors selected the following CRs for an in-depth review:

- CR–PLP–2015–1753, "Cyber Question Regarding the Meteorological Tower Computer and its Dial-up Modem;"
- CR–PLP–2015–1997, "Meteorological Tower Data Connection from a Level 2 Critical Digital Asset (CDA) to a Level 3 CDA;"
- CR–PLP–2015–3070, "Method of Evaluating TS CDA's was Not in Alignment with OE [Operating Experience];" and
- CR–PLP–2015–3853, "Several Digital Assets Identified that Should Have Been Identified as CDAs."

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above CRs and other related CRs:

- complete and accurate identification of the problem in a timely manner commensurate with its safety significance and ease of discovery;
- consideration of the extent of condition, generic implications, common cause, and previous occurrences;
- classification and prioritization of the resolution of the problem commensurate with safety significance;
- identification of corrective actions, which were appropriately focused to correct the problem; and
- completion of corrective actions in a timely manner commensurate with the safety significance of the issue.

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

This review constituted a single follow-up inspection sample for in-depth review as defined in IP 71152–05.

b. Findings

No findings were identified.

.4 Annual Follow-up of Selected Issues: Failure of Right Train Emergency Diesel Generator Load Sequencer

a. Inspection Scope

The inspectors selected the following CRs for an in-depth review:

- CR–PLP–2016–03260, Right Train Sequencer Power Supply Failure; and
- CR–PLP–2016–03272, DG Load Sequencer DBA/NSD Processor-Circuit 2 Failed.

These CRs documented an issue that occurred on July 18, 2016 when the operators unexpectedly received alarm EK–1145, "Sequencer Trouble." Troubleshooting identified a failure of the right train DG load sequencer and power supply module, MC–34R101. This module had been replaced two days prior to receiving the Sequencer Trouble alarm as part of routine preventative maintenance activities. Post-maintenance testing following the conclusion of the preventative maintenance was completed satisfactorily on the same day that the maintenance was performed.

As a result of the module MC–34R101 failure, the 1–2 DG was declared inoperable and TS 3.8.1, "AC Sources - Operating," Condition B was entered. The licensee replaced the failed module and exited the TS. The licensee completed an equipment apparent cause evaluation (EACE) for this issue and performed a failure analysis on the module, MC–34R101.

As appropriate, the inspectors verified the following attributes during their review of the licensee's corrective actions for the above CRs and other related CRs:

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

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

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

b. Findings

Introduction. A finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was self-revealed for the licensee’s failure to promptly correct a condition adverse to quality. Specifically, the licensee failed to correct a condition adverse to quality associated with the emergency diesel generator (DG) load sequencer and power supply module.

Description. On July 18, 2016, control room operators unexpectedly received alarm EK–1145, “Sequencer Trouble.” Troubleshooting identified a failure of the right train DG load sequencer and power supply module, MC–34R101. This module had been replaced two days before, on July 16, 2016, as part of routine preventative maintenance activities. Post maintenance testing following the preventative maintenance was completed satisfactorily on July 16, 2016, the same day that the maintenance was performed. As a result of the safety-related module MC–34R101 failure, the 1–2 DG was declared inoperable and TS 3.8.1, “AC Sources - Operating,” Condition B was entered. The licensee subsequently replaced the failed module and exited the TS. The issue was entered into the licensee’s CAP as CR–PLP–2016–03260 and an EACE was completed for the equipment failure. Additionally, the licensee performed a failure analysis on the MC–34R101 module.

The licensee’s analysis concluded that the module failed due to the failure of an electrolytic capacitor on the load sequencer controller power supply. The apparent cause of the failure was determined to be that the electrolytic capacitors on the load sequencer power supply module were past their expected maximum lifetime when the module was purchased in 2006. Performing an internal operating experience review, the licensee identified a similar event that occurred on December 14, 2005.

The cause of the 2005 failure had been identified to be the aging and degradation of power supply components due to inadequate preventative maintenance. As a corrective action to address this cause, the licensee had developed preventative maintenance activities for MC–34L101 and MC–34R101, and developed shelf life criteria for the modules based on the aging of the electrolytic capacitors. The licensee also added a requirement for the modules to be purchased with the specification that installed electrolytic capacitors were less than two years old, which ensured that the lifetime of the electrolytic capacitors was not exceeded when taking into account shelf life and operating life of the module. For the 2016 event, the electrolytic capacitors on the right train DG load sequencer and power supply module that failed did not meet the requirement to be less than two years old when purchased in 2006.

Analysis. The failure to correct a condition adverse to quality associated with the DG load sequencer and power supply module was a performance deficiency that warranted a significance determination.

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 Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee failed to

correct a condition adverse to quality which would have prevented the 1–2 DG from automatically starting and loading on the prescribed signal.

The finding was screened in accordance with IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," dated July 1, 2012. The finding screened as having very low safety significance (Green) based on answering "No" to all the screening questions under the Mitigating Structure, System, and Components and Functionality section.

The inspectors concluded that the corrective actions for the condition of the aging electrolytic capacitors should have been implemented greater than three years ago and therefore the finding was not reflective of current licensee performance. As a result, no cross-cutting aspect was identified.

Enforcement. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected.

Contrary to the above, on July 16, 2016, the licensee failed to correct a condition adverse to quality. Specifically, the licensee failed to correct a condition adverse to quality associated with the 1–2 emergency diesel generator (DG) that was revealed when the 1–2 DG was rendered inoperable two days after maintenance was completed after installing degraded components. As part of their immediate corrective actions, the licensee replaced the failed components that caused the failure with appropriate components. Because this violation was of very low safety significance and it was entered into the licensee's CAP as CR–PLP–2016–03260, it is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.
(NCV 05000255/2016004–02, Failure to Correct an Adverse Condition Associated with Diesel Generator Load Sequencer Module)

4OA5 Other Activities

.1 (Closed) Apparent Violation 05000255/2014406–01; Willful Failure to Ensure Security Supervisory Employee was Qualified Prior to Employee Assuming Duties

(Closed) Apparent Violation 05000255/2014406–02; Inaccurate Information in Condition Report Regarding Security Supervisory Employee Qualifications Prior to Assuming Duties

On July 21, 2014, the NRC issued Confirmatory Order EA–14–013 (Order) in lieu of enforcement action to the licensee. The elements of the agreement between the NRC and the licensee are listed below. The inspector independently verified that the required actions were completed. The inspection results accompany each Order item.

Item V.A.1:	Requirement: By November 30, 2014, conduct a fleet-wide review of qualifications of each duty position in security to ensure that the qualifications for each position are clear and verifiable by all parties (security officers, security supervisors, and security manager). Inspection Results: The inspectors independently verified that all fleet sites completed a review of each duty position's qualifications to ensure

	the qualifications for each position were clear and verifiable. Entergy developed a fleet standard qualification matrix which listed each duty position and respective qualification required to fulfill that position. By October 30, 2014, all Entergy nuclear sites completed their site specific review of this qualification matrix.
Item V.A.2:	Requirement: By November 30, 2014, verify, or modify as necessary, the applicable security procedure to ensure both the assignor and assignee validate qualification before the assignee performs a duty position. Inspection Results: The inspectors independently verified that on November 6, 2014, EN–NS–221, "Security Organization, Standards, and Expectations," Revision 6, went into effect. This Entergy fleet procedure revision included Section 5.17, "Verifying Qualifications," which directed the person assigning work to verify the qualification of the person being assigned the work. This section also required the person performing the work to validate his/her own qualification prior to performing the assigned duty.
Item V.A.3:	Requirement: By June 30, 2015, conduct training associated with A.1 and A.2. Inspection Results: The inspectors reviewed the training that was developed to address A.1 and A.2. The training included the pre-job qualification review that was directed by EN-NS-221, Revision 6 (A.2) and instructions on the process to verify individual qualifications. The training also incorporated the fleet qualification matrix and explanations of duty positions, qualification tasks and methods to verify individual completion. The inspectors verified that all fleet nuclear sites had completed the training on or before June 30, 2015.
Item V.B.1:	Requirement: Through June 30, 2016, the Palisades Security Manager shall meet quarterly with each security team to reinforce the importance of a healthy Safety Conscious Work Environment (SCWE) and management's intolerance for retaliation and to discuss security concerns and issue resolution. Inspection Results: The inspectors independently reviewed the documents which captured the quarterly meetings between the security manager and the security team. The inspectors noted that during the licensee's effectiveness review, deficiencies were identified related to the content, accountability and documentation of these meetings. The licensee entered these deficiencies into the CAP and planned to continue with these meetings beyond the required action item from this Order. The inspectors determined that meetings between the security manager and staff occurred quarterly through June 30, 2016, and that the corrective actions were adequate to address these deficiencies that were identified during the licensee's effectiveness review.

Item V.B.2:	Requirement: Through June 30, 2016, the Palisades Security management shall maintain and update a "Security Top 10 Issues" board to reflect, among other things, the expected issues resolution dates. Inspection Results: The inspectors independently verified that a "Security Top 10 Issues" board was maintained and updated from the 3rd quarter of 2014 through the 2nd quarter of 2016. This list covered security-related deficiencies and other issues that required action. Due dates were assigned to action items, and these items were updated throughout the assigned time period.
Item V.B.3:	Requirement: By December 31, 2014, discuss safety culture aspects of the event with Palisades Nuclear Plant staff, including long-term contract staff, in three monthly tailgate meetings. The tailgate meetings shall include employee rights, licensee expectations with respect to raising issues, methods to raise issues, and the right to contact the NRC. Inspection Results: The inspectors reviewed the three monthly tailgate meetings that Entergy conducted in response to this action. Each meeting defined Nuclear Safety, provided an overview of the initiating event that was the subject of this Order, and provided an overview of safety culture traits and how they related to the event. The tailgate meetings provided information on raising concerns within and outside of the utility and included the option to bring the concern to the NRC should that become necessary to address the issue. The tailgate meetings were presented to the staff in September, October, and November of 2014.
Item V.B.4:	Requirement: By November 30, 2014, revise procedure EN–LI–102 to ensure that the Condition Review Group (CRG) chair considers whether the person assigned is sufficiently independent. This applies to condition reports that have challenges to a decision or a resolution that is highly dependent on a single individual. Fleet read and signs will be provided to each Entergy chair to inform them of the procedure revision and will be completed by January 31, 2015. Inspection Results: The inspectors independently reviewed EN–LI–102, "Corrective Action Program," Revision 24 for content and consideration as it related to this confirmatory order. The inspectors verified that Section 5.4, "Condition Report Screening" directed the CRG to determine responsible manager assignments. Specifically, Section 5.4 [6](d)(1) stated, "CRG considers whether the individual assigned is sufficiently independent (i.e. CRs that (have) challenges to a decision or resolution that is highly dependent on a single individual)." Entergy developed a read and sign which described the change to EN–LI–102, and the inspectors verified it was received by respective fleet CRG chairs on or before January 31, 2015.
Item V.B.5:	Requirement: By June 30, 2015, conduct a case study for supervisors and above throughout the Entergy fleet that highlights safety culture aspects of the event: questioning attitude, proceeding in the face of

	uncertainty, procedure compliance, and unresponsiveness to employee concerns. Inspection Results: The inspectors independently verified that Entergy developed a case study that highlighted the above listed safety culture aspects. All supervisors and above for all fleet nuclear sites were presented this case study on or before June 30, 2015.
Item V.C.1:	Requirement: By December 31, 2014, make a presentation to an industry security working group on this event. Provide the NRC an opportunity to review the presentation. Inspection Results: The inspectors independently reviewed the presentation that Entergy developed to address this action. The presentation provided an overview of the event, its regulatory impact, lessons learned, and corrective actions. This presentation was provided to the NRC for review on October 23, 2014 and was presented to the NEI Security Working Group Meeting held on November 4, 2014, in Washington DC.
Item V.C.2:	Requirement: By June 30, 2015, make a presentation at a broad industry meeting aimed at an audience beyond the security organizations and covering all four NRC regions. Inspection Results: The inspectors independently reviewed the presentation that Entergy developed to address this action. The presentation provided a summary of the event and its regulatory impact. The presentation also discussed safety culture traits, an explanation of careless disregard and an overview of the corrective actions associated with this event. This presentation was exhibited during the Winter meeting of the National Association of Employee Concerns Professionals on February 24, 2015, in Lake Buena Vista, Florida.
Item V.D:	Requirement: By December 31, 2014, revise procedure EN–FAP–HR–006 to include specific requirements for the selection and development of security managers. Inspection Results: The inspectors independently reviewed EN–FAP–HR–006, Revision 1, which added Security Superintendent/Manager to the Fleet approach to Leadership Development and Organizational Effectiveness. Specifically, characteristics and criteria for the selection of a security superintendent and/or manager were outlined. The revision was issued on December 23, 2014.
Item V.E:	Requirement: Conduct an effectiveness review of the actions discussed in Sections A and B of this Order. Complete this review between July 21, 2015 and July 20, 2016. Inspection Results: The inspectors verified that an independent review of the effectiveness of the actions outlined in Sections A and B of this Order

	was performed by an outside consulting company and was completed on June 16, 2016. The inspectors independently examined this effectiveness review and found it adequate. The reviewer captured deficiencies, which the licensee entered into its CAP.
Item V.F.1:	Requirement: Provide written status of each item in the Confirmatory Order to the Director of the Division of Reactor Safety, RIII at six months, one year, and annually thereafter until the terms of the Confirmatory Order are complete. Inspection Results: The inspectors independently verified that Entergy provided status updates to the Confirmatory Order at the specified time interval discussed above. Specifically, updates were transmitted to the Director of the Division of Reactor Safety on December 18, 2014; June 19, 2015; and June 16, 2016.
Item V.F.2:	Requirement: Upon completion of all terms of the Confirmatory Order, Entergy will provide the NRC with a letter discussing its basis for concluding that the Order has been satisfied. Inspection Results: On October 3, 2016, Entergy submitted a letter informing the NRC that all terms of the Confirmatory Order had been completed, thereby satisfying the Order obligations.

The inspectors independently verified that the required actions listed above were completed. In addition to the inspection activities directly related to this Confirmatory Order, the NRC has conducted numerous on-site inspections, interviews with plant staff, and record reviews focusing on SCWE-related issues throughout 2015 and 2016. These activities provided insight in evaluating overall licensee performance. Based on the licensee's actions described above, and in accordance with Confirmatory Order EA–14–013, the NRC has completed its review of the licensee's implementation of the conditions of the Order. In addition, Apparent Violations 05000255/2014406–01 and 05000255/2014406–02 are closed.

.2 Review of 10 CFR 72.212 Evaluations at Operating Plants

a. Inspection Scope

An inspection was performed of the licensee's control of heavy loads program that supported initial loading of the Holtec HI-STORM FW spent fuel dry cask storage system at the site. The purpose of this inspection was to verify the licensee had developed, implemented, and evaluated pre-operational testing activities to safely load spent fuel from the SFP into a Dry Cask Storage System (DCSS) and to transport the loaded DCSS to the Independent Spent Fuel Storage Installation (ISFSI).

The inspectors reviewed a sample of documents related to the control of heavy loads to assure structures and components relied upon for transport and laydown of the Holtec HI-STORM FW storage system had sufficient structural capacity with respect to the Palisades design and licensing basis and regulatory guidance.

Specifically, the inspectors reviewed structural design documents for a Fuel Building crane special lifting device, the Auxiliary Building structure, and underground commodities affected by operational and design basis loads for the Holtec HI-STORM FW storage system.

In particular, the inspectors, with assistance from the NRC Office of Nuclear Material Safety and Safeguards (NMSS), reviewed design documents related to the dynamic stability of the stack-up configuration during transfer of the Multi-Purpose Canister (MPC) from the HI-TRAC (transfer cask) into the HI-STORM (storage cask) with respect to Regulatory Issue Summary (RIS) 2015-013, "Seismic Stability Analysis Methodologies for Spent Fuel Dry Cask Loading Stack-Up Configuration," dated November 12, 2015, (ADAMS Accession No. ML15132A122).

In addition, the inspectors reviewed stack-up installation procedures to verify that the stack-up was constructed in accordance with the analyzed stack-up configuration that demonstrated dynamic stability during a postulated design basis seismic event.

b. Findings

Introduction: A finding of very low safety significance (Green) and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to establish measures to assure the applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the inspectors identified two instances when the stack-up configuration evaluated in design calculations that demonstrated stack-up dynamic stability during a postulated design basis seismic event was not correctly translated into procedures and instructions for the actual implementation of the stack-up.

Description: Regulatory Information Summary (RIS) 2015–13, "Seismic Stability Analysis Methodologies for Spent Fuel Dry Cask Loading Stack-Up Configuration," dated November 12, 2015, was issued to share information regarding acceptable seismic stability analysis methodologies to determine seismic stability of spent fuel dry cask loading stack-up configurations. As defined in RIS 2015–13, "The stack-up configuration refers to the condition when a transfer cask containing a canister loaded with spent fuel is resting on a storage overpack. While in the stack-up configuration, the loaded canister is lowered from the transfer cask to the storage overpack. During this transfer, when the transfer cask is not attached to a single-failure-proof crane, the stack-up is free-standing and the potential exists for the stack-up configuration to become unstable and tip over during a seismic event."

Similar to the above description, the loaded MPC canister is lowered from the HI-TRAC into the HI-STORM for the Holtec HI-STORM FW storage system. However, the Palisades stack-up configuration included four free-standing crib stands supporting the HI-PORT (wheel lift transporter) with the HI-STORM bolted to the HI-PORT structure due to structural capacity limitations of the Auxiliary Building trackway slab and the Fuel Building crane rated load capacity. The seismic stability of this stack-up configuration was evaluated in calculation HI–2146170, "HI-STORM/HI-TRAC Stack-up Dynamic Analysis using LS-DYNA," Revision 2. As noted above, this calculation was reviewed with assistance from structural dynamics technical experts in NMSS.

The inspectors reviewed procedures FHS-M-41D, "HI-STORM FW Dry Fuel Loading Operations – MPC Transfer to HI-STORM," Revision 0 (effective February 17, 2015), and FHS–M–41E, "HI-STORM FW Dry Fuel Loading Operations – HI-STORM Site Transportation," Revision 0 (effective February 17, 2015), to verify that the installed stack-up configuration was constructed in conformance with the stack-up configuration evaluated in calculation HI–2146170. The inspectors identified stack-up installation non-conformances with respect to calculation HI–2146170 that included the following:

- In the stack-up configuration, components were bolted together to form a single structure. The inspectors identified that drawing 8625 allowed a 1/16" gap for cleats that connected the mating device to the HI-TRAC transfer cask flange. Specifically, the inspectors were concerned that reaction force redistribution due to bolt gaps and potential impact forces would cause actual bolt loads to be higher than analyzed with a potential for cleat components to be overstressed. The inspectors also noted that the bolting evaluation in calculation HI-2146170 did not consider the effect of a bolt installation gap. On February 4, 2016, the licensee initiated CR–PLP–2016–00646 to address this concern. In addition, the inspectors identified a gap at one cleat that connected the HI-PORT transporter to the HI-STORM storage cask flange during NRC dry run operations. On September 22, 2016, the licensee initiated CR–PLP–2016–04497 to address this concern.

- Crib stands that supported the HI-PORT transporter were free to slide on steel floor plates. The interfacing coefficient of friction used in calculation HI–2146170 was based on steel surfaces with an oxide layer consistent with RIS 2015–13 guidance. However, the inspectors identified that the installed steel floor plate surface was painted. The inspectors identified that calculation HI–2146170 did not evaluate whether the painted steel plate surface would produce conservative analysis results compared to the evaluated unpainted steel surface. On March 15, 2016, the licensee initiated CR–PLP–2016–01308 to address this concern.

- The inspectors reviewed procedure FHS–M–41E to verify that the installed stack-up configuration was restrained in accordance with calculation HI–2146170. The inspectors noted that procedure FHS–M–41E did not require installation of physical torsional restraints as was assumed in the computer model representing the stack-up configuration.

- The inspectors determined that calculation HI–2146170 did not include the entire HI-PORT transporter structure in the computer model of the stack-up configuration. To include the effect of the truncated portion of the HI-PORT transporter structure, the calculation derived equivalent torsional restraint to represent the rotational stiffness of the truncated portion of the HI-PORT transporter structure. In the simplified computer model, the derived torsional restraints were applied to represent the torsional resistance effect of the truncated portion of the HI-PORT transporter; not physical restraints to inhibit rotation of the HI-PORT transporter. With respect to the simplified computer model, the inspectors had concerns regarding the accuracy of the calculation HI–2146170 simulated stack-up computer model and computer analysis results. Specifically, the derivation of equivalent torsional restraints representing the truncated portion of the HI-PORT transporter resulted in a negative torsional

stiffness property that was not consistent with the definition of restraint stiffness or restraint input into a computer model using LS-DYNA software. Specifically, the calculation did not demonstrate that the computer analysis results for the truncated HI-PORT structure with the derived torsional restraint was equivalent to computer analysis results where the entire HI-PORT structure was modeled. Therefore, the inspectors questioned if the computer results for the analyzed stack-up model with a truncated HI-PORT structure was non-conservative. Specifically, the inspectors were concerned that the modeled restraint may be required to be physically installed to ensure a dynamically stable stack-up configuration during a postulated design basis seismic event. On May 31, 2016, the licensee initiated CR–PLP–2016–01588 to address this concern.

The licensee generated a new seismic analysis to demonstrate dynamic stability of the stack-up configuration that addressed the above concerns. The inspectors reviewed LPI Inc. Report A16173–R–001, “Report for the Seismic Stability Analysis of DFS Stack-Up in the Auxiliary Building,” Revision 0, with assistance from structural dynamics technical experts in NMSS. Based on Report A16173–R–001 results, the licensee modified the HI-PORT to HI-STORM cleat flange plate to a higher strength steel.

The inspectors reviewed revised procedures FHS–M–41D, Revision 3, and FHS–M–41E, Revision 3, to verify the stack-up configuration was installed as analyzed and documented in Report A16173–R–001. The inspectors identified that the procedures allowed a 1/16” cleat installation gap at the HI-STORM and HI-PORT flanges, and the effect of these allowed gaps was not evaluated in Report A16173–R–001. In particular, the inspectors noted the relatively low calculated design margin for the modified HI-PORT to HI-STORM cleat flange plates and were concerned these plates could be overstressed if the effect of installation gaps was evaluated. On October 10, 2016, the licensee initiated CR–PLP–2016–04826 and revised procedures FHS–M–41D and FHS–M–41E to eliminate cleat gaps at the HI-STORM and HI-PORT flanges prior to performing stack-up operations with spent fuel in the MPC.

Analysis: The inspectors determined that the failure to accurately translate the analyzed stack-up configuration into drawings and procedures (and to actually implement the stack-up as analyzed) was a performance deficiency that warranted a significance determination.

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 Barrier Integrity cornerstone attribute of Design Control and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Specifically, the analyzed stack-up configuration demonstrated the stack-up configuration would be dynamically stable if subjected to a design basis seismic event. The stack-up operation that transferred the MPC from the HI-TRAC into the HI-STORM was performed inside the Auxiliary Building. In addition, the inspectors reviewed licensee calculations that demonstrated the Auxiliary Building had sufficient structural capacity to withstand the stack-up reaction forces calculated for the analyzed stack-up configuration. Therefore, the licensee’s failure to install the stack-up in conformance with the analyzed stack-up configuration resulted in a stack-up configuration that did not ensure stack-up dynamic stability or Auxiliary Building

structural capacity to maintain radiological barrier functionality during a design basis seismic event.

Utilizing IMC 0609, Appendix A, Exhibit 3, effective July 1, 2012, the inspectors screened the finding as Green by answering "Yes" to the Barrier Integrity screening question related to the finding only representing a degradation of the radiological barrier function provided for the Auxiliary Building because it did not result in the loss of operability or functionality of the Auxiliary Building. Specifically, due to intervention by the inspectors, the licensee modified the HI-PORT to HI-STORM cleat flange plate material and revised procedures that installed the stack-up configuration in conformance with stack-up seismic stability design Report A16173–R–001 prior to performing stack-up operations with spent nuclear fuel in the MPC.

The finding had a cross-cutting aspect of Field Presence in the Human Performance cross-cutting area because licensee senior managers failed to ensure effective supervisory and management oversight of contractor activities related to the seismic analysis and installation of the stack-up configuration [H.2].

Enforcement: 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure the applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, the licensee failed on two occasions to assure the design basis of the spent fuel dry cask storage stack-up was correctly translated into drawings, procedures, and instructions. Specifically, as of February 17, 2015, procedures FHS–M–41D, Revision 0, and FHS–M–41E, Revision 0, were used to construct the stack-up configuration in the safety-related auxiliary building and did not correctly translate the configuration analyzed in stack-up seismic stability design calculation HI–2146170. Also, as of October 10, 2016, procedures FHS–M–41D, Revision 3, and FHS–M–41E, Revision 3, were used to construct the stack-up configuration with cleat gaps and did not correctly translate the analysis of cleat components without gaps provided in stack-up seismic stability design report A16173–R–01.

The licensee documented these issues in CRs CR–PLP–2016–00646, CR–PLP–2016–01308, CR–PLP–2016–01558, CR–PLP–2016–04497, and CR–PLP–2016–04826. This violation is being treated as a NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's CAP. Corrective actions included re-analysis of the stack-up seismic design basis calculation and revising instructions in procedures FHS–M–41D and FHS–M–41E to construct the stack-up configuration in conformance with stack-up seismic stability design report A16173–R–001.
(NCV 05000255/2016004–03, Failure to Translate Design Analysis Stack-up Configuration into Specifications, Drawings, Procedures, and Instructions)

.3 Review of 10 CFR 72.212(b) Evaluations at Operating Plants

a. Inspection Scope

The inspectors evaluated the licensee's compliance with the requirements of 10 CFR 72.212 and 10 CFR 72.48. The inspection consisted of interviews with cognizant personnel and a review of documentation.

Prior to use of a DCSS, written evaluations were required of the licensee per 10 CFR 72.212(b)(5)(i) to establish that the terms, conditions, and specifications of a Certificate of Compliance (CoC) or an amended CoC had been met. Additionally, prior to use, written evaluations to demonstrate that the requirements of 10 CFR 72.104 were met were required per 10 CFR 72.212(b)(5)(iii). "Palisades 10 CFR 72.212 Evaluation Report for the Holtec International HI-STORM FW Storage System Report No. PLP 721032," Revision 1, documented these evaluations before use of a DCSS under the site's 10 CFR Part 72 general license.

The inspectors reviewed and assessed the licensee's 10 CFR 72.212 Evaluation Report to verify that applicable reactor site parameters, such as fire and explosions, tornadoes, wind-generated missile impacts, seismic qualifications, lightning, flooding, and temperature, had been evaluated for acceptability with bounding values specified in the Holtec HI-STORM FW UFSAR and associated analyses in accordance with 10 CFR 72.212(b)(6).

Per 10 CFR 72.212(b)(8), prior to use, the licensee was required to determine whether activities under the general license involve a change to the facility TSs or require a license amendment. The inspectors reviewed the licensee's 10 CFR 72.212 Evaluation Report conclusion that a facility license amendment was not necessary.

b. Findings

Introduction: The inspectors identified a Severity Level IV NCV of 10 CFR 72.212(b)(6), "Conditions of a General License Issued under 72.210," for the failure of the licensee to adequately determine whether the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases.

Description: Title 10 CFR 72.212(b)(6) required that the licensee review the Safety Analysis Report referenced in the CoC or amended CoC and the related NRC Safety Evaluation Report (SER) prior to use of the general license, to determine whether or not the reactor site parameters, including analyses of earthquake intensity and tornado missiles, were enveloped by the cask design bases considered in these reports.

The tornado missile design criteria reactor site parameters as discussed in 10 CFR 72.212(b)(6) were defined in the Palisades UFSAR, Revision 31, Section 5.5.

The tornado missile design bases for the casks as discussed in 10 CFR 72.212(b)(6) were defined in the Holtec HI-STORM FW FSAR, Revision 3. The cask was analyzed to withstand tornado missiles described in Regulatory Guide 1.76, "Design Basis Tornado and Tornado Missiles for Nuclear Power Plants."

The inspectors identified that the HI-STORM FW Final Safety Analysis Report (FSAR) described a different, and unbounding, set of missiles than those described in the Palisades UFSAR.

On March 9, 2015, the licensee completed Report No. PLP 721032, "Palisades 10 CFR 72.212 Evaluation Report for the Holtec International Hi-STORM FW Storage System," Revision 0, in part to fulfill the requirements of 10 CFR 72.212(b)(6). However, the report failed to identify that an additional analysis was needed to demonstrate whether or not the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases.

As a result of the inspectors' concerns, the license generated CR–PLP–2016–01210 and initiated actions to perform an additional analysis to demonstrate that the HI-STORM FW cask system at Palisades could withstand the effects of a tornado missile impact prior to utilization.

Furthermore, the inspectors identified that the licensee had similarly failed to determine whether or not the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases for the loaded VSC–24, NUHOMS 32PT, and 24PTH dry storage casks.

The licensee generated CR–PLP–2016–01211 and CR–PLP–2016–01212, and initiated actions to perform an additional analysis to demonstrate that all the cask systems in use at Palisades could withstand the effects of a tornado missile impact.

Analysis: The failure of the licensee to adequately determine whether the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases was contrary to the requirements of 10 CFR 72.212(b)(6) and was a performance deficiency. Consistent with the guidance in Section 2.2 of the NRC Enforcement Policy, ISFSIs are not subject to the Significance Determination Process (SDP) and, thus, traditional enforcement was used to evaluate this issue. Traditional enforcement violations are not assessed for cross-cutting aspects.

The inspectors determined that the violation was of more than minor significance using Example 3.i of Appendix E, "Examples of Minor Issues," dated August 11, 2009, of IMC 0612, "Power Reactor Inspection Reports," since additional analyses were needed to ensure accident analysis requirements were met. Consistent with the guidance in Section 1.2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) Commensurate with its safety significance; and (2) informed by similar violations addressed in the Violation Examples. The inspectors determined that the violation could be evaluated, using Section 6.5.d.1 of the NRC Enforcement Policy, as a Severity Level IV Violation because the licensee failed to meet a regulatory requirement that had a more than minor safety significance.

Enforcement: 10 CFR 72.212(b)(6) requires, in part, that the licensee review the Safety Analysis Report referenced in the certificate of compliance (CoC) or amended CoC and the related NRC Safety Evaluation Report (SER), prior to use of the general license, to determine whether the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports.

Contrary to the above, on March 9, 2015, the licensee failed to adequately review the Safety Analysis Report referenced in the CoC or amended CoC and the related NRC SER, prior to use of the general license, to determine whether or not the reactor site parameters, including analyses of earthquake intensity and tornado missiles, were enveloped by the cask design bases considered in these reports. Specifically, the report failed to identify that an additional analysis was needed to demonstrate whether or not the reactor site parameters, including the analyses of tornado missiles, were enveloped by the cask design bases.

The licensee performed a revision to its evaluations and entered the issues into their CAP. Because this issue was of very low safety significance (Severity Level IV), and

was entered into the licensee's CAP, this violation is being treated as a NCV consistent with Section 2.3.2 of the Enforcement Policy. **(NCV 07200007/2015001–01, Cask Evaluations Did Not Meet 10 CFR 72.212(b)(6) Requirements)**

.4 Preoperational Testing of Independent Spent Fuel Storage Installations at Operating Plants

a. Inspection Scope

The inspectors reviewed documents, interviewed plant personnel, and performed in-field observations to assess the licensee's preoperational testing of an ISFSI. The inspectors reviewed ISFSI loading and unloading procedures to ensure that they met the commitments and requirements in the UFSAR, the CoC, 10 CFR Part 72, and the TSs. The inspectors verified that the loading and unloading procedures were prepared, reviewed, and approved in accordance with the licensee's administrative programs, and that the procedures ensure all required critical activities would be performed. The inspectors also reviewed selected 72.48 and 50.59 reviews related to ISFSI operations.

A review of corrective action reports related to ISFSI activities written during the inspection period indicated that the licensee was identifying and correcting conditions adverse to quality.

The inspectors performed an independent assessment to determine whether the licensee had adequately demonstrated its readiness to safely perform ISFSI loading and unloading operations.

(1) Dry Run Activities

During this inspection period, the licensee performed pre-operational dry run activities in order to satisfy the ninth condition of the HI-STORM FW MPC Storage System CoC, docket number 072–01032, Amendment 1, Revision 1. NRC inspectors were onsite to observe these dry run activities.

Specifically, the inspectors observed the licensee perform the following activities: welding and non-destructive examination of an MPC; helium leak testing; forced helium dehydration (FHD) operations with a mock-up MPC; uploading, or transferring of an MPC simulator from the HI-STORM to the HI-TRAC; downloading, or transferring of the simulator from the HI-TRAC to the HI-STORM; transporting the HI-STORM and the simulator from the Fuel Handling Building to the ISFSI pad; moving a dummy spent fuel assembly from the SFP rack into an MPC; verifying the fuel loaded into an MPC; moving the HI-TRAC and the MPC from the SFP to the cask wash down pit; and performing radiation and contamination surveys.

The inspectors observed the licensee's oversight process, use of command and control, and control of both simulated and actual radiological hazards during dry run activities through both interviews with licensee personnel and procedural reviews.

(2) Fuel Selection

The inspectors reviewed the licensee's program associated with fuel characterization and selection for storage. The inspectors reviewed cask fuel selection packages to verify that the licensee was loading fuel in accordance with Appendix B of the CoC.

(3) Radiation Protection

The inspectors evaluated the licensee's radiation protection (RP) program pertaining to the operation of the ISFSI. The inspectors observed licensee RP technicians simulate dry run activities and interviewed both RP and other licensee personnel to verify their knowledge regarding the scope of the work and the radiological hazards associated with transfer and storage of spent fuel. The inspectors reviewed radiological surveys, both actual and simulated.

(4) Training

The inspectors reviewed the licensee's training program, which consisted of classroom and on-the-job training to ensure involved staff were adequately trained for the job they were responsible to perform. The inspectors interviewed licensee personnel to verify that they were knowledgeable of the scope of work that was being performed.

(5) Emergency Preparedness, Surveillance, Fire Protection, and Quality Assurance Activities

The inspectors reviewed selected licensee procedures to ensure that responsibilities for specific ISFSI activities had been defined and that these responsibilities had been integrated into the appropriate plant programs. The inspectors reviewed station emergency preparedness, surveillance, fire protection and quality assurance procedures to ensure that they met the commitments and requirements as specified in the UFSAR, the CoC, 10 CFR Part 72, and TSs.

b. Findings

No findings were identified.

.5 Operation of an Independent Spent Fuel Storage Installation at Operating Plants

a. Inspection Scope

The inspectors reviewed documents, interviewed plant personnel, and performed in-field observations to assess the licensee's performance as it related to the operation of the ISFSI. The inspectors evaluated whether changes made to the programs and procedures since the last inspection were consistent with the license or CoC, and did not reduce the effectiveness of the program. The inspectors also reviewed whether changes were evaluated in accordance with 10 CFR 72.212(b), 10 CFR 50.59, and 10 CFR 72.48. The inspectors independently assessed whether dry cask storage activities were performed in a safe manner and in compliance with approved procedures. The inspectors verified that the licensee had identified each fuel assembly placed in the independent spent fuel storage installation (ISFSI), had recorded the parameters and characteristics of each fuel assembly, and had maintained a record of each fuel assembly as a controlled document.

Specifically, the inspectors observed the licensee perform the following activities: moving spent fuel assemblies into the MPC, closure welding, hydrostatic testing on the MPC lid-to-shell weld, conducting FHD non-destructive examination (both visual and dye penetrant examinations), rigging for heavy load lifts, and decontamination activities. The

inspectors also reviewed the following documents: radiological surveys, selected 72.48 reviews, and records of fuel assemblies and physical inventories.

A review of condition reports generated since the last ISFSI inspection indicated that the licensee was effectively identifying and correcting conditions adverse to quality.

b. Findings

Introduction: The inspectors identified a Severity Level IV NCV of 10 CFR 72.146, "Design Control," for the failure of the licensee to correctly translate the results of the fire and explosion hazards analyses performed, as required by 10 CFR 72.212(b)(6), into appropriate specifications, drawings, procedures, and instructions.

Description: Fire and explosion hazard analyses were required to be performed per 10 CFR 72.212(b)(6) to determine whether reactor site parameters were enveloped by the cask design bases in the cask FSAR to ensure that SSCs that are important to safety will perform their safety functions during postulated accident conditions.

A fire hazard analysis in the Holtec HI-STORM FW FSAR, HI–2114830, Revision 3, Section 2.2.3.c., analyzed a postulated fire following the spillage and ignition of fuel from a transporter. The licensee performed a site-specific fire hazard analysis, EA–EC42425–22, "Three Dimensional Thermal Hydraulic Analysis for Palisades Site-Specific HI-STORM FW System HI–2145976," Revision 0, that considered the site-specific fire hazard of two vehicles simultaneously.

Procedure FHS–M–41E, "HI-STORM FW Dry Fuel Loading Operations – HI-STORM Site Transportation," Revision 5, Step 4.2.18 specified a limit on vehicle fuel loads within a given proximity to a loaded cask. However, this procedural limit was not bounded by the site-specific fire analysis performed in HI–2145976. Additionally, the differentiation, stated in Step 4.2.18, of requiring that vehicles be positively controlled or attended, had no justification specified in the site-specific fire analysis. The signage on the ISFSI pad, on which the HI-STORM FW casks were stored, also had a non-conservative limit on the amount of fuel that could be stored there. The licensee's fleet-wide procedure EN–DC–161, Revision 15, "Control of Combustibles," likewise did not limit the amount of combustibles allowed near the HI-STORM FW casks at the ISFSI to the bounding site-specific fire hazard analysis.

A site-specific explosion hazard analysis was performed in calculation EA–EC42425–07, "Palisades ISFSI & Haul Path Summary Analysis for Dynamic Structural Cask Tip-Over and Hazards Evaluations HI–2135588," Revision 0. This calculation resulted in the establishment of minimum standoff distances required for specific amounts of fuel from a loaded cask.

In procedure FHS–M–41E, "HI-STORM FW Dry Fuel Loading Operations – HI-STORM Site Transportation," Revision 5, Step 4.2.17 stated, "Unattended, parked vehicles shall be spaced a minimum distance from the loaded HI-STORM as shown in Table 4.2.17 to minimize the effects of fires and/or explosions during transport and ISFSI operations." Table 0 of Step 4.2.17, "Unattended Parked Vehicle Minimum Distances," limited gasoline or diesel fuel tanks of certain capacities to specific minimum distances. However, the inspectors noted that one of these procedural limits was not bounded by the results of the site-specific explosion hazard analysis EA–EC42425–07. Also, the fact that these procedural limits only applied to unattended vehicles had no justification in the

site-specific explosion hazard analysis. The licensee's fleet-wide procedure, EN–DC–161, "Control of Combustibles," Revision 15, likewise did not limit the amount of combustibles permitted near the HI-STORM FW casks at the ISFSI to the bounding site-specific explosion hazard analysis.

The licensee entered these issues into their CAP as CR–PLP–2016–05470 and CR–PLP–2016–05475. Although adequate procedural controls were not in place, a walkdown of the ISFSI pad was performed by the licensee on November 16, 2016, to verify no combustibles were being stored on the ISFSI pad. The first HI-STORM FW cask system was placed into service on the ISFSI pad by the licensee on October 22, 2016, the date on which such controls should have been in place.

Analysis: The licensee's failure to correctly translate the results of the fire and explosion hazards analyses performed into appropriate specifications, drawings, procedures, and instructions as specified in 10 CFR 72.146 was a performance deficiency. In accordance with Section 2.2 of the Enforcement Policy, ISFSIs are not subject to the SDP and traditional enforcement will be used for these facilities. Traditional enforcement violations are not assessed for cross-cutting aspects.

The inspectors determined that the violation was of more than minor significance using IMC 0612, "Power Reactor Inspection Reports", Appendix E, "Examples of Minor Issues." Example 4.k was applicable to this example in that the lack of appropriate procedural controls allowed for a credible unanalyzed fire and explosion scenario that could affect the important-to-safety DCSS. Consistent with the guidance in Section 1.2.6.D of the NRC Enforcement Manual, if a violation does not fit an example in the Enforcement Policy Violation Examples, it should be assigned a severity level: (1) commensurate with its safety significance, and (2) informed by a similar violation addressed in the violation examples. The inspectors found no similar violations in the violation examples. As no combustibles were being stored on the ISFSI pad and the transport vehicles used to move the casks to the ISFSI were within the fire hazard analysis, the violation was determined to be of very low safety significance (Severity Level IV).

Enforcement: Title 10 CFR 72.146 requires, in part, that the licensee establish measures to ensure that the applicable regulatory requirements and the design basis, as specified in the license or CoC application for those structures, systems, and components to which this section applies, are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, beginning on October 22, 2016, the licensee did not have adequate measures to ensure that the site-specific fire and explosion hazards analyses were correctly translated into procedures. Specifically, neither procedure FHS-M-41E, "HI-STORM FW Dry Fuel Loading Operations – HI-STORM Site Transportation," Revision 5, nor procedure EN–DC–161, "Control or Combustibles" Revision 15, instituted adequate combustible control measures for the ISFSI storage pad, in accordance with the results from the fire hazard analysis in calculation EA–EC42425–22, Revision 0, and the explosion hazard analysis in calculation EA–EC42425–07, Revision 0.

The licensee entered these issues into their CAP as CR–PLP–2016–05470 and CR–PLP–2016–05475. Because this issue was of very low safety significance (Severity Level IV) and was entered into the licensee's CAP, this violation is being treated as a NCV, consistent with Section 2.3.2 of the Enforcement Policy.
(NCV 07200007/2016001–01, Fire and Explosion Hazards Analyses Were Not Adequately Translated to Procedural Controls)

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 23, 2017, the inspectors presented the inspection results to Mr. C. Arnone, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the Radiation Safety Program review with Mr. D. Nestle, Radiation Protection Manager, on December 2, 2016;
- The inspection results for the Annual Review of EAL and Emergency Plan Changes with the licensee's Emergency Preparedness Manager, Mr. D. Malone, on December 20, 2016;
- The inspection results for the review of licensee actions for Confirmatory Order EA–14–013 with Mr. C. Arnone, Site Vice President, on January 23, 2017; and
- The inspection results for the Independent Spent Fuel Storage Installation pre-operational and initial loading inspections with Mr. C. Arnone, Site Vice President, on January 23, 2017.

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

4OA7 Licensee-Identified Violations

The following licensee-identified violation of NRC requirements was determined to be of very low safety significance or Severity Level IV and met the NRC Enforcement Policy criteria for being dispositioned as an NCV.

Title 10 CFR 72.212(b)(5), "Conditions of General License Issued Under §72.210," states, in part, that written evaluations shall be performed, prior to use, that establish that the requirements of 10 CFR 72.104 have been met. These written evaluations are to demonstrate that a cask, once loaded with fuel, will not exceed the annual dose limits specified in 10 CFR 72.104. Contrary to the above, on October 12, 2016, it was discovered that certain fuel assemblies loaded into a spent fuel cask contained solid stainless steel rods that were not considered in the radiological evaluations as required to demonstrate that the criteria specified in 10 CFR 72.104 were met. The licensee documented completion of these evaluations in the 72.212 report, PLP 721032, Revision 1, dated August 23, 2016. This issue was identified by the licensee when the cask was lifted out of the SFP and radiological dose rates were higher than anticipated.

However, no regulatory or administrative radiological limits were exceeded and the cask remained in the vicinity of the SFP while the licensee performed an investigation. This issue was entered into the licensee's CAP as CR–PLP–2016–04893. The licensee opted to return the cask to the SFP to investigate fuel records further before continuing to process the cask. Ultimately, the site unloaded the fuel assemblies from the cask and placed them back into their storage location within the SFP. Fuel assemblies without stainless steel rods were ultimately placed in the cask and processed for storage. The radiological conditions for the loaded cask were verified by the inspectors to be well within regulatory limits. Consistent with the guidance in Section 2.2 of the NRC Enforcement Policy, ISFSIs are not subject to the SDP and, thus, traditional enforcement was used to screen this issue. The inspectors determined that the issue was similar to Enforcement Policy Example 6.5.d.1, in that the licensee failed to meet a regulatory requirement with more than minor significance. As such, the inspectors screened the issue as having very low safety significance (i.e., Severity Level IV).

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

C. Arnone, 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
T. Crocker, Senior Project Manager
D. Lucy, Production Manager
T. Davis, Regulatory Assurance
B. Dotson, Regulatory Assurance
J. Erickson, Regulatory Assurance
O. Gustafson, Director of Regulatory and Performance Improvement
J. Hardy, Regulatory Assurance Manager
J. Haumersen, Site Projects and Maintenance Services Manager
G. Heisterman, Maintenance Manager
G. Hubers, Civil Design Engineer
M. Lee, Operations Manager – Support
N. DeMaster, 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

U.S. Nuclear Regulatory Commission

E. Duncan, Chief, Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000255/2016004–01	NCV	Failure to Have Appropriate Controls in Place for Combustible Materials (1R05.1)
05000255/2016004–02	NCV	Failure to Correct an Adverse Condition Associated with Diesel Generator Load Sequencer Module (4OA2.4)
05000255/2016004–03	NCV	Failure to Translate Design Analysis Stack-up Configuration into Specifications, Drawings, Procedures, and Instructions (4OA5.2)
07200007/2015001–01	SL-IV NCV	Cask Evaluations Did Not Meet 10 CFR 72.212(b)(6) Requirements (4OA5.3)
07200007/2016001–01	SL-IV NCV	Fire and Explosion Hazards Analyses Were Not Adequately Translated to Procedural Controls (4OA5.5)

Closed

05000255/2016004–01	NCV	Failure to Have Appropriate Controls in Place for Combustible Materials (1R05.1)
05000255/2016001–01	URI	Design Review of Modification to Track Alley Wall for Dry Fuel Storage Campaign (1R18)
05000255/2016004–02	NCV	Failure to Correct an Adverse Condition Associated with Diesel Generator Load Sequencer Module (4OA2.4)
05000255/2014406–01	AV	Willful Failure to Ensure Security Supervisory Employee was Qualified Prior to Employee Assuming Duties (4OA5.1)
05000255/2014406–02	AV	Inaccurate Information in Condition Report Regarding Security Supervisory Employee Qualifications Prior to Assuming Duties (4OA5.1)
05000255/2016004–03	NCV	Failure to Translate Design Analysis Stack-up Configuration into Specifications, Drawings, Procedures, and Instructions (4OA5.2)
07200007/2015001–01	SL-IV NCV	Cask Evaluations Did Not Meet 10 CFR 72.212(b)(6) Requirements (4OA5.3)
07200007/2016001–01	SL-IV NCV	Fire and Explosion Hazards Analyses Were Not Adequately Translated to Procedural Controls (4OA5.5)

LIST OF DOCUMENTS REVIEWED

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

1R01 Adverse Weather Protection

- Admin 4.00, Operations Organization Responsibilities and Conduct, Revisions 58 and 59
- Admin 4.02, Control of Equipment, Revision 75
- Admin 4.28, Control of Palisades Switchyard Activities, Revision 9
- AOP-38 Basis, Acts of Nature Basis, Revision 6
- AOP-38, Acts of Nature, Revision 6
- COP-22, Diesel Fuel Oil Testing Program, Revision 28
- COP-22A Basis, Diesel Fuel Oil Testing Program Basis, Revision 16
- C-PAL-99-0981, Diesel Fuel Oil (T-10A) Parameter of Cloud Point Out of Administrative Limits, June 7, 1999
- CR-PLP-2016-00156, Caulking on Seam of Lagging and Around Conduit Coming Out of LT-2020, Primary Storage Tank Transmitter, was Degrading, 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-2016-01196, During Rounds a Puddle was Noted on the East Side of EX-05, Startup Transformer 1-3, Under and Behind the Alarm Panel, March 9, 2016
- CR-PLP-2016-03003, Spot of Surface Corrosion on EX-07, Safeguards Transformer 1-1, Oil Radiator, June 29, 2016
- CR-PLP-2016-04395, Found an Oil Leak on the North Side of EX-10, Main Transformer, September 19, 2016
- CR-PLP-2016-05093, Operations Received Notice from ITC of a Geomagnetic Storm Disturbance with K-Index Greater than 7, October 25, 2016
- CR-PLP-2016-05101, VUH-4 Fan Rotated in the Wrong Direction and Did Not Blow Air, October 25, 2016
- CR-PLP-2016-05102, VUH-906A, Unit Heater, had a Steam Leak Coming from the Heating Coil, October 25, 2016
- CR-PLP-2016-05150, Issues with Checklist Discovered While Performing SOP-23, Cold Weather Checklist, Page 16 of Attachment 8, October 26, 2016
- CR-PLP-2016-05188, Piping Insulation Between T-90, Primary System Makeup Storage Tank, and LT-5201, Primary System Makeup Tank T-90 Level, has Been Smashed Down Causing Gaps and Breaks in the Sealant, October 30, 2016
- CR-PLP-2016-05189, Piping Insulation Between T-41, Turbine Building Drain Tank, and MV-RW-135, Turbine Building Drain Tank Outlet to Mixing Basin, has Cracking and Breaks in the Sealant, October 30, 2016
- CR-PLP-2016-05190, Noticed Missing Sealant on the Piping Insulation for the Chemical Addition Line to P-8C Suction, October 30, 2016
- CR-PLP-2016-05462, V-9B, Turbine Building Ventilation Unit, Recirculating Air Damper has Several Linkage Arms Disconnected, November 15, 2016
- CR-PLP-2016-05507, Found a Ground Indication on Heat Trace Panel EC-100A, November 17, 2016

- CR-PLP-2016-05533, Six Points on Insulation Boxes Around T-2, Condensate Storage Tank (LT-2021/2022), and T-81, Primary Makeup Water Tank (LT-2020), Where Small Amounts of Caulking were Missing, November 18, 2016
- CR-PLP-2016-05585, The Caulking Around the Box Containing LT-0332A, Safety Injection and Refueling Water Tank Level Transmitter, and LT-0332B, Safety Injection and Refueling Water Tank Level Transmitter, is Degraded and Cracked, November 22, 2016
- CR-PLP-2016-05937, Noted Ice Accumulating on the Vent for T-2, Condensate Storage Tank, December 16, 2016
- DBD 6.01, Grid Interface Topical Report, Revision 4
- EN-WM-104, On-Line Risk Assessment, Revision 14
- Operations Narrative Logs, Tuesday, October 25, 2016
- Palisades Winter Weather Plan, Revision 2.2
- SOP-14, Circulating Water and Chlorination Systems, Revision 85
- SOP-15, Service Water System, Revision 65
- SOP-23, Plant Heating System, Revision 55
- SOP-3, Safety Injection and Shutdown Cooling System, Revision 103
- WO 2659902, Operational Check of Safety Injection and Refueling Water Tank Heat Trace
- WO 52643780, T-10A; Fuel Oil Sampling for Offsite Analysis
- WO 52658708, Perform Cold Weather Checksheets
- WO 52659902, Perform Operability Check of Heat Trace
- WO 52706483, Operational Check – Warm Water Pump and Recirculating Water Pump

1R04 Equipment Alignment

- CR-PLP-2016-01137, Found MV-FP10036 Packing Leaking, March 7, 2016
- CR-PLP-2016-01676, Excessive Packing Leakage Coming from MV-FP10036, April 7, 2016
- CR-PLP-2016-02907, Severity Level 5 Packing Leak on MV-FP10036, June 24, 2016
- CR-PLP-2016-03180, Severity Level 5 Packing Leak on MV-FP10036 When Screenwash Pump is In Service, July 11, 2016
- DBD-2.07, Spent Fuel Pool Cooling System, Revision 5
- FPIP-4, Fire Protection Systems and Fire Protection Equipment, Revision 37
- FPSP-MO-1, Attachment 2, Fire Suppression Water System Valve Alignment Verification Checkoff Sheet, Revision 23
- M-208, Piping & Instrument Diagram, Service Water System, Sheet 1A, Revision 65
- M-209, Piping & Instrument Diagram, Component Cooling System, Sheet 2, Revision 33
- M-209, Piping & Instrument Diagram, Component Cooling System, Sheet 3, Revision 58
- M-216, Piping & Instrument Diagram, Fire Protection System, Sheet 1, Revision 51
- M-221, Piping & Instrument Diagram, Spent Fuel Pool Cooling System, Sheet 2, Revision 61
- SOP-16, Component Cooling Water System, Revision 47
- SOP-27, Fuel Pool System, Revision 70
- WO 451500, MV-FP10036; Packing Leak

1R05 Fire Protection

- Cover Page for Fire Tours, October 18, 2016 through October 22, 2016
- CR-PLP-2016-05003, Discussion of Potential NRC Finding for Expired Transient Combustible Evaluation Documents Posted in the Charging Pump Cubicles, October 20, 2016
- CR-PLP-2016-05064, Transient Combustible Evaluation (TCE) 16-058 Required Compensatory Measures to Perform Fire Tours Every Hour When the HI-PORT is Parked in Track Alley Unattended, October 22, 2016

- CR-PLP-2016-05074, Transient Combustible Evaluation Paperwork was Inaccurate, October 25, 2016
- CR-PLP-2016-05096, NIOS Identified: Helium Bottle Staged on Spent Fuel Pool in Support of Dry Fuel Storage Welding Activities is Not Restrained by Two Chains, October 25, 2016
- CR-PLP-2016-05097, NIOS Identified: Several Extension Cords in Use in Support of the Dry Fuel Storage Project Do Not Have the Required Labels, October 25, 2016
- CR-PLP-2016-05148, NRC Identified Issue: A Transient Combustible Evaluation (TCE) for 649' Spent Fuel Floor was Not Created for the Dry Fuel Storage Project, October 26, 2016
- CR-PLP-2016-05200, A New Adverse Trend was Identified in the Adherence to Fire Protection Program Requirements, October 31, 2016
- CR-PLP-2016-05373, Palisades SRC 2016-02 Executive Summary Issue (New): In Some Cases, Lapses in Individual and Organizational Behaviors are Introducing Unnecessary Fire Safety Risk, October 27, 2016
- CR-PLP-2016-05595, During Nuclear Plant Operator Rounds Found TCE-16-083 Transient Combustibles Form Hanging in the Screen House Which is a Level 1 Area, November 23, 2016
- CR-PLP-2016-05640, Fire Protection Walkdown Identified a Fire Extinguisher Blocked by Staged Electrical Work Items, November 29, 2016
- CR-PLP-2016-05707, Water Leak Identified by NRC in Turbine Building, December 1, 2016
- CR-PLP-2016-05867, NIOS Identified: Transient Combustible Evaluation was Not Completed for Storing Diesel Fuel in Drums Outside of Diesel Fire Pump Fuel Oil Day Tank Room, December 12, 2016
- CR-PLP-2016-05932, Discrepancies were Noted During Transient Combustible Evaluation Log Audit, December 15, 2016
- DBD-7.10, NFPA 805 Fire Protection Program, Revision 0
- EA-FPP-03-001, Analysis of Combustible Loading at Palisades Nuclear Plant, Revision 3
- EN-DC-127, Control of Hot Work and Ignition Sources, Revision 16
- EN-DC-161, Control of Combustibles, Revision 15
- Evaluation 16-007, Transient Combustible Evaluation, January 1, 2016
- Evaluation 16-032, Transient Combustible Evaluation, May 17, 2016
- Evaluation 16-058, Transient Combustible Evaluation, August 23, 2016
- Evaluation 16-062, Transient Combustible Evaluation, September 6, 2016
- Evaluation 16-064, Transient Combustible Evaluation, September 19, 2016
- Evaluation 16-080, Transient Combustible Evaluation, October 26, 2016
- FPIP-4, Fire Protection Systems and Fire Protection Equipment, Revision 37
- M-216, Piping & Instrument Diagram, Fire Protection System, Sheet 1, Revision 51
- Palisades Nuclear Plant Fire Tour Checklist, October 18, 2016 through October 22, 2016
- Pre-Fire Plan 17, Refueling and Spent Fuel Pool Area, Elevation 649'
- Pre-Fire Plan 19, Track Alley, Elevation 625'
- Pre-Fire Plan 22, Turbine Lube Oil Room, Elevation 590'
- Pre-Fire Plan 24, Auxiliary Feedwater Pumps Room, Elevation 571'
- Transient Combustible Evaluation Log

1R11 Licensed Operator Requalification Program

- Admin 4.02, Control of Equipment, Revision 75
- ARP-13, 345kV Switchyard Scheme EK-50 (C-53, C-54), Revision 56
- ARP-2, Generator Scheme EK-03 (C-11), Revision 56
- CR-PLP-2016-04671, Received EK-0318, Turbine Panel Trouble, September 29, 2016
- CR-PLP-2016-04748, Received EK-0318, Turbine Panel Trouble, October 4, 2016

- CR-PLP-2016-05441, LS-0360B, LS-0375A, and LS-0375B were Out of As Found Tolerance, November 15, 2016
- EN-OP-115, Conduct of Operations, Revision 17
- EN-OP-119, Protected Equipment Postings, Revision 8
- MC-11B, Safeguards Boron Sample, Safety Injection Tanks, Revision 43
- RI-15D, Safety Injection Tank Level Channel Verification, Revision 3
- SOP-3, Safety Injection and Shutdown Cooling System, Revision 103
- SOP-30, Station Power, Revision 82
- SOP-30, Station Power, Revision 82
- SOP-8, Attachment 10, Digital Electrohydraulic Information, Revision 105
- SOP-8, Main Turbine and Generating System, Revision 105
- WO 432198, MC-210; Replace Digital Electrohydraulic Control Room Drop Cards

1R12 Maintenance Effectiveness

- 3rd Quarter 2016, System Health Report for Chemical and Volume Control - Charging/Letdown System
- 4th Quarter 2015, System Health Report for Pressurizer Pressure and Level Control System
- Certificate of Conformance for Order Number 3015642, Turbine-Driven ASMs, June 2016
- CJ6343 PER Stop Nut Pin Evaluation Report for Ingersoll Rand ASM, September 9, 2016
- CR-PLP-2012-03086, During RT-8D, Right Channel Engineered Safeguards System Test, Breaker 152-207, High Pressure Safety Injection P-66A Supply Breaker, Tripped Immediately, April 23, 2012
- CR-PLP-2012-03712, The High Pressure Safety Injection System is Considered “Near (a)(1)” and a Condition Report is Required to be Generated, May 7, 2012
- CR-PLP-2014-01099, P-54C, Containment Spray Pump, Would Not Start During RT-8C, Left Channel Engineered Safeguards System Test, February 5, 2014
- CR-PLP-2014-02872, During Routine Pressurizer Spray Valve Stroking, CV-1057 Red Open Light Did Not Extinguish, May 5, 2014
- CR-PLP-2014-03458, Major Boric Acid Leak Identified on CV-1057, June 21, 2014
- CR-PLP-2014-05184, Group 4 Back-Up Amps on Meter on C-02 Went from 126 Amps to 62 Amps, October 29, 2014
- CR-PLP-2014-05199, A Control Power Fuse Blew During Installation of New Breaker Bucket for 52-1606, October 29, 2014
- CR-PLP-2015-01388, Control Room NCO Noticed VCT Level and Pressure were Lowering at a Greater Rate than Previous Trends, April 2, 2015
- CR-PLP-2015-02414, EN-OE-100-02, Attachment 9.2, Evaluation is Needed to Determine Palisades’ Susceptibility to an Event Similar to Palo Verde Unit 2, ‘Ruptured Discharge Dampener Causes Gas Binding of the Charging Pumps,’ June 10, 2015
- CR-PLP-2015-03106, During a Panel Walkdown, Pressurizer Heater Amps were Lower than Expected, July 25, 2015
- CR-PLP-2015-03326, Documenting Receipt of NRC Non-Cited Violation 2015002-01, August 10, 2015
- CR-PLP-2015-03387, Steady State Speed of P-55A, Charging Pump, was Recorded at 500 rpm, Exceeds the Maximum Permissible Steady State Speed of 495 rpm, August 14, 2015
- CR-PLP-2015-03392, After Placing P-55A, Charging Pump, and P-55B, Charging Pump, in Service for Double Charging and Letdown, Observed Oscillations of as Much as 10 gpm in Charging Flow, August 14, 2015
- CR-PLP-2015-03445, Steady State Speed of P-55A, Charging Pump, was Recorded at 503 rpm, August 18, 2015

- CR-PLP-2015-03692, P-55A Charging Pump Speed Exceeded 495 rpm with P-55B Charging Pump in Service, September 4, 2015
- CR-PLP-2015-03722, Seal Lube Tank for P-55B, 'B' Charging Pump, Dropped to 55% and Crankcase Oil Level was High Out of Sight Glass, September 8, 2015
- CR-PLP-2015-04023, Category 5 Air leak on the Diaphragm of CV-2111, September 20, 2015
- CR-PLP-2015-04079, CV-1059 Failed Drop Test, September 21, 2015
- CR-PLP-2015-04240, CV-1057 Failed Drop Test, September 24, 2015
- CR-PLP-2015-04398, CV-2191, PCP Controlled Bleedoff Stop, Air Supply Regulator Failed, September 28, 2015
- CR-PLP-2015-04466, Charging Pump P-55B has Experienced a New Maintenance Rule Functional Failure, September 29, 2015
- CR-PLP-2015-05002, CV-2004, Letdown Orifice Stop Does Not Indicate Open, October 14, 2015
- CR-PLP-2015-05100, While Test Starting P-54C, Containment Spray Pump, Received EK-1161, Containment Spray Pumps P-54A, P-54B, P-54C Trip, October 17, 2015
- CR-PLP-2015-05514, CV-1057 is Showing Signs of Valve Stem Wear, November 5, 2015
- CR-PLP-2015-05931, Stop Nut Pin Hardness, December 1, 2015
- CR-PLP-2016-00921, Received EK-0735, Charging Low flow, Unexpectedly, February 22, 2016
- CR-PLP-2016-00978, While Performing Preventative Maintenance on Breaker 152-210, P-54A Containment Spray Pump Feeder Breaker, Discovered Closing Spring Bumper Washers Degraded, February 25, 2016
- CR-PLP-2016-00981, While Performing Procedure SPS-E-1 on Breaker Cubicle 152-210, P-54A Feeder Breaker, Discovered Corrosion on Secondary Contacts, February 25, 2016
- CR-PLP-2016-01487, Potential Presence of Water in Oil of P-55C Charging Pump, March 27, 2016
- CR-PLP-2016-01487, While Placing P-55C Charging Pump in Service for Equipment Rotation, Oil Pressure was Lower than Usual, March 27, 2016
- CR-PLP-2016-01530, 52-1606, Group 4 Back-Up, has Uneven Heating Across the Three Phases on the Line Side of the Breaker, March 29, 2016
- CR-PLP-2016-02056, Perform Stop Nut Hardness Test, May 3, 2016
- CR-PLP-2016-02060, P-54C Immediately Tripped and Received Alarm EK-1161, Containment Spray Pump Trip, May 3, 2016
- CR-PLP-2016-02112, Create A Work Order to Start P-54C Containment Spray Pump From the Control Room to Determine the Maintenance Challenges, May 6, 2016
- CR-PLP-2016-02113, Create a Work Order to Replace the 152-114, Containment Spray Pump P-54C, Breaker Cubicle Secondary Disconnect Assembly, May 6, 2016
- CR-PLP-2016-02921, P-55C, Charging Pump Seal Leakoff Went from 35 mL Per Minute to 300 mL Per Minute Over a Two Hour Time Period, June 25, 2016
- CR-PLP-2016-03477, Nitrogen Leaking Through Bottom of Suction Accumulator Bladder on P-55B, July 27, 2016
- CR-PLP-2016-03645, P-55A, 'A' Charging Pump, Seal Leakage has Risen Over the Past Four Nights, August 4, 2016
- CR-PLP-2016-03900, Lowering Pressurizer Level, August 22, 2016
- CR-PLP-2016-03939, P-55B Charging Pump Number 1 Suction Valve Broken into 2 Pieces, August 24, 2016
- CR-PLP-2016-04005, Received Alarm EK-0735, Charging Low Flow, Unexpectedly, August 26, 2016
- CR-PLP-2016-04064, P-55B, Charging Pump, has Oil in the Secondary Weir, August 30, 2016
- CR-PLP-2016-04191, A New Maintenance Rule Functional Failure has Been Identified for P-55B, 'B' Charging Pump, September 7, 2016

- CR-PLP-2016-04191, Chemical and Volume Control System is Near (a)(1) Classification, September 7, 2016
- CR-PLP-2016-04534, PCS Leak on P-55B Charging Pump, September 24, 2016
- CR-PLP-2016-04549, Attempted to Cycle CV-1057 and CV-1059 Unsuccessfully, September 26, 2016
- CR-PLP-2016-04832, CV-1057 was Not Able to Respond Properly to a Potential Loss of Pressurizer Heaters, October 10, 2016
- CR-PLP-2016-05007, The 9/24/2016 Charging Pump P-55B Discharge Manifold Flush Line Leak Identified by CR-PLP-2016-04534 has Been Determined to be a Maintenance Rule Functional Failure, October 20, 2016
- CR-PLP-2016-05445, Vendor Part 21 Analysis Contained a Conclusion Based on an Error, Perform a New Part 21 Analysis, November 15, 2016
- CR-PLP-2016-05629, CV-1059 was Very Sluggish in Operation During Monthly Stroking, January 25, 2016
- CR-PLP-2016-05653, Group 2 Proportional Heaters, Megger Readings of the Load Were Low on Each Phase, November 30, 2016
- CR-PLP-2016-05673, Discharge Flush Line Pipe of Charging Pump P-55B is Subject to a Continuous Internal Vibration, November 30, 2016
- DBD-2.04, Primary Coolant System, Revision 8
- Dedication Plan, 5T542ME-1, For Ingersoll Rand Air Start Motor, Revision 2, February 2, 2009
- E-3, Single Line Meter & Relay Diagram, 2400 Volt System, Sheet 1, Revision 51
- EN-DC-205, Maintenance Rule Monitoring, Revision 5
- EN-DC-206, Maintenance Rule (a)(1) Process, Revision 3
- EN-DC-345, Critical Component Failure Determination, Revision 3
- ESI-SR-16-065, Seismic Qualification of Air Start Motor ST750GBDI03R31, June 1, 2016
- M-201, Piping & Instrument Diagram, Primary Coolant System, Sheet 2, Revision 67
- M-202, Piping & Instrument Diagram, Chemical and Volume Control System, Sheet 1B, Revision 59
- M-202, Piping & Instrument Diagram, Chemical and Volume Control System, Sheet 1A, Revision 64
- Maintenance Rule (a)(1) Action Plan for Charging Pumps P-55A, P-55B, and P-55C, Revision 0
- NRC Information Notice 89-84, Failure of Ingersoll Rand Air Start Motors (ASMs) as a Result of Pinion Gear Assembly Fitting Problems, December 12, 1989
- PLP-RPT-12-00026, Maintenance Rule Scoping Document, Revision 0
- PMRQ 50083363, P-55A (T-106A) Accumulator PM
- Purchase Order 10215910, Supply 2 ASMs for West Configuration, May 8, 2010
- Purchase Order 10390067, Supply 2 ASMs for West Configuration, August 6, 2013
- Purchase Order 10493539, Test, Refurbish, and Repair ASMs from the Warehouse that Are Configured for West Orientation, October 12, 2016
- Purchase Order 10494818, Test, Refurbish, and Repair ASMs from the Warehouse that are Configured for East Orientation, October 25, 2016
- Purchase Order Revision 10480040, Supply and Test 1 East Configuration and 3 West Configuration ASMs, May 25, 2016
- SOP-1A, Primary Coolant System, Revision 33
- SOP-30, Station Power, Revision 82
- SPS-E-20, Maintenance for 2400V Siemens Switchgear, Revision 6
- VTD-2725-0006, Siemens Energy and Automation Inc.: Installation, Operation and Maintenance Instructions for Vacuum Circuit Breakers Type FSV and MSV
- WO 280998, CV-1057; Replace Actuator

- WO 320855, De-Energize Low Pressure Safety Injection Pump P-67A Pressure Switch PS-0322
- WO 329497, 152-114 S4C; Wire 3W-1 Insulation Scuffed Off Conductor
- WO 346736, 52-1605; Replace Pressurizer Heater Breaker
- WO 346737, 52-1606; Replace Pressurizer Heater Breaker
- WO 346737, 52-1606; Replace Pressurizer Heater Breaker
- WO 364438, P-55B; Replace Socket Welds with 2x1 Welds
- WO 374194, CV-2111; Has Air Leak
- WO 382269, CV-1057; Red Open Light did Not Extinguish During Stroke
- WO 386448, CV-1057; Major Boric Acid Leak
- WO 389547, P-55B Discharge Manifold; Repair Leaks in Piping Weld Joint
- WO 397935, T-106A (P-55A); Install Nitrile Bladder per Engineering Change
- WO 397936, T-106B (P-55B); Install Nitrile Bladder per Engineering Change
- WO 397937, T-106C (P55C); Install Nitrile Bladder per Engineering Change
- WO 401700, 52-1606; Perform Cubicle and Breaker Bucket Inspection
- WO 419837, T-106B (P-55B); Replace Plug and Poppet Assembly
- WO 419838, T-106A (P-55C); Replace Plug and Poppet Assembly
- WO 4207883, 52-1608; Breaker Has Tripped Open
- WO 423162, P-55B; Has Indicated Low Flow Based on P-55A Pump Speeds
- WO 423162, P-55B; Has Indicated Low Flow Based on P-55A Speeds
- WO 424624, P-55B; Adjust/Repair Packing
- Wo 426339, PCV-2191; Replace Regulator
- WO 427938, 42-1506/CS; Group 2 Backup Heater Red Light Doesn’t Come On
- WO 430823, PI-0104; Troubleshoot Source of Oscillation to Determine Any Repairs
- WO 431249, P-55B; Has Oil in Weir
- WO 434289, P-55C; Crankcase Oil Has Milky Appearance
- WO 434289, P-55C; Crankcase Oil has Milky Appearance
- WO 434625, P-55A; Repack Pump
- WO 439555, CV-1057; Replace Valve Per EC-63111
- WO 442710, 52-1606; Z-Phase Showing 40 to 50 Degrees Hotter than Other Phases
- WO 447526, 152-114; Containment Spray Pump P-54C Breaker, Troubleshoot Cause of Non-Closure
- WO 449291, P-55C; Seal Leakoff Elevated
- WO 452925, P-55A; Seal Leakage is on the Rise, Investigate and Repair
- WO 454094, Test Spare Nitrile Bladders in Stock
- WO 454097, P-55B; Degraded Flow and Banging Noises
- WO 456767, CV-1057; Pressurizer Spray Valve Appears Stuck in Mid-Position
- WO 459272, P-55B; Change Pipe Between Block and Elbow
- WO 51796866, PM 152-112 Breaker (Feeds P-54B Motor)
- WO 51802557, PM 152-210 Breaker (Feeds P-54A Motor
- WO 52036588, PM 152-111 Breaker (Feeds P-67B Motor)
- WO 52202077, PM 152-207 Breaker (Feeds P-66A Motor)
- WO 52204255, PM 152-113 Breaker (Feeds P-66B Motor
- WO 52523741, CV-1059; Replace Valve Actuator
- WO 52575779, PM 152-114 Breaker (Feeds P-54C Motor)
- WO 52588743, PM 152-206 Breaker (Feeds P-67A Motor)
- WT-WTPLP-2016-00019, Track the Completion of a Part 21 Evaluation by a Vendor, August 10, 2016

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
- AOP-28, Pressurizer Pressure Control Malfunctions, Revision 0
- CR-PLP-2010-00861, During Manual Exercise of Pressurizer Spray Valve, CV-1057, It Did Not Appear to Move, March 1, 2010
- CR-PLP-2010-01533, CV-1057 Found to be Locked in Place Due to a Boric Acid Leak from the Packing Gland Area, April 14, 2010
- CR-PLP-2010-01536, Boric Acid Cleaning Attempted on CV-1057, April 14, 2010
- CR-PLP-2010-01572, Pressurizer Spray Valve, CV-1057, Position Indication, POS-1057, is Not Indicating Correctly, April 16, 2010
- CR-PLP-2015-05514, CV-1057, Pressurizer Spray Valve from Loop 1B, is Showing Signs of Valve Stem Wear, November 5, 2015
- CR-PLP-2015-05629, CV-1059, Pressurizer Spray Valve from Loop 2A, Indication in the Control Room is not as Indicated in the Field, November 11, 2015
- CR-PLP-2016-00435, CV-1059, Pressurizer Spray Valve from Loop 2A, Very Sluggish in Operation During Monthly Stroking, January 25, 2016
- CR-PLP-2016-01038, Initiate a Work Order to Replace Pressurizer Spray Valve, CV-1057, During Refueling Outage 1R25 and CV-1059 During Refueling Outage 1R26, February 29, 2016
- CR-PLP-2016-04505, After Replacement of PCV-1489 and PCV-1490, the Pressures Have Lowered, September 23, 2016
- CR-PLP-2016-04549, Attempted to Cycle CV-1057, Pressurizer Spray Valve from Loop 1B, and CV-1059, Pressurizer Spray Valve from Loop 2A, Unsuccessfully, September 26, 2016
- CR-PLP-2016-04552, CV-1057, Pressurizer Spray Valve from Loop 1B, was Declared Non-Functional Because it Would Not Move During the Monthly Stroke Test, September 26, 2016
- CR-PLP-2016-04690, The Air Start Pressure for the ‘A’ Air Start Motor on the 1-2 Emergency Diesel Generator was Found to be 138 psig During Nuclear Plant Operator Rounds, October 1, 2016
- CR-PLP-2016-04839, During Replacement of E-22A, Diesel Generator 1-1 Jacket Water Cooler, Maintenance Identified an Area on the E-22B/A, Spare Jacket Water Cooler, that had Weldments Removed as Part of the Previous Configuration, October 10, 2016
- CR-PLP-2016-04841, When Re-Installing XJ-0802, Found the As-Found Gap Measurements of the Stay Rods did Not Match Up with Drawing, VEN-M-101, Sheet 3032, October 11, 2016
- CR-PLP-2016-04869, During VT-2 Examination of E-22A, Diesel Generator 1-1 Jacket Water Cooler, a Minor Leak was Found, October 13, 2016
- CR-PLP-2016-04870, During the MO-7A-1 Test on K-6A, Emergency Diesel Generator 1-1, an NPO Found a Bolt and Two Washers on the Floor, October 12, 2016
- CR-PLP-2016-05452, Ground on 2400 VAC System, Tangent Delta Testing has Been Completed, November 15, 2016
- CR-PLP-2016-05453, DEH Software Load Failed, November 15, 2016
- CR-PLP-2016-05522, WO 51631 to Replace the Bonnet Gasket and Repack MV-SFP133 Will Not Be Completed as Scheduled, November 18, 2016
- CR-PLP-2016-05534, Received Alarm EK-0518, 2400V Bus 1C, 1D and/or 1E Ground, and EK-0333, Switchyard 125V Direct Current and 240V Alternating Current Trouble, Unexpectedly, November 18, 2016
- CR-PLP-2016-05540, There is a 3’ by 4’ Sheet Metal Sign on the Fence East of the Dry Fuel Storage Cask Storage Area that is Flapping Against the Fence, November 19, 2016

- CR-PLP-2016-05545, Secondary Nuclear Plant Operator Reported P-7A, Service Water Pump, Basket Strainer Differential Pressures at 8 psid with No Alarms in the Control Room, November 19, 2016
- CR-PLP-2016-05556, Received EK-3011, Diesel Generator 1-2 Low Raw Water Pressure, After Cycling Service Water Pumps to Lower Basket Strainer Differential Pressures, November 20, 2016
- CR-PLP-2016-05582, Work Not Performed as Scheduled, Tagout WGS-009-RB-1111 was Not Hung as Scheduled Due to Questions Regarding Hydrogen Concentration in the Waste Gas Surge Tank Following Nitrogen Purges, November 22, 2016
- EC 67299, K-6A, Emergency Diesel Generator 1-1, E-22A, Jacket Water Cooler, Grinding Marks on Surface of Shell from Removal of Previous Weldment, Revision 0
- EC-42425, Dry Fuel Storage Transition to Holtec, Revision 0
- EN-MA-125, Troubleshooting Control of Maintenance Activities, Revision 20
- EN-OP-116, Infrequently Performed Tests or Evolutions, Revision 12
- EN-OP-119, Protected Equipment Postings, Revision 8
- EN-WM-104, Online Risk Assessment, Revision 14
- EN-WM-104, On-Line Risk Assessment, Revision 14
- FHS-M-23, Movement of Heavy Loads in the Spent Fuel Pool Area, Revision 38
- FHS-M-41B, Hi-Storm FW Dry Fuel Loading Operations, Revision 0
- MO-7A-1, Diesel Generator 1-1 Technical Specification Surveillance Test, Revision 94
- Operations Narrative Logs, October 6, 2016
- Operations Narrative Logs, September 25-26, 2016
- SOP-1A, Primary Coolant System, Revision 33
- SOP-22, Emergency Diesel Generators, Revision 70
- T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, Revision 14
- WO 00415439, E-22A (K-6A); Replace Jacket Water Cooler
- WO 431716, EK-0518; Ground on the 2400 VAC System
- WO 450714, MC-2000; Validate Console Can Properly Load and Display
- WO 458313, F-4B; 'B' Traveling Screen Degraded and Needs Guide Structure Refurbished
- WO 52632352, Rebuild C-8A Motor Post-Maintenance

1R15 Operability Determinations and Functionality Assessments

- A-NL-92-137, Power Penetration Thermal Withstand Protection for Faults
- CR-PLP-2005-06242, 1-2 Diesel Generator Turbocharger Mounting Bolt Broken at the Completion of a 24 Hour Full Load Run, November 22, 2005
- CR-PLP-2013-01250, K-6B, 1-2 Emergency Diesel Generator, Failed to Start During MO-7A-2 when Attempting to Start the Diesel Using ASM-2A, Diesel Generator 'A' Air Start Motor, March 21, 2013
- CR-PLP-2014-00127, Control Room Received EK-0550, Diesel Generator 1-1 Fail to Start, During T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, January 9, 2014
- CR-PLP-2016-00573, E-22A, Diesel Generator 1-1 Jacket Water Cooler, Eddy Current Testing Inspection Identified Tubes for Plugging, February 1, 2016
- CR-PLP-2016-00662, Operability Testing of the 1-1 Diesel Generator is Delayed Due to Failure of the Wilmar Timer, February 4, 2016
- CR-PLP-2016-02709, Eddy Current Tube Inspection on Emergency Diesel Generator 1-1 Jacket Water Heat Exchanger, E-22A, Found the Highest Degradation for an Unplugged Tube to Not have Sufficient Life to Last to the Next Inspection, June 13, 2016

- CR-PLP-2016-03262, During Performance of MO-7A-2, Emergency Diesel Generator Start Time on the 'B' Air Start Motor was 9.6 Seconds - Acceptance Criteria is Less Than or Equal to 9.5 Seconds, July 18, 2016
- CR-PLP-2016-04709, While Attempting to Start K-6A, Emergency Diesel Generator 1-1, for T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, the Control Room Received Alarms EK-550, Diesel Generator 1-1 Trouble, and EK-0552, Diesel Generator 1-1 Start Signal Blocked, Unexpectedly, October 3, 2016
- CR-PLP-2016-04721, During Troubleshooting on Emergency Diesel Generator 1-1 Failure to Start, Discovered Through Resistance Measurements that Jacket Water Pressure Relay #2 was Open, October 3, 2016
- CR-PLP-2016-04828, The Spare E-22A/B Jacket Water Cooler Being Installed in E-22A Will Have a Limited Remaining Service Life, October 10, 2016
- CR-PLP-2016-04854, During the Development of Engineering Change 64020 Noticed that There was Not Proper Electrical Coordination Between a Direct Current Panel Breaker and the Damage Curve for the Associated Containment Penetration, October 11, 2016
- Cr-plp-2016-05589, The Turbocharger to Turbocharger Support Mounting Bolt on the East Side of the 1-2 Emergency Diesel Generator has Broken Off, November 22, 2016
- CR-PLP-2016-0562, CV-0822 Exceeded Maximum Stroke Time, November 30, 2016
- CR-PLP-2016-05725, Turbocharger Shims Between the Turbocharger Support Mounting Plate and the Turbocharger are Laminated Brass Shims with .003' Outer Layer, December 2, 2016
- CR-PLP-2016-05942, During Walkdown of K-6B, Emergency Diesel Generator 1-2, Two 0.010" Thick Steel Shims Were Found Underneath the K-6B/MOS, Diesel Generator 1-2 Mechanical Overspeed Trip/Reset, December 15, 2016
- DBD-1.02, Service Water System, Revision 9
- DBD-5.01, Diesel Generator and Auxiliary Systems, Revision 7
- Diesel Generator 1-1 and 1-2 Start Times for January - October, 2016
- E-230, Schematic Diagram, NSSS Sampling Panel C-32, Revision 12
- E48-EZ-02, Viking Electrical Containment Penetrations, Revision 17
- EA-C-PAL-99-1209B-01, Generation of Flow Rate Acceptance Criteria for Technical Specification Surveillance Test RO-216, Revision 3
- EC 62697, Emergency Diesel Generator Jacket Water Cooler Tube Plugging Revision, Revision 0
- EC-17529, Replace CV-0821/0822 with Sand Resistant Design, Revision 0
- EN-DC-316, Heat Exchanger Performance and Condition, Revision 7
- EN-OP-104, Operability Determination Process, Revision 11
- EOP 1.0, Standard Post-Trip Actions, Revision 18
- EOP Supplement 42, Pre and Post RAS Actions, Revision 8
- Master Heat Exchanger Testing Plan, Revision 13
- MO-7A-1, Technical Specification Surveillance Test: Emergency Diesel Generator 1-1, Revision 91
- SEP-HX-PLP-001, Heat Exchanger Condition Assessment Program, Revision 3
- WO 346921, Replace E-22B, Jacket Water Cooler on 1-2 Diesel Generator
- WO 455124, E-22A/B; Spare Heat Exchanger Refurbishment
- WO 451439, Replace 1-1 Diesel Generator Jacket Water Cooler
- WO 457470, 1-1 Diesel Generator Won't Start Locally During T-302
- WO 52369505, K-6B; 24 Month PM of Aftercooler and Heat Exchangers
- WO 52616684, Emergency Diesel Generator Overspeed Trip Setpoint Test

1R18 Plant Modifications

- AOP-38, Acts of Nature, Revision 6
- CR-PLP-2016-02387, Generate Work Request to Modify the Track Alley Window per EC 59170, Revision 1, May 24, 2016
- CR-PLP-2016-05178, The Missile Shield Does Not have Any Installed Mechanism to Lower or Raise the Wall, October 28, 2016
- EA-EC59170-01, Palisades Track Alley Tornado Missile/Radiation Shield Design, Revision 0
- EC 59170, Track Alley Back Wall Modifications for Dry Fuel Storage, Revision 0
- EC 62309, System Availability Track Alley Wall Modification, Revision 0
- EC 63472, Revise NAI-1149-024, "Determination of Direct Shine Doses for a Design Basis Loss of Coolant Accident for Palisades," to Accommodate Track Alley West Wall DFS Modification, Revision 0
- EC-65116, Evaluation of Track Alley West Wall Tornado Missile Shield, September 1, 2016, Revision 0
- ECN 63256, Post Installation of the Track Alley Missile Shield, the Shield was Not Able to be Raised and Lowered as Designed, Revision 18
- EN-LI-100, Process Applicability Determination, Revision 18
- EN-LI-101, 10 CFR 50.59 Evaluations, Revision 12
- FHS-M-41E, HI-STORM Dry Fuel Loading Operations - HI-STORM Site Transportation, Revision 1
- HI-2114830, FSAR for HI-STORM FW Cask System, Revision 3
- NAI-1149-024, Determination of Direct Shine Doses for a Design Basis Loss of Coolant Accident for Palisades, Revision 4
- SEP-HAB-PLP-001, Palisades Control Room Envelope Habitability Program, Revision 0

1R19 Post Maintenance Testing

- ARP-21, Reactor Protective System Scheme EK-06 (C-06), Revision 54
- CR-PLP-2014-00127, During Performance of T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, Step 5.2.4 the Control Room Received EK-0550, Diesel Generator No. 1-1 Fail to Start, January 9, 2014
- CR-PLP-2016-03841, While Performing an Oil Change, the Wrong Oil was Added to the Pump Bearing Reservoir, August 17, 2016
- CR-PLP-2016-04660, A Review of T-302, Emergency Diesel Generator 1-1 Overspeed Trip, Identified that T-302 Did Not Incorporate a Prerequisite for Air Start Motor Isolation, September 29, 2016
- CR-PLP-2016-04706, It was Discovered by a Nuclear Plant Operator that the Fluke 95 Set-up to Read Frequency was Not Indicating, October 3, 2016
- CR-PLP-2016-04709, While Attempting to Start K-6A, Emergency Diesel Generator 1-1 for T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, the Control Room Received Alarms, October 3, 2016
- CR-PLP-2016-04721, While Performing WO 457470 Task 02, Troubleshooting Emergency Diesel Generator 1-1 Failed to Star,t is was Discovered Through Resistance Measurements that Relay JWPR2 (Jacket Water Pressure Relay #2) was Open, October 3, 2016
- CR-PLP-2016-04723, Nuclear Plant Operator Noticed a Leak on the East Face Plate of the Turbocharger Cooler, October 4, 2016
- CR-PLP-2016-04749, The Nuclear Plant Operators Noticed a Small Leak on the Top Plate of the Servo Booster, October 4, 2016
- CR-PLP-2016-04756, Nuclear Plant Operator Noticed 1 dpm of Oil Coming from the Swagelok Fitting on Top of the Servo Booster, October 5, 2016

- CR-PLP-2016-05387, Adverse Condition Analysis (ACA) was Not Brought into PRG for Review of the Causes or the Actions as Required, November 9, 2016
- CR-PLP-2016-05894, Upon Reviewing the ACA Under CR-PLP-2016-04709 CA-04, NRC Inspectors Identified 2 Discrepancies Within the Extent of Condition, December 13, 2016
- M-214, Piping & Instrument Diagram, Lube Oil, Fuel Oil & Diesel Generator Systems, Sheet 1, Revision 80
- M-221, Piping & Instrument Diagram, Spent Fuel Pool Cooling System, Sheet 2, Revision 61
- Operations Narrative Log, October 3, 2016
- QI-39, Auxiliary Feedwater Actuation System Logic Test, Revision 7
- RI-2B, Primary System Temperature Channel B Calibrations, Revision 7
- SOP-22, Emergency Diesel Generators, Revision 70
- SOP-27, Fuel Pool System, Revision 70
- T-302, Emergency Diesel Generator 1-1 Overspeed Trip Setpoint Verification, Revision 14
- VEN-M12, Schematic Diagram, Engine Control Diesel Generator 1-1, Sheet 98(1), Revision 36
- WO 00457470, 1-1 Emergency Diesel Generator Won't Start Locally During T-302
- WO 457900, TI-0112HB; Indication Erratic
- WO 52595930-01, P/S-0704; Replacement
- WO 52595930-03, P/S-0704; Voltage Check
- WO 52607039, P-51B; Pump Bearing Oil Change

1R22 Surveillance Testing

- CR-PLP-2016-04768, While Working on Component Cooling Water Pump P-52A Motor Bearing Oil Change, Workers Inadvertently Signed on to the Wrong Work Order of the Tagout, October 5, 2016
- CR-PLP-2016-04769, Work Instruction for 52624718-01 Component Cooling Water Pump P-52A Motor Bearing Oil Change Instructions were Written for the Wrong Type of Motor, October 5, 2016
- CR-PLP-2016-04909, P-66B, High Pressure Safety Injection Pump has an Oil Leak Where the Pump Shaft Enters the Pump Inboard Oil Bearing Housing, October 13, 2016
- CR-PLP-2016-05668, NRC Resident Inspector Found that a Fastener that Ties Two Conduit Clamps Together is Broken, November 30, 20116
- CR-PLP-2016-05683, Minor Amount of Accumulated Boric Acid on MV-ES3263, Safety Injection Refueling Water Tank, T-58, to Spent Fuel Pool Cooling Pump, P-51B, Packing, November 30, 2016
- CR-PLP-2016-05684, Minor Amount of Accumulated Boric Acid on MV-ES3242, Safety Injection Refueling Water Tank, T-58, to Chemical Volume Control Packing, November 30, 2016
- CR-PLP-2016-05685, Minor Amount of Accumulated Boric Acid on MO-2160, Safety Injection Refueling Water Tank to Charging Pumps Packing, November 30, 2016
- CR-PLP-2016-05698, Boric Acid on the Ground in West Engineered Safeguards, December 1, 2016
- CR-PLP-2016-05730, Boric Acid Deposits on Nozzle K of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05731, Boric Acid Deposits on Nozzle H of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05732, Boric Acid Deposits Noted on Nozzle G of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05733, Boric Acid Deposits Noted on Nozzle M of T-58, Safety Injection Refueling Water Tank, December 3, 2016

- CR-PLP-2016-05734, Boric Acid Deposits Noted on Nozzle F (East) of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05735, Boric Acid Deposits Noted on Nozzle F (West) of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05736, Boric Acid Deposits Noted on Nozzle L of T-58, Safety Injection Refueling Water Tank, December 3, 2016
- CR-PLP-2016-05738, Three Cracks in the Component Cooling Water Ceiling Were Identified During the Performance of a VT-2, December 3, 2016
- CR-PLP-2016-05739, A Cement Wall Block was Identified to be Cockeyed, December 3, 2016
- CR-PLP-2016-05740, An Abandoned-In-Place Pipe Hanger is Hanging by One Anchor Support, December 3, 2016
- EC 31817, Revise the Hydraulic Pipe-Flo Model for the Engineered Safeguards System from Version 4.11 to Version 2007A, Revise the Engineered Safeguards System Pump Curve Calculation, and Recirculation Mode Net Positive Suction Head Calculation, Revision 0
- EC Reply 68463, CR-PLP-2016-05738 and -05739 Assessment, Revision 0
- EN-MA-121, Fluid Leak Prevention and Management Program, Revision 7
- ESS-S-06, Check Valve Program - Condition Monitoring Analysis, Revision 2
- M-201, Piping & Instrument Diagram, Primary Coolant System, Sheet 1, Revision 90
- M-203, Piping & Instrument Diagram, Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 2, Revision 28
- M-204, Piping & Instrument Diagram, Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1, Revision 87
- M-204, Piping & Instrument Diagram, Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1A, Revision 44
- M-204, Piping & Instrument Diagram, Safety Injection, Containment Spray and Shutdown Cooling System, Sheet 1B, Revision 41
- MSI-I-16, Nonintrusive Diagnostic Check Valve Test Procedure, Revision 6
- Operations Narrative Log, November 10, 2016
- QO-15, Inservice Test Procedure - Component Cooling Water Pumps, Revision 36
- QO-16 Basis, Basis Document for Containment Spray Pumps Surveillance Test, Revision 16
- QO-16, Inservice Test Procedure - Containment Spray Pumps, Revision 36
- QO-19 Basis, Basis Document for High Pressure Safety Injection Pumps and ESS Check Valve Operability Test, Revision 20
- QO-19, Inservice Test Procedure - High Pressure Safety Injection Pumps and ESS Check Valve Operability Test, Revision 39
- RT-71M, Basis Document for Class 2 System Inservice Test for Safety Injection and Refueling Water Tank, Revision 2
- RT-71M, Class 2 Test for Safety Injection and Refueling Water Tank, Revision 10
- SEP-CV-PLP-002, Check Valve Condition Monitoring and Inservice Testing Program, Revision 3
- SEP-PT-PLP-001, Inservice Inspection Pressure Testing Program, Revision 1
- WO 00393789, CK-ES3339; Inspect per SEP-CV-PLP-001
- WO 52624608, CK-ES 3339; Non-Intrusive Check Valve Test
- WO 52681729, CK-CC941; Non-Intrusive Check Valve Test

1EP4 Emergency Action Level and Emergency Plan Changes

- 10CFR50.54(q) Training Documentation - Exemption Approval Form for D. G. Malone, February 27, 2012
- 10CFR50.54(q) Training Documentation for M. E. Fields, June 23, 2015
- EAL Basis, Emergency Action Level Technical Bases, Revision 4, 6, and 7

- EN-EP-305, Attachment 9, 10CFR50.54(q) Training Documentation, Revision 4
- EN-EP-305, Attachment 9.1, 10CFR50.54(q) Screening for Emergency Action Level Technical Bases, July 21, 2015
- EN-EP-305, Attachment 9.1, 10CFR50.54(q) Screening for Site Emergency Plan, May 31, 2016
- EN-EP-305, Attachment 9.2, 10CFR50.54(q)(3) Screening for Emergency Action Level Technical Bases, June 21, 2016
- EN-EP-305, Emergency Planning 10CFR50.54(q) Review Program, Revision 4
- KLD TR-759, Palisades Power Plant 2015 Population Update Analysis, September 22, 2015
- Palisades Nuclear Plant On-Shift Staffing Analysis, Revision 3
- SEP Supplement 2, Palisades Nuclear Plant Site Emergency Plan Supplement 2, Revision 0
- SEP, Palisades Nuclear Plant Site Emergency Plan, Revisions 26 and 27

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

- CR-PLP-2016-03232, Approximately 130 Gallons of Water Found Inside Scaffold Storage Box, July 13, 2016
- CR-PLP-2016-04728, Review of FSAR Identified One Needed Revision, October 4, 2016
- CR-PLP-2016-05677, Package Characteristics Did Not Contain Expected Transuranic Nuclide Activity, November 29, 2016
- EN-RP-101, Radioactive Waste Management, Revision 3
- EN-RP-102, Radioactive Shipping Procedure, Revision 14
- EN-RP-121, Radioactive Material Control, Revision 12
- EN-RW-105, Process Control Program, Revision 5
- Shipping Package, 2016-RM-010
- Shipping Package, 2016-RW-012
- Shipping Package, 2016-RW-015
- Title 10 CFR Part 61, Waste Stream Sample Screening and Evaluation, 2015 DAW Waste Stream, November 30, 2015

4OA1 Performance Indicator Verification

- CR-IP2-2016-07044, NRC Inspector Identified Certain Diesel Generator Start Demands Being Counted Inappropriately, November 30, 2016
- CR-PLP-2017-0050, NRC Inspector Identified Discrepancies in Certain Diesel Generator Start Demands Being Counted Inappropriately, January 5, 2017
- EN-LI-114, Regulatory Performance Indicator Process, Revision 7
- NRC Performance Indicator Data Sheet, Mitigating Systems Performance Indicator, Emergency AC Power (MS06), September 2015 through September 2016
- NRC Performance Indicator Data Sheet, Mitigating Systems Performance Indicator, Cooling Water Support (MS10 CWS 1), October 2015 through September 2016
- NRC Performance Indicator Data Sheet, Mitigating Systems Performance Indicator, Cooling Water Support (MS10 CWS 2), October 2015 through September 2016
- NRC Performance Indicator, Occupational Exposure Control Effectiveness (OR01), 3rd Quarter of 2015 through 3rd Quarter of 2016
- NRC Performance Indicator, Reactor Coolant System Specific Activity (BI01), 3rd Quarter of 2015 through 3rd Quarter of 2016
- NRC Performance Indicator, RETS/ODCM Radiological Occurrences (PR01), 3rd Quarter of 2015 through 3rd Quarter of 2016

4OA2 Problem Identification and Verification

- AOP-17, Loss of 125V DC Panel(s), Revision 2
- ARP-3, Electrical Auxiliaries and Diesel Generator Scheme EK-05 (EC-11), Revision 78
- CR-PLP-2005-06529, Diesel Generator DBA/NSD Load Sequencer Failure - Left Train, December 14, 2005
- CR-PLP-2015-1753, Cyber Question Regarding the Meteorological Tower (METT) Computer and its Dial-Up Modem, April 28, 2015
- CR-PLP-2015-1997, Meteorological Tower Data Connection from a Level 2 CDA to a Level 3 CDA, May 14, 2015
- CR-PLP-2015-3070, Method of Evaluating TS CDA's was Not in Alignment with OE, July 22, 2015
- CR-PLP-2015-3288, The Target Set Expert Panel has Identified Target Set CDAs, August 8, 2015
- CR-PLP-2015-3853, Several Digital Assets Identified that Should have been Identified as CDAs, September 16, 2015
- CR-PLP-2016-01643, CV-0608, Moisture Separator Drain Tank, T-5, Level Control was Identified as Open but Not Moving as Expected, March 5, 2016
- CR-PLP-2016-01694, An Adverse Trend Exists in the Screening of Condition Reports as "Adverse vs. Non-Adverse" in accordance with EN-LI-102, Corrective Action Program, April 7, 2016
- CR-PLP-2016-01991, During the Emergency Preparedness Audit, 3 of 13 Condition Reports Classified as Non-Adverse Met the Requirements Documented in EN-LI-102 as Being Adverse Conditions, April 28, 2016
- CR-PLP-2016-02552, Received EK-0318, Turbine Panel Trouble, and Verified Governor Valves and Turbine Load Stable, June 2, 2016
- CR-PLP-2016-02568, After the Reset of Drop-3 on the Digital Electrohydraulic Control System, the Drop Indicated that it was Drop-254, An Indication of a Loss of Memory for the Drop, June 3, 2016
- CR-PLP-2016-02796, During the Maintenance Audit, 2 of 15 Condition Reports Classified as Non-Adverse Met the Requirements Documented in EN-LI-102 as Being Adverse Conditions, June 17, 2016
- CR-PLP-2016-03042, While Pumping T-74, Primary System Drain Tank, to <28% in Preparation for Performing QO-19, LIA-0001, Primary System Drain Tank T-74 Level Indicator, Level Lowered from 70% to 36% and Remained at 36%, June 30, 2016
- CR-PLP-2016-03260, Right Train Sequencer Power Supply Failure, July 18, 2016
- CR-PLP-2016-03272, DG Load Sequencer DBA/NSD Processor - Circuit 2 Failed, July 18, 2016
- CR-PLP-2016-03361, Security Vital Door 52 is Currently Very Difficult to Close/Secure, July 21, 2016
- CR-PLP-2016-03371, Confirmed Fuel Oil Leakage Out of CK-FP491, Fuel Oil Return Check Valve, July 21, 2016
- CR-PLP-2016-03406, RIA-5703, Evaporator B Radiation Alarm Indicator is Indicating Erratically, July 24, 2016
- CR-PLP-2016-03428, Replacement CK-FP491, Diesel Driver K-10 Fuel Oil Outlet Check Valve, Failed to Pass the Seat Tightness Check Required to Install in System, July 26, 2016
- CR-PLP-2016-03432, During Performance of AT-36, ISFSI Pad Monitoring Program, Several Areas of Surface Concrete Spalling and Cracking were Identified, July 26, 2016
- CR-PLP-2016-03452, Control Room Terminal Block Link 8-TH2-10 is in Need of a Replacement Jumper Bar, July 27, 2016

- CR-PLP-2016-03455, All of the Cells on ED-02 showed Signs of Cracking From the Post Seals Toward the Outer Edge of the Lid, July 27, 2016
- CR-PLP-2016-03479, During the Access Authorization, Fitness-for-Duty, and Fatigue Audit, 2 of 13 Condition Reports Classified as Non-Adverse met the Requirements as Being Adverse Conditions, July 28, 2016
- CR-PLP-2016-03481, The Incorrect Revision of Procedure EN-NS-102 is in Use at Two Contract Vendor Drug and Alcohol Facilities that Support the Access Authorization and Fitness-for-Duty Program at Palisades, July 28, 2016
- CR-PLP-2016-03483, No Objective Evidence Could be Produced to Validate that a Fatigue Assessment had been Performed for a Vehicle Accident Documented Under CR-PLP-2016-00288, July 28, 2016
- CR-PLP-2016-03494, Suspected Leakage in E-27, Condensate Storage Tank Heat Exchanger, from T-2, Condensate Storage Tank, into the Plant Heating System (Shell Side), July 28, 2016
- CR-PLP-2016-03498, Point #38 for TE-0418B, Primary Coolant Pump P-50D Temperature Element, on LTVR-0901, Primary Coolant Pump Condition Monitor, Failed Off Scale Low at Around 1130 on July 28, 2016, July 28, 2016
- CR-PLP-2016-03543, The Instrument Air System has Exceeded its Maintenance Rule Performance Criteria of <5 Functional Failures in the Previous 24 Months, August 1, 2016
- CR-PLP-2016-03544, The High Pressure Air Compressors have Experienced 2 Functional Failures Out of a Performance Criteria of < 3 Functional Failures in the Previous 24 Months, Putting It “Near (a)(1)” Maintenance Rule Status, August 1, 2016
- CR-PLP-2016-03548, Recent Trends of Difference Between of Quadrant Power Tilt as Measured by the Incore Detector System and Excore Power Range Detectors Indicate that a Nuclear Instrument Calibration per Procedure NMS-I-10 and NMS-I-7 Will be Required Prior to August 28, 2016, August 1, 2016
- CR-PLP-2016-03592, 1-3 Emergency Generator Louvers on the East Side of the Generator have Broken Hold Open latches, August 3, 2016
- CR-PLP-2016-03600, An Electronic Alarming Dosimeter Failed While an Individual was Performing Work on H-14, Refueling Machine, August 3, 2016
- CR-PLP-2016-03682, Issues Identified with Boot Seal in East Safeguards on the South Wall, August 9, 2016
- CR-PLP-2016-03697, Plating Out of Material on the P-45A/B Turbine Sump Pump Intake Screens has Significantly Accelerated from May of 2016, August 9, 2016
- CR-PLP-2016-03722, During the Extent of Condition Review from CR-PLP-2016-1694, Approximately 300 CRs were Identified Screened as Non-Adverse, But Should have been Classified as Adverse per EN-LI-102, August 10, 2016
- CR-PLP-2016-03737, Diesel Fuel Oil Storage Tank, T-10A, has had Positive Indications of Water via Water Level Determination Since June, August 11, 2016
- CR-PLP-2016-03738, XJ-0412 has Concrete Slag on it, XJ-0411 Pipe Side of Joint is Soft and Spongy, XJ-0420 Pipe Side of Joint is Soft and Spongy, XJ-0421 Pipe Side of Joint is Soft and Spongy, August 11, 2016
- CR-PLP-2016-03743, Breaker 52-127, Boric Acid Gravity Feed MO-2169, Setting is Low Out of Tolerance and Needs to be Reset, August 11, 2016
- CR-PLP-2016-03747, One Spot at Each End of the Boot Seal at the 570’ Level of the Dirty Waste Drain Tank Room has Lifted, August 11, 2016
- CR-PLP-2016-03748, Issue Observed with Adverse/Non-Adverse Assignments in PCRS and How They Transfer to Asset Suite, August 11, 2016
- CR-PLP-2016-04538, Core Exit Thermocouple #16 was Reading Erratically, September 25, 2016

- CR-PLP-2016-04539, Door-115A, Viewing Gallery/1D Switchgear Vestibule, Will Not Latch Automatically, September 25, 2016
- CR-PLP-2016-04544, A Compressed Bottle (Argon) Stored in a Level 1 Area with Fire Tours in Place, September 25, 2016
- CR-PLP-2016-04580, During the 2016 Document Control and Records Audit, 3 of 15 Condition Reports Classified as Non-Adverse Met the Requirements Documented in EN-LI-102 as Being Adverse Conditions, September 27, 2016
- CR-PLP-2016-04807, Department Monthly Duress Alarm Testing was Not Completed in Accordance with Security Implementing Procedure 18 for the Months of March, June, and August 2016, October 7, 2016
- CR-PLP-2016-04810, CR-PLP-2016-01288, Written on March 14, 2016, was Incorrectly Classified as a Non-Adverse Condition, October 7, 2016
- CR-PLP-2016-04819, Air Leak Identified Coming from Downstream of Diesel Generator 1-2 SW Inlet CV-0885 Air Supply on the Piping Joint into SW Inlet CV-0885 Air Supply Pressure Control Valve, October 9, 2016
- CR-PLP-2016-04837, Contractor Performed Hot Work in a Designated No Permit Required Hot Work Area, Craft Fab Shop, without Required Fire Watch, October 10, 2016
- CR-PLP-2016-04845, MV-MS515, CV-0782 Steam Trap ST-0792 Inlet, has a Packing Leak, October 11, 2016
- CR-PLP-2016-04850, Replacement Seismic Monitor Board is Not Like for Like with the Old, October 11, 2016
- CR-PLP-2016-04869, During VT-2 Examination of E-22A, DG 1-1 Jacket Water Cooler, a Minor Leak was Found on a Pipe Plug on the North Side of the Service Water Outlet Pipe, October 12, 2016
- CR-PLP-2016-04872, Replacement Valve Failed as it was Unable to Pass Acceptance Criteria During Testing, October 12, 2016
- CR-PLP-2016-048888870, Found a Bolt and Two Washers on the Floor Near C-3A, Emergency Diesel Generator 1-1 Air Compressor, October 12, 2016
- CR-PLP-2016-04918, The Acceptability of the Location of the Hi-Port with a Loaded Hi-Storm, Parked Inside the Protected Area was Questioned, October 13, 2016
- CR-PLP-2016-04976, Missing Bolt on the Engine Exhaust Manifold Heat Shield on K-6B, Emergency Diesel Generator 1-2, October 18, 2016
- CR-PLP-2016-04979, Foreign Material Control Monitor was Not in Direct Communication with the Workers Performing the 1st Pass Lid Weld on the Number 1 Dry Fuel Storage Canister, October 18, 2016
- CR-PLP-2016-05316, A 35 dpm Jacket Water Leak was Noted on the K-6A, 1-1 Emergency Diesel Generator, Turbocharger Aftercooler, November 17, 2016
- CR-PLP-2016-05507, Found a Ground Indication on Heat Trace Panel EC-100A, November 17, 2016
- DPI-0918, Cyber Security Assessment, Differential Pressure Across CCW HX E-54A, Revision 0
- DPI-0919, Cyber Security Assessment, Differential Pressure Across CCW HX E-54B, Revision 0
- EN-DC-313, Procurement Engineering Process, Revision 12
- EN-LI-102, Corrective Action Program, Revision 28
- EN-MP-112, Shelf Life Program, Revision 5
- FP-E-CAP-01, Electrolytic Capacitor Aging Management, Revision 0
- FP-SC-PE-05, Shelf Life Program, Revision 0
- M-1005-5000943201, Cyber Security Assessment, Supplemental Diesel Generator, Revision 0
- WO 451127, MC-34R101; Bench Set-Up of New Sequencer Module
- WO 52706480, MC-34R101; Replace Sequencer Controller/Power Supply

4OA5 Other Activities

- 10 CFR 72.48 Evaluation No. 0171, EC66959, Issue 72.212 Report and Revised Calculations, October 6, 2016
- A16173-R-001, Report for the Seismic Stability Analysis of ISFSI Stack-Up in the Auxiliary Building, Revision 0
- A16234-C-001, Structural Evaluation of Auxiliary Building for Dry Cask Stack-Up Loading, Revision 1
- Certificate of Batch Analysis, Part Number: HE UHPC23, December 9, 2015
- CR-PLP-2015-00564, Documents Referenced Additional Documents Causing Delays in Review, February 3, 2015
- CR-PLP-2015-00909, HI-PORT Design Analysis, February 26, 2015
- CR-PLP-2015-01448, Crib Stand Location Discrepancy, April 8, 2015
- CR-PLP-2015-06181, DFS Haul Path, December 15, 2015
- CR-PLP-2016-00646, Mating Device Gaps, February 4, 2016
- CR-PLP-2016-01065, Auxiliary Building Slenderness Ration, March 1, 2016
- CR-PLP-2016-01146, DFS Transporter Safety Factors, March 7, 2016
- CR-PLP-2016-01210, HI-STORM FW Tornado Missile Design Basis, March 9, 2016
- CR-PLP-2016-01211, VSC-24 Tornado Missile Design Basis, March 9, 2016
- CR-PLP-2016-01212, TN NUHOMS Tornado Missile Design Basis, March 9, 2016
- CR-PLP-2016-01308, Coefficient of Friction for Painted Plate during Stack-Up, March 15, 2016
- CR-PLP-2016-01346, Coefficient of Friction During Stack-Up, March 17, 2016
- CR-PLP-2016-01399, Adding Tornado Design Requirements to FSAR, March 22, 2016
- CR-PLP-2016-01414, Evaluation of Wheel Loading on HI-PORT, March 23, 2016
- CR-PLP-2016-01425, Eccentric Loading Not Evaluated, March 23, 2016
- CR-PLP-2016-01426, Effective Width of Crib Stands, March 23, 2016
- CR-PLP-2016-01531, Stack-Up Dynamic Analysis, March 29, 2016
- CR-PLP-2016-01558, FEA Non-conventional Modeling Technique, March 31, 2016
- CR-PLP-2016-01559, Unclear Whether Dynamic Seismic Analysis Meets Regulatory Requirements, March 31, 2016
- CR-PLP-2016-01561, Review of RIS 2015-13, March 31, 2016
- CR-PLP-2016-01562, Evaluation of Seismic Event During Transit, March 31, 2016
- CR-PLP-2016-01871, Peak Compressive Load on Undergirding Support Walls, April 20, 2016
- CR-PLP-2016-01960, Shear Capacity Undocumented in Calculation, April 27, 2016
- CR-PLP-2016-02332, VSC-24 Design Basis Tornado Missile, May 19, 2016
- CR-PLP-2016-02427, Errors Found in Tornado Missile Calculation, May 26, 2016
- CR-PLP-2016-02428, Qualification of HI-PORT DFS Transporter, May 26, 2016
- CR-PLP-2016-02556, Sheared Bolt Located on Transporter, June 3, 2016
- CR-PLP-2016-03516, Stack Up Configuration Does Not Seem to Comply with Regulatory Guidance, July 29, 2016
- CR-PLP-2016-04006, HI-STORM Contacted VCT, August 26, 2016
- CR-PLP-2016-04497, HI-PORT Cleat Gap Identified at HI-STORM Mating Surface, September 22, 2016
- CR-PLP-2016-04561, Cable Core on the Fuel Pool Crane, September 26, 2016
- CR-PLP-2016-04777, Incorrect Height for Center of Gravity, October 6, 2016
- CR-PLP-2016-04826, Inadequate Response to RFI, October 10, 2016
- CR-PLP-2016-04859, MPC Lid Not Properly Seated, October 11, 2016
- CR-PLP-2016-04893, Higher Dose Rates than Expected, October 12, 2016
- CR-PLP-2016-04895, MPC Vessel Shim Snagged During Lid Removal, October 13, 2016

- CR-PLP-2016-04913, NIOS Identified Procedure Place Keeping Inconsistency, October 13, 2016
- CR-PLP-2016-04918, Indentations in Asphalt, October 13, 2016
- CR-PLP-2016-04946, Discrepancy in Drawings, October 1, 2016
- CR-PLP-2016-05470, Non-Conservative Procedure Clearance Between Vehicle and HI-PORT Transporter, November 16, 2016
- CR-PLP-2016-05475, Inadequate Procedure Combustible Controls at ISFSI, November 16, 2016
- CR-PLP-2016-4486, Training Requirements for Dry Fuel Storage Activities Not Met or Documented, September 22, 2016
- CTL Group Project No. 262742, Condition Assessment of Track Alley Slab, Palisades Nuclear Plant, November 4, 2013
- DOC-104-209-018, Leased MPC-37 Lift Cleats, Revision 0
- DOC-104-702-023, Leased HI-TRAC VW Lift Yoke, Revision 0
- Documentation Package J&R Project #1692 Holtec Vertical Cask Transporter, May 15, 2014
- Drawing Number 8625, Sheets 1-8, Assembly Mating Device HI-TRAC VW Detail Assembly Drawing, Revision 2.1
- Drawing Number 8877, Sheets 1-6, Dry Storage Cask Flow and Laydown Drawings, Revision 5
- Drawing Number 8988, HI-TRAC VW (For Use with 163.5” MPC-37) Fabrication Drawing, Revision 0
- DRN 16-00918, Document Revision Notice: Procedure FHS-M-41D, Revision 3, October 11, 2016
- DRN 16-00919, Document Revision Notice: Procedure FHS-M-41E, Revision 3, October 11, 2016
- DRN 16-00963, Document Revision Notice: Procedure FHS-M-41D, Revision 4, October 20, 2016
- DRN 16-00964, Document Revision Notice: Procedure FHS-M-41E, Revision 4, October 20, 2016
- EA-14-013, Palisades Nuclear Plant, Confirmatory Order (ML14203A082)
- EA-EC42425-07, Palisades ISFSI & Haul Path Summary Analysis for Dynamic Structural Cask Tip-Over and Hazards Evaluations HI-2135588, Revision 0
- EA-EC42425-22, Three Dimensional Thermal-Hydraulic Analysis for Palisades Site-Specific HI-STORM FW System HI-2145976, Revision 0
- Emergency Action Levels Technical Basis Document, Revision 0
- EN-DC-161, Control of Combustibles, Revision 15
- EN-DC-212, CASKLOADER Computer Code – Model Development and Updating, Revision 6
- EN-DC-223, Fuel Selection for Holtec HI-STORM FW MPC Storage System, Revision 0
- EN-FAP-HR-006, Fleet Approach to Leadership Development & Organization Effectiveness, Revision 1
- EN-LI-102, Corrective Action Program, Revision 24
- EN-MA-119, Material Handling Program, Revision 23
- EN-MA-119-01, Control, Storage, and Inspection of Lifting Equipment, Revision 6
- EN-MP-120, Material Receipt, Revision 9
- EN-NS-221, Security Organization, Standards, and Expectations, Revision 6
- EN-RP-110-05, Attachment 9.3, ALARA Planning and Controls - DFS Loading Activities, Dry Run, Preps, Set-up, Demobilization, Revision 2
- Entergy Quality Assurance Program Manual, Revision 29
- FHS-M-23, Movement of Heavy Loads in the Spent Fuel Pool Area, Revision 35
- FHS-M-23, Movement of Heavy Loads in the Spent Fuel Pool Area, Revision 36
- FHS-M-23, Movement of Heavy Loads in the Spent Fuel Pool Area, Revision 38

- FHS-M-41A, HI-STORM FW Dry Fuel Loading Operations – Equipment Preparation, Revision 0
- FHS-M-41B, HI-STORM Dry Fuel Loading Operations – MPC Loading, Revision 1
- FHS-M-41C, HI-STORM Dry Fuel Loading Operations – MPC Sealing and Drying, Revision 1
- FHS-M-41D, HI-STORM Dry Fuel Loading Operations – MPC Transfer to HI-STORM, Revision 0
- FHS-M-41D, HI-STORM Dry Fuel Loading Operations – MPC Transfer to HI-STORM, Revision 2
- FHS-M-41D, HI-STORM Dry Fuel Loading Operations – MPC Transfer to HI-STORM, Revision 3
- FHS-M-41D, HI-STORM Dry Fuel Loading Operations – MPC Transfer to HI-STORM, Revision 4
- FHS-M-41D, HI-STORM Dry Fuel Loading Operations – MPC Transfer to HI-STORM, Revision 5
- FHS-M-41E, HI-STORM FW Dry Fuel Loading Operation – HI-STORM Site Transportation, Revision 0
- FHS-M-41E, HI-STORM FW Dry Fuel Loading Operation – HI-STORM Site Transportation, Revision 3
- FHS-M-41E, HI-STORM FW Dry Fuel Loading Operation – HI-STORM Site Transportation, Revision 5
- FHS-M-41E, HI-STORM FW Dry Fuel Loading Operation– HI-STORM Site Transportation, Revision 4
- FHS-M-42, HI-STORM Dry Fuel Loading Operations – Unloading, Revision 0
- FLP-SOER-SOER 10-2 PLP SECQUAL, SOER 10-2 PLP Security Qualification Event, Revision 0,
- GQP 9.2, High Temperature Liquid Penetrant Examination, Revision 8
- GQP 9.6, Visual Examination of Welds, Revision 14
- HI 2146170, HI-STORM/HI-TRAC Stack-Up Dynamic Analysis Using LS DYNA, Revision 2
- HI 2146267, Structural Analysis of HI-PORT in Loaded HI-STORM Configuration, Revision 7
- HI-21 35454, Cask Handling Weights Report for Palisades, Revision 4
- HI-21 35454, Cask Handling Weights Report for Palisades, Revision 6
- HI-2125262, Structural Requirements on the HIGH-STORM Transporter and Qualification of the Track Beam Structure with a Loaded Transporter, Revision 8
- HI-2125262, Structural Requirements on the HIGH-STORM Transporter and Qualification of the Track Beam Structure with a Loaded Transporter, Revision 9
- HI-2135545, Palisades ISFSI Site Boundary Dose Rate Calculations, Revision 3
- HI-2135550, Undergrounds Evaluation for Palisades, Revision 3
- HI-2135588, Palisades ISFSI & Haul Path Summary Analysis for Dynamic Structural Cask Tip-Over and Hazards Evaluations for Entergy Nuclear, Revision 4
- HI-2135588, Palisades ISFSI & Haul Path Summary Analysis for Dynamic Structural Cask Tip-Over and Hazards Evaluations for Entergy Nuclear, Revision 5
- HI-2135664, HI-STORM FW CoC Radiation Protection Program Dose Rate Limits for Palisades, Revision 1
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- PI-CNSTR-OP-ENT-H-01, Closure Welding of Holtec Multi-Purpose Canisters at Entergy Facilities, Revision 1
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LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
AFW	Auxiliary Feedwater
CAP	Corrective Action Program
CCW	Component Cooling Water
CDA	Critical Digital Asset
CFR	*Code of Federal Regulations*
CoC	Certificate of Compliance
CR	Condition Report
CRG	Condition Review Group
DCSS	Dry Cask Storage system
DFS	Dry Fuel Storage
DG	Diesel Generator
EAL	Emergency Action Levels
ESS	Engineered Safeguards System
FHD	Forced Helium Dehydration
HI-PORT	Wheelift Transporter
HI-STORM	Storage Cask
HI-TRAC	Transfer Cask
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
MPC	Multi-Purpose Canister
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NIOS	Site Nuclear Oversight
NMSS	NRC Office of Nuclear Material Safety and Safeguards
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PI	Performance Indicator
PI&R	Problem Identification and Resolution
RIS	Regulatory Issue Summary
RP	Radiation Protection
SCWE	Safety Conscious Work Environment
SDP	Significance Determination Process
SER	Safety Evaluation Report
SFP	Spent Fuel Pool
SIF	Security Issues Forum
TCE	Transient Combustible Evaluation
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order
WR	Work Request

Letter to Charles Arnone from Eric Duncan dated February 14, 2017

SUBJECT: PALISADES NUCLEAR PLANT—NRC INTEGRATED INSPECTION REPORT 05000255/2016004; 05000255/2016501; 07200007/2015001; AND 07200007/2016001

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