



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

February 12, 2014

EA-13-263

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

**SUBJECT: PALISADES NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000255/2013005 AND EXERCISE OF ENFORCEMENT DISCRETION**

Dear Mr. Vitale:

On December 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Palisades Nuclear Plant. The enclosed report documents the results of this inspection, which were discussed on January 9, 2014 with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, three NRC-identified findings of very low safety significance were identified. The findings were determined to involve violations of NRC requirements. However, because the findings were of very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these violations as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC's Enforcement Policy. Additionally, three licensee-identified violations are listed in Section 4OA7 of this report. Enforcement discretion was granted for one of these violations.

If you contest these violations or the 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 a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Palisades Nuclear Plant.

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.

As a result of the Safety Culture Common Language Initiative, the terminology and coding of cross-cutting aspects were revised beginning in calendar year (CY) 2014. New cross-cutting aspects identified in CY 2014 will be coded under the latest revision to Inspection Manual Chapter (IMC) 0310. Cross-cutting aspects identified in the last six months of 2013 using the previous terminology will be converted to the latest revision in accordance with the cross-reference in IMC 0310. The revised cross-cutting aspects will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the CY 2014 mid-cycle assessment review.

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

Sincerely,

**/RA/**

Eric Duncan, Chief  
Branch 3  
Division of Reactor Projects

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

Enclosure:  
Inspection Report 05000255/2013005;  
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000255/2013005

Licensee: Entergy Nuclear Operations, Inc.

Facility: Palisades Nuclear Plant

Location: Covert, MI

Dates: October 1, 2013 through December 31, 2013

Inspectors: T. Taylor, Senior Resident Inspector  
A. Scarbeary, Resident Inspector  
J. Cassidy, Senior Health Physicist  
R. Conatser, Health Physicist  
N. Féliz Adorno, Reactor Engineer  
M. Holmberg, Reactor Inspector  
J. Laughlin, Emergency Preparedness Inspector  
M. Phalen, Senior Health Physicist  
E. Sanchez Santiago, Reactor Engineer

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

Enclosure

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## SUMMARY OF FINDINGS

Inspection Report (IR) 05000255/2013005, 10/01/2013 – 12/31/2013; Palisades Nuclear Plant; Fire Protection; Radiological Hazard Assessment and Exposure Controls; Identification and Resolution of Problems

This report covers a 3-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Three Green findings were identified by the inspectors. These findings involved Non-Cited Violations (NCVs) of NRC regulations. The significance of inspection findings is indicated by their color (i.e., Greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated June 2, 2011. Cross-cutting aspects were determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated January 28, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

### **NRC-Identified and Self-Revealed Findings**

#### **Cornerstone: Mitigating Systems**

- **Green.** An NRC-identified finding of very low safety significance and an associated non-cited violation (NCV) of Technical Specification (TS) 5.4.1, "Procedures," was identified by the inspectors when licensee personnel failed to complete a transient combustible evaluation as required by procedure EN-DC-161, "Control of Combustibles." Specifically, transient combustible materials in use for work activities associated with the Spent Fuel Pool Cooling Heat Exchangers were being stored in the Auxiliary Building 590' corridor, a Level 1 Combustible Control Zone, without having a required transient combustible evaluation completed prior to (or during) the work. The licensee entered this issue into their Corrective Action Program (CAP) as Condition Report (CR) PLP-2013-04905, performed a Level 1 Human Performance Evaluation, and removed the materials after the work was completed.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Protection Against External Factors attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e. core damage). Additionally, it was similar to the "not minor if" statement of Example 4.k in IMC 0612, Appendix E. This example stated that an issue was not minor if a credible fire scenario involving the identified transient combustibles could affect equipment important to safety. For this issue, transient combustible materials in use for work in progress were being stored in a Level 1 area where a fire could affect equipment important to safety, and a transient combustible evaluation had not been completed as required by licensee procedures. The finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because workers failed to validate the combustible control zone classification of the work area during the planning and preparation phase of

the project, resulting in the group not obtaining a transient combustible evaluation for the work area prior to commencing work. Contributing to this was ineffective change management communication for the newest revision to EN-DC-161, which re-classified many areas of the plant into different combustible control zones. [H.4(b)] (Section 1R05)

- Green. The inspectors identified a finding of very low safety significance and associated non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when licensee personnel failed to evaluate the aging effects of the biological shield wall wetted environment. Specifically, the licensee identified seeping water from the biological shield wall on several occasions, but did not evaluate the potential aging effects on the structure concrete and rebar. This finding was entered into the licensee's CAP as CR-PLP-2013-4041 to evaluate the potential aging effects.

The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to lead to a more significant safety concern. The finding screened as having very low safety significance (Green) because it did not result in a loss of operability or functionality. Specifically, the biological shield wall wetted environment had not resulted in the loss of functionality of the structure because recent wall visual inspection had not identified indications of immediate structural flaws, such as significant cracks or spalling. The inspectors determined that this finding had a cross-cutting aspect in the CAP component of the Problem Identification and Resolution cross-cutting area because the licensee failed to consider the potential aging effects following the discovery of water seeping from the biological shield wall. [P.1(a)] (Section 4OA2.1.b(1))

#### **Cornerstone: Occupational Radiation Safety**

- Green. The inspectors identified a finding of very low safety significance and two associated NCVs of TS 5.7.1 and one associated NCV of TS 5.7.2 when on three separate occasions, three separate workers unknowingly entered areas with greater than expected dose rates. Specifically, on April 10, 2012, the radiation protection (RP) staff inappropriately authorized plant personnel to enter a locked high radiation area in the Auxiliary Building Pipechase (ABP) 602' elevation that had not been appropriately radiologically characterized prior to the entry; and on April 25, 2012, and again on April 27, 2012, workers inside the containment 607' elevation staging equipment at the 'B' steam generator (S/G) manway inappropriately traversed high radiation areas with elevated dose rates near the 'A' S/G cubicle. On both occasions, workers deviated slightly from the briefed travel paths. The licensee entered this issue into their CAP as CR-PLP-2012-03229 and CR-PLP-2012-03313, and as part of their corrective actions, shared lessons learned from this issue with the RP staff to address survey adequacy and for enhanced communications with workers during pre-job briefings.

The inspectors determined that the performance deficiency was more than minor because it was associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone and adversely affected the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation, in that, worker entry into areas without knowledge of their radiological conditions placed them at increased risk for unnecessary radiation exposure. Additionally, it was similar to the "not minor if" statement of Example 6.h in IMC 0612, Appendix E. The finding was determined to be of very low safety significance because the problem was not an as-low-as-reasonably-achievable (ALARA) planning issue, there was no overexposure

nor substantial potential for an overexposure, and the licensee's ability to assess dose was not compromised. The finding had a cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area because the licensee failed to define and clearly communicate expectations regarding procedural compliance and ensure that personnel followed procedures. [H.4.b] (Section 2RS1.6)

#### **Licensee-Identified Violations**

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

## REPORT DETAILS

### Summary of Plant Status

The plant operated at or near full power during the entire inspection period.

#### 1. REACTOR SAFETY

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

#### 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. The inspectors' reviews focused specifically on the following plant systems due to their risk significance or susceptibility to cold weather issues:

- Heating/Insulation for Safety-Related Tanks T-2 and T-58; and
- Warm Water Recirculation 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 Conditions – Heavy Snowfall Conditions

###### a. Inspection Scope

On November 25-27, 2013, winter weather advisories were issued for expected heavy snow conditions. The inspectors observed the licensee's preparations and planning for the significant winter weather potential. The inspectors reviewed licensee procedures and discussed potential compensatory measures with control room



personnel. The inspectors focused on plant management's actions for implementing the station's procedures for ensuring that adequate personnel for safe plant operation and emergency response would be available. The inspectors conducted a site walkdown including walkdowns of various plant structures and systems to check for maintenance or other apparent deficiencies that could affect system operations during the predicted significant weather. The inspectors also reviewed CAP items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Documents reviewed are listed in the Attachment.

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)

a. Inspection Scope

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

- 1-2 Emergency Diesel Generator (EDG) during 1-1 EDG Testing;
- Service Water System during "C" Service Water Pump Inoperability; and
- 'A' Low Pressure Safety Injection following Maintenance and Testing.

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

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)

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 9: Screenhouse/Intake Structure/Elevation 590' Turbine Building;
- Fire Area 22: Turbine Lube Oil Room/Elevation 590' Turbine Building;
- Barrier between Fire Areas 11/12 and 2 Due to Operating Experience Associated with Unfused Ammeter Cables;
- Fire Area 10: East Engineered Safeguards/Elevation 570' Auxiliary Building; and
- Fire Area 13A: Main Corridors - North & South/Elevation 590' Auxiliary Building.

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

These activities constituted five quarterly fire protection inspection samples as defined in IP 71111.05-05. In addition to the finding below, a licensee-identified NCV is discussed in Section 4OA7 of this report.

b. Findings

Introduction: An NRC-identified finding of very low safety significance (Green) and an associated NCV of TS 5.4.1, "Procedures," was identified by the inspectors when licensee personnel failed to complete a transient combustible evaluation as required by procedure EN-DC-161, "Control of Combustibles." Specifically, transient combustible materials in use for work activities associated with the Spent Fuel Pool Cooling Heat Exchangers were being stored in the Auxiliary Building 590' corridor, a Level 1 Combustible Control Zone, without having a required transient combustible evaluation completed prior to or during the work window.

Description: While observing work activities in the Spent Fuel Pool Heat Exchanger room on November 14, 2013, the inspectors identified that there was not a transient combustible evaluation for the materials being used in that room or being stored in the Auxiliary Building corridor (590' elevation) outside of the room. During the work window, the door for the Spent Fuel Pool Heat Exchanger room was propped open to allow unimpeded access into the room. The combustible materials for this work were staged in this area for about 2 weeks while the activities were being conducted. An evaluation was never completed for these materials during the work window. Some of the combustible materials in this area included rolls of Rhino Rug, duct tape, and Griffon; extension cords and a power pack; anti-contamination clothing sets; rubber materials; and garbage bags.

Entergy fleet procedure EN-DC-161, "Control of Combustibles," provided the requirements and controls for the use and staging of transient combustible materials. The 590' elevation of the Auxiliary Building corridor and the adjoining rooms were considered a Level 1 Combustible Control Zone, as identified in Attachment 9.5 of EN-DC-161. A Level 1 zone was defined as, "a fire sensitive area of the plant where transient combustible loading is prohibited unless evaluated and approved via [this] procedure." This corridor was considered a Level 1 zone due to it being classified as an alternate shutdown area in the Palisades Post-Safe Shutdown Analysis, since both channels of control room process instrumentation associated with pressurizer pressure could be rendered inoperable from a fire in this area. Also, this corridor contained many cables that provided electrical power to equipment important to safety, including Charging Pumps, Air-Operated Valves (AOVs)/Motor-Operated Valves (MOVs) for the High Pressure Safety Injection, Low Pressure Safety Injection, and Containment Spray systems, Atmospheric Steam Dump Valves, Instrument Air Compressors, Safe Shutdown Ventilation systems, and both trains of Essential Alternating Current (AC) power. Section 5.6 of EN-DC-161, stated, in part, that, "a transient combustible evaluation shall be processed prior to the introduction of any combustible materials into plant areas designated as a Level 1 area." The issue was discussed with the Fire Marshall who provided coaching to the work groups involved, and the materials were removed once the work was completed. The licensee entered this issue into their CAP as CR-PLP-2013-04905.

Analysis: The inspectors determined that the failure to complete a transient combustible evaluation as required by procedure EN-DC-161, "Control of Combustibles," was a performance deficiency.

The inspectors determined that the performance deficiency was more than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," dated September 7, 2012, because it was associated with Protection Against External Factors attribute of the Mitigating Systems cornerstone, in the area of Fire, and adversely impacted 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). Additionally, the finding was similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 4.k. This example stated that an issue was 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 this area were within the zone of influence of the cable trays traversing the corridor, which contained the power for equipment important to safety and required for plant shutdown to hot or cold conditions.

The finding was screened in accordance with IMC 0609, Appendix F, "Fire Protection Significance Determination Process," Attachment 1, "Fire Protection Significance Determination Process Worksheet," 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 Post-Safe Shutdown Analysis documenting this area as an alternate shutdown area, since both channels of the control room process instrumentation for pressurizer pressure may be rendered inoperable following a fire in this area. The Palisades Post-Safe Shutdown Analysis also listed the equipment that would be affected by a fire in this area, which included safety-related equipment relied upon for reaching hot and cold shutdown conditions. The finding screened as having very low safety significance (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 Work Practices component of the Human Performance cross-cutting area, which required that the licensee effectively communicate expectations regarding procedural compliance and personnel practices to follow procedures to support human performance. In this case, the licensee's apparent cause evaluation identified that the workers did not validate the combustible control zone classification of the work area during the planning and preparation phase of the project, resulting in the group not requesting a transient combustible evaluation for the work area prior to work commencing. Contributing to this apparent cause was ineffective change management communication for the most recent revision of EN-DC-161, "Control of Combustibles," which re-classified many areas of the plant into different combustible control zones. [H.4(b)]

Enforcement: Technical Specification 5.4.1, "Procedures," requires that written procedures shall be established, implemented, and maintained for Site Fire Protection Program implementation. Entergy procedure EN-DC-161, "Control of Combustibles," provided the requirements and controls for the use and staging of transient combustible materials.

Contrary to this requirement, transient combustible materials were stored in a Level 1 zone without the completion of a transient combustible evaluation as required by EN-DC-161 prior to or during the work window. Corrective actions for this issue involved the Fire Marshal providing briefings on the newest revision of EN-DC-161 to all work groups onsite, removing the materials when the work was completed, reinforcing site expectations for "reference use" procedures, and adding a task for the Non-Licensed Operators to check for transient combustibles during their shiftly rounds. However, because this issued was of very low safety significance and was entered into the licensee's CAP as CR-PLP-2013-04905, this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC's Enforcement Policy (**NCV 05000255/2013005-01, Failure to Complete a Transient Combustible Evaluation**).

1R06 Flooding (71111.06)

a. Inspection Scope

The inspectors selected underground bunkers/manholes subject to flooding that contained cables whose failure could disable risk-significant equipment. The inspectors verified that the cables were not submerged, that splices were intact, and that appropriate cable support structures were in place. In those areas where dewatering devices were used, such as a sump pump, the inspectors verified that the device was operable and level alarm circuits were set appropriately to ensure that the cables would not be submerged. In those areas without dewatering devices, the inspectors verified that drainage of the area was available, or that the cables were qualified for submerged conditions. The inspectors also reviewed the licensee's corrective action documents with respect to past submerged cable issues identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- Manhole 8; and
- Manhole 4.

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

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed the licensee's testing of Spent Fuel Pool Cooling Heat Exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors compared the licensee's observations to acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. The inspectors also verified that test acceptance criteria considered differences between design conditions and testing conditions. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program (71111.11)

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

a. Inspection Scope

On October 22, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

On November 21, 2013, the inspectors observed the coordination between Operations personnel and Reactor Engineering during movement of irradiated fuel assemblies in the spent fuel pool. This was an activity that required heightened awareness or was related to increased risk. The inspectors evaluated the following areas:

- licensed operator performance;
- crew clarity and formality of communications;
- the ability to take timely actions in the conservative direction;
- the prioritization, interpretation, and verification of annunciator alarms (if applicable);
- the correct use and implementation of procedures;
- control board (or equipment) manipulations;

- the oversight and direction from supervisors; and
- the ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications (if applicable).

Crew performance in these areas was compared to pre-established operator action expectations, procedural compliance, and successful critical task completion requirements. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- Fire Protection System Diesel-Driven Fire Pumps; and
- Control Room Heating, Ventilation and Air Conditioning (HVAC).

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

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the Maintenance Rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2), or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- Spent Fuel Pool Rack Replacements;
- Spent Fuel Pool Heat Exchanger Inspection Windows; and
- New Fuel Receipt and Inspection Activities.

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 are listed in the Attachment.

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- EDG Ventilation Fans Past Operability;
- Criticality Analysis of Region 2 of the Spent Fuel Pool;
- Safety Injection Refueling Water Tank (SIRWT) Anchor Ring Cracking; and
- Service Water Leak in 'B' Critical Service Water Header.

The inspectors selected these potential operability issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and



design criteria in the appropriate sections of the TS and the 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.

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

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- Breaker Swap for Breaker 52-1901, the Power Supply for Motor Control Center 25;
- P-8C, 'C' Auxiliary Feedwater Pump, Preventive Maintenance Window;
- Auxiliary Feedwater Pumps Low Suction Pressure Switch Replacement;
- Replacement of 'A' Charging Pump Fluid Drive;
- P-54B, 'B' Containment Spray, Heliflow Cooler Preventive Maintenance; and
- Installation of New Ultra-Sonic Flow Meter Values for Feedwater Flow Calculations in Determining Reactor Power.

These activities were selected based upon the SSC's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): whether the effect of testing on the plant had been adequately addressed; whether testing was adequate for the maintenance performed; whether acceptance criteria were clear and demonstrated operational readiness; whether test instrumentation was appropriate; whether tests were performed as written in accordance with properly reviewed and approved procedures; whether equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and whether test documentation was properly evaluated. The inspectors evaluated these activities against TSs, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and 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, entering them into the CAP at the appropriate threshold, and correcting problems commensurate with their importance to safety. Documents reviewed are listed in the Attachment.

This inspection constituted six 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:

- QI-4, Pressurizer Pressure Safety Injection System Actuation Logic (routine);
- SPS-E-28, Load Tap Changer Checks on the Safeguards Transformer (routine);
- Primary Coolant System Unidentified Leakage (PCS leakage);
- MI-43, Reactor Vessel Level Monitoring System Channel Check (routine); and
- QI-46, Nuclear Instrument Power Range, Rod Drop Alarm Flux – Delta-T Tests (routine).

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, sufficient to demonstrate operational readiness, and consistent with the system design basis;
- was plant equipment calibration correct, accurate, and properly documented;
- were as-left setpoints within required ranges; and was the calibration frequency in accordance with TSs, the UFSAR, plant procedures, and applicable commitments;
- was measuring and test equipment calibration current;
- was test equipment used within the required range and accuracy, and were applicable prerequisites described in the test procedures satisfied;
- did test frequencies meet TS requirements to demonstrate operability and reliability;
- were tests performed in accordance with the test procedures and other applicable procedures;
- were jumpers and lifted leads controlled and restored where used;
- were test data and results accurate, complete, within limits, and valid;
- was test equipment removed after testing;
- where applicable for inservice testing activities, was testing performed in accordance with the applicable version of Section XI of the American Society

of Mechanical Engineers (ASME) 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;
- was equipment returned to a position or status required to support the performance of its safety function following testing; and
- were all problems identified during the testing appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment.

This inspection constituted four routine surveillance testing inspection samples and one reactor coolant system leak detection inspection sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings were identified.

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

a. Inspection Scope

The Office of Nuclear Security and Incident Response (NSIR) headquarters' staff performed an in-office review of the latest revisions to the Emergency Plan and various Emergency Plan Implementing Procedures (EPIPs) are listed in the Attachment.

The licensee transmitted the EPIP revisions to the NRC pursuant to the requirements of 10 CFR Part 50, Appendix E, Section V, "Implementing Procedures." The NRC's review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection. Documents reviewed are listed in the Attachment.

This inspection constituted one emergency action level and emergency plan changes sample as defined in IP 71114.04-05.

b. Findings

No findings were identified.

## 2. RADIATION SAFETY

### 2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The following inspection activities supplement those documented in NRC Inspection Report 05000255/2013004 and constitute one complete sample as defined in IP 71124.01-05.

#### .1 Inspection Planning (02.01)

##### a. Inspection Scope

The inspectors reviewed licensee performance indicators (PIs) for the Occupational Radiation Safety Exposure cornerstone. The inspectors reviewed the results of radiation protection program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

##### b. Findings

No findings were identified.

#### .2 Radiological Hazard Assessment (02.02)

##### a. Inspection Scope

The inspectors determined if there had been changes to plant operations since the last inspection that could result in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether the licensee assessed the potential impact of these changes and had implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last two radiological surveys from selected plant areas and evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material condition and performed independent radiation measurements to verify radiological conditions.

##### b. Findings

No findings were identified.

.3 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors selected various containers holding non-exempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers, and assessed whether the containers were labeled and controlled in accordance with 10 CFR 20.1904, "Labeling Containers," or met the requirements of 10 CFR 20.1905(g), "Exemptions To Labeling Requirements."

The inspectors reviewed selected occurrences where a worker's electronic personal dosimeter noticeably malfunctioned or alarmed. The inspectors evaluated whether workers responded appropriately to the off-normal condition. The inspectors assessed whether the issue was included in the CAP and dose evaluations were conducted as appropriate.

For work activities that could suddenly and severely increase radiological conditions, the inspectors assessed the licensee's means to inform workers of changes that could significantly impact their occupational dose.

b. Findings

No findings were identified.

.4 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitored potentially contaminated material leaving the Radiologically Controlled Area (RCA) and inspected the methods used for control, survey, and release of materials from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures and whether the procedures were sufficient to control the spread of contamination and prevent the unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had an appropriate sensitivity for the types of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicated the presence of licensed radioactive material.

The inspectors reviewed the licensee's procedures and records to verify that radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors assessed whether or not the licensee has established a de facto "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

The inspectors selected several sealed sources from the licensee's inventory records and assessed whether the sources were accounted for and verified to be intact.

The inspectors evaluated whether transactions since the last inspection involving nationally tracked sources were reported in accordance with 10 CFR 20.2207.

b. Findings

No findings were identified.

.5 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with licensee procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the licensee properly employed an NRC-approved method of determining effective dose equivalent.

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors examined the posting and physical controls for selected high radiation areas and very high radiation areas to verify conformance with the Occupational Radiation Safety PI.

b. Findings

No findings were identified.

.6 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the Radiation Protection (RP) manager the controls and procedures for high-risk high radiation areas and very high radiation areas. The inspectors discussed methods employed by the licensee to provide stricter controls over very high radiation area access as specified in 10 CFR 20.1602, "Control of Access to Very High Radiation Areas," and Regulatory Guide 8.38, "Control of Access to High and Very High Radiation Areas of Nuclear Plants." The inspectors assessed whether any changes to licensee procedures substantially reduced the effectiveness and level of worker protection.

The inspectors discussed the controls in place for special areas that had the potential to become very high radiation areas during certain plant operations with first-line health physics supervisors (or equivalent positions having backshift health physics oversight authority). The inspectors assessed whether these plant operations required communication with the health physics group beforehand, to allow

corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization.

The inspectors evaluated licensee controls for very high radiation areas and areas with the potential to become very high radiation areas to ensure that an individual was not able to gain unauthorized access to a very high radiation area.

b. Findings

(1) Inadequate Control of Entry Into High Radiation Areas (HRAs)

Introduction: The inspectors identified a finding of very low safety significance (Green) with two associated NCVs of TS 5.7.1 and one associated NCV of TS 5.7.2 for inadequate control of entry into HRAs and locked HRAs. Specifically, on three separate occasions, three separate workers unknowingly entered areas with greater than expected dose rates. Each entry was determined to be of more-than-minor safety significance.

Description: The inspectors identified a performance deficiency of inadequate control of entry into HRAs. Specifically, on three separate occasions, three separate workers unknowingly entered areas with greater than expected dose rates.

- On April 10, 2012, the radiation protection (RP) staff inappropriately authorized plant personnel to enter a locked HRA in the Auxiliary Building Pipechase (ABP) 602' elevation that had not been appropriately radiologically characterized prior to the entry. The ABP 602' elevation was an area subject to rapidly changing radiological conditions, especially during a refueling outage as primary system water and resins are moved through the pipechase as the plant is transitioned through different modes and operating conditions. An Instrument and Control (I&C) technician was briefed to enter the ABP 602' elevation by RP staff using historical radiological survey information. The historical radiological survey information was determined a nominal 5 days before the radiation protection technician authorized the individual to enter the ABP 602' elevation and without verification of the current radiological conditions. The worker was briefed to expect nominal dose rates of 400 mrem/hr and the worker encountered dose rates higher than those briefed. Specifically, the worker received an electronic dosimeter (ED) dose rate alarm of 692 mrem/hr when he entered an area that had actual dose rates of up to 1300 mrem/hr. The worker immediately left the area after receiving the ED alarm.
- On April 25, 2012, and again on April 27, 2012, workers were inside the containment 607' elevation staging equipment at the 'B' steam generator (S/G) manway when they traversed an area of elevated dose rates in the opposite S/G cubicle, or the 'A' S/G cubicle. The briefed and expected dose rates were less than 100 mrem/hr. On both occasions, workers deviated from the briefed travel paths, encountering general area dose rates of up to 104 mrem/hr. On neither occasion were the workers briefed on their actual radiological conditions.

Station radiation safety procedure EN-RP-101, "Access Control for Radiologically Controlled Areas," Attachment 9.9 for HRA access specifically stated, in part, that workers be briefed on their radiological hazards, including radiological dose rates, prior to entering an HRA. The license entered this issue into their CAP as

CR-PLP-2012-03229 and CR-PLP-2012-03313, and CR-PLP-2012-02384. As corrective actions, lessons learned were shared with the RP staff to ensure survey adequacy and for enhanced communications with workers during pre-job briefings. Additional corrective actions were implemented to address personal accountability and to evaluate the need for procedure improvements.

Analysis: The inspectors determined that the issue of concern was a performance deficiency because entry was made into HRAs without adequate controls, in that, workers were not accurately briefed on their radiological conditions, as required by station TSs. The inspectors determined that the cause of the performance deficiency was reasonably within the licensee's ability to foresee and correct and should have been prevented.

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

The inspectors determined that the performance deficiency was more than minor because it impacted the program and process attribute of the Occupational Radiation Safety Cornerstone and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that, worker entry into HRAs without knowledge of the radiological conditions placed them at increased risk for unnecessary radiation exposure. Also, the inspectors reviewed the guidance in IMC 0612, Appendix E, Examples of Minor Issues, and identified Example 6.h as similar to the performance issue. Although the individuals were authorized to enter their work areas to perform work, the workers were not made aware of the correct radiological conditions. The finding was assessed using the Occupational Radiation Safety SDP and was determined to be of very low safety significance because the problem was not an ALARA planning issue, there were no overexposures nor substantial potential for overexposures given the highest dose rates present in the room and the scope of work, and the licensee's ability to assess dose was not compromised.

The licensee failed to adequately control access to elevated dose rate conditions and, therefore, the workers were not made aware of the actual conditions. Consequently, the inspectors determined that the cause of this incident involved a cross-cutting component in the human performance area for work practices. Specifically, work practices require that the licensee define and clearly communicate expectations regarding procedural compliance and that personnel follow procedures. [H.4.b]

Enforcement: Technical Specification 5.7.2 requires, in part, that entry into locked HRAs will be made after the dose rate levels in the area have been established and personnel are made aware of them. Contrary to the above, on April 10, 2012, a worker entered a locked HRA without the requisite knowledge of the radiological conditions of the area. This issue was entered into the licensee's CAP as CR-PLP-2012-02384.

Technical Specification 5.7.1 requires, in part, that entry into HRAs will be made after the dose rate levels in the area have been established and personnel are made aware of them. Contrary to the above, on April 25, 2012, and again on April 27, 2012, workers entered HRAs without the requisite knowledge of the radiological conditions of the areas. These issues have been entered in the licensee's CAP as



CR-PLP-2012-03229 and CR-PLP-2012-03313. Since these failures to comply with Technical Specifications were of very low safety significance and the issues have been entered into the licensee's CAP, these violations are being treated as NCVs, consistent with Section 2.3.2 of the NRC Enforcement Policy (**NCV 05000255/20013005-02, Inadequate Control of Entry into High Radiation Areas**).

(2) Evaluation of HRA Controls on the Refuel Floor

Introduction: The inspectors identified an Unresolved Item (URI) concerning the control of a HRA specified in TS 5.7.1 for refuel floor activities on April 18, 2012.

Description: On April 18, 2012, while work was being performed on the refuel floor that changed general area dose rates (removal of the Upper Guide Structure), a worker entered an area within a HRA on the refuel floor in which the worker was unaware of the dose rates present. On January 10, 2014, the RP manager provided the NRC with additional information regarding HRA controls that were in place during this entry.

The issue is an URI pending completion of an evaluation of the additional information provided by the licensee (**URI 05000255/2013005-03, Evaluation of HRA Controls on the Refuel Floor**).

.1 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors reviewed radiological problem reports issued since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RP manager any issues with the corrective actions planned or taken.

b. Findings

No findings were identified.

.2 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors reviewed radiological problem reports issued since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective was consistent with the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings were identified.

.3 Problem Identification and Resolution (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to the plant.

b. Findings

No findings were identified.

2RS2 Occupational As-Low-As-Reasonably-Achievable Planning and Controls (71124.02)

The inspection activities supplement those documented in NRC Inspection Report 05000255/2012003 and constitute one complete sample as defined in IP 71124.02-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed pertinent information regarding plant collective exposure history, current exposure trends, and ongoing or planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's 3-year rolling average collective exposure.

The inspectors reviewed site-specific trends in collective exposures and source term measurements.

The inspectors reviewed site-specific procedures associated with maintaining occupational exposures ALARA, which included a review of processes used to estimate and track exposures from specific work activities.

b. Findings

No findings were identified.

.2 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors selected the following work activities of the highest exposure significance.

- Repair Pressurizer Spray Control Valve CV-0157;
- Forced Outage T-58 Safety Injection Refueling Water Tank (SIRWT) and Catacombs;

- Forced Outage Repair of CRD-24 Housing;
- Scaffolding Activities in Containment;
- Refuel Project: Incore Instrumentation/Upper Guide Structure Lift Rig Activities;
- ISI – Alloy 600 FAC [Flow Accelerated Corrosion] Exams and Associated Weld Preparations in Containment; and
- Crane and Rigging Activities for 1R22 Refueling Outage.

The inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements. The inspectors determined whether the licensee reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

The inspectors assessed whether the licensee's planning identified appropriate dose mitigation features, considered alternate mitigation features, and defined reasonable dose goals. The inspectors evaluated whether the licensee's ALARA assessment had taken into account decreased worker efficiency from use of respiratory protective devices and/or heat stress mitigation equipment (e.g., ice vests). The inspectors determined whether the licensee's work planning considered the use of remote technologies (e.g., teledosimetry, remote visual monitoring, and robotics) as a means to reduce dose and the use of dose reduction insights from industry operating experience and plant-specific lessons learned. The inspectors assessed the integration of ALARA requirements into work procedure and radiation work permit documents.

The inspectors compared the results achieved (dose rate reductions, person-rem used) with the intended dose established in the licensee's ALARA planning for these work activities. The inspectors compared the person-hour estimates provided by maintenance planning and other groups to the radiation protection group with the actual work activity time requirements, and evaluated the accuracy of these time estimates. The inspectors assessed the reasons (e.g., failure to adequately plan the activity, failure to provide sufficient work controls) for any inconsistencies between intended and actual work activity doses.

The inspectors determined whether post-job reviews were conducted and if identified problems were entered into the licensee's CAP.

b. Findings

Introduction: The inspectors identified a URI concerning the collective dose received by workers repairing the CRD-24 housing during the August 2012 forced outage.

Description: During the August 2012 forced outage, numerous work tasks were performed, including repairs of the CRD-24 housing. The initial dose estimate for this work as reflected on the Radiation Work Permit (RWP) was 2.950 Rem. The actual dose expended was 26.563 Rem. The data provided by the licensee at the time of the onsite inspection was not sufficient for the inspectors to complete their regulatory review of the collective dose received during this work activity. The licensee provided additional data to the NRC on January 7, 2014, that will be used to determine whether the dose received was within the licensee's ability to control.

This issue is an URI pending completion of the inspectors' evaluation of the additional information provided by the licensee (**URI 05000255/2013005-04, Evaluation of Dose Received by Workers Repairing Control Rod Drive-24**).

.3 Verification of Dose Estimates and Exposure Tracking Systems (02.03)

a. Inspection Scope

The inspectors evaluated the licensee's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered. The inspectors assessed whether adjustments to exposure estimates (intended dose) were based on sound radiation protection and ALARA principles, or if they were only adjusted to account for failures to properly control the work. The inspectors evaluated whether the frequency of these adjustments called into question the adequacy of the original ALARA planning process.

b. Findings

No findings were identified.

.4 Source Term Reduction and Control (02.04)

a. Inspection Scope

The inspectors used licensee records to determine the historical trends and current status of significant tracked plant source terms known to contribute to elevated facility aggregate exposure. The inspectors assessed whether the licensee had made allowances or developed contingency plans for expected changes in the source term as the result of plant fuel performance issues or changes in plant primary chemistry.

b. Findings

No findings were identified.

.5 Problem Identification and Resolution (02.06)

a. Inspection Scope

The inspectors evaluated whether problems associated with ALARA planning and controls were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05)

This inspection constituted one complete sample as defined in IP 71124.05-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the plant's UFSAR to identify radiation instruments associated with monitoring area radiological conditions including airborne radioactivity, process streams, effluents, materials/articles, and workers. Additionally, the inspectors reviewed the instrumentation and the associated TS requirements for post-accident monitoring instrumentation, including instruments used for remote emergency assessment.

The inspectors reviewed a listing of in-service survey instrumentation including air samplers and small article monitors, along with instruments used to detect and analyze workers' external contamination. Additionally, the inspectors reviewed personnel contamination monitors and portal monitors, including whole-body counters, to detect workers' internal contamination. The inspectors reviewed this list to assess whether an adequate number and type of instruments were available to support operations.

The inspectors reviewed licensee and third-party evaluation reports of the radiation monitoring program since the last inspection. These reports were reviewed for insights into the licensee's program and to aid in selecting areas for review (i.e., "smart sampling").

The inspectors reviewed procedures that governed instrument source checks and calibrations, focusing on instruments used for monitoring transient high radiological conditions, including instruments used for underwater surveys. The inspectors reviewed the calibration and source check procedures for adequacy and as an aid to smart sampling.

The inspectors reviewed the area radiation monitor alarm setpoint values and setpoint bases as provided in the TSs and the UFSAR.

The inspectors reviewed effluent monitor alarm setpoint bases and the calculational methods provided in the Offsite Dose Calculation Manual (ODCM).

b. Findings

No findings were identified.

.2 Walkdowns and Observations (02.02)

a. Inspection Scope

The inspectors walked down effluent radiation monitoring systems, including at least one liquid and one airborne system. Focus was placed on flow measurement devices and all accessible point-of-discharge liquid and gaseous effluent monitors of the selected systems. The inspectors assessed whether the effluent/process monitor configurations aligned with ODCM descriptions and observed monitors for degradation and out-of-service tags.

The inspectors selected portable survey instruments that were in use or available for issuance and assessed calibration and source check stickers for currency as well as instrument material condition and operability.

The inspectors observed licensee staff performance as the staff demonstrated source checks for various types of portable survey instruments. The inspectors assessed whether high-range instruments were source checked on all appropriate scales.

The inspectors walked down area radiation monitors and continuous air monitors to determine whether they were appropriately positioned relative to the radiation sources or areas they were intended to monitor. Selectively, the inspectors compared monitor response (via local or remote control room indications) with actual area conditions for consistency.

The inspectors selected personnel contamination monitors, portal monitors, and small article monitors and evaluated whether the periodic source checks were performed in accordance with the manufacturer's recommendations and licensee procedures.

b. Findings

No findings were identified.

.3 Calibration and Testing Program (02.03)

Process and Effluent Monitors

a. Inspection Scope

The inspectors selected effluent monitor instruments (such as gaseous and liquid monitors) and evaluated whether channel calibration and functional tests were performed consistent with radiological effluent TSs/ODCM. The inspectors assessed whether: (a) the licensee calibrated its monitors with National Institute of Standards and Technology traceable sources; (b) the primary calibrations adequately represented the plant nuclide mix; (c) when secondary calibration sources were used, the sources were verified by the primary calibration; and (d) the licensee's channel calibrations encompassed the instrument's alarm setpoints.

The inspectors assessed whether the effluent monitor alarm setpoints were established as provided in the ODCM and station procedures.

For changes to effluent monitor setpoints, the inspectors evaluated the basis for changes to ensure that an adequate justification existed.

b. Findings

No findings were identified.

Laboratory Instrumentation

a. Inspection Scope

The inspectors assessed laboratory analytical instruments used for radiological analyses to determine whether daily performance checks and calibration data

indicated that the frequency of the calibrations was adequate and there were no indications of degraded instrument performance.

The inspectors assessed whether appropriate corrective actions were implemented in response to indications of degraded instrument performance.

b. Findings

No findings were identified.

Whole Body Counter

a. Inspection Scope

The inspectors reviewed the methods and sources used to perform whole body count functional checks before daily use of the instrument and assessed whether check sources were appropriate and aligned with the plant's isotopic mix.

The inspectors reviewed whole body count calibration records since the last inspection and evaluated whether calibration sources were representative of the plant source term and whether appropriate calibration phantoms were used. The inspectors looked for anomalous results or other indications of instrument performance problems.

b. Findings

No findings were identified.

Post-Accident Monitoring Instrumentation

a. Inspection Scope

The inspectors selected containment high-range monitors and reviewed the calibration documentation since the last inspection.

The inspectors assessed whether an electronic calibration was completed for all range decades above 10 rem/hr and whether at least one decade at or below 10 rem/hr was calibrated using an appropriate radiation source.

The inspectors assessed whether calibration acceptance criteria were reasonable, accounting for the large measuring range and the intended purpose of the instruments.

The inspectors selected effluent/process monitors that were relied on by the licensee in its emergency operating procedures as a basis for triggering emergency action levels and subsequent emergency classifications, or to make protective action recommendations during an accident. The inspectors evaluated the calibration and availability of these instruments.

The inspectors reviewed the licensee's capability to collect high-range, post-accident iodine effluent samples.

As available, the inspectors observed electronic and radiation calibration of these instruments to assess conformity with the licensee's calibration and test protocols.

b. Findings

No findings were identified.

Portal Monitors, Personnel Contamination Monitors, and Small Article Monitors

a. Inspection Scope

For each type of these instruments used on site, the inspectors assessed whether the alarm setpoint values were reasonable under the circumstances to ensure that licensed material was not released from the site.

The inspectors reviewed the calibration documentation for each instrument selected and discussed the calibration methods with the licensee to evaluate consistency with the manufacturer's recommendations.

b. Findings

No findings were identified.

Portable Survey Instruments, Area Radiation Monitors, Electronic Dosimetry, and Air Samplers/Continuous Air Monitors

a. Inspection Scope

The inspectors reviewed calibration documentation for at least one of each type of instrument. For portable survey instruments and area radiation monitors, the inspectors reviewed detector measurement geometry and calibration methods and had the licensee demonstrate use of its instrument calibrator, as applicable. The inspectors conducted comparison of instrument readings to an NRC survey instrument if problems were suspected.

As available, the inspectors selected portable survey instruments that did not meet acceptance criteria during calibration or source checks to assess whether the licensee had taken appropriate corrective action for instruments found significantly out of calibration (greater than 50 percent). The inspectors evaluated whether the licensee had evaluated the possible consequences of instrument use since the last successful calibration or source check.

b. Findings

No findings were identified.

Instrument Calibrator

a. Inspection Scope

As applicable, the inspectors reviewed the current output values for the licensee's portable survey and area radiation monitor instrument calibrator units. The inspectors



assessed whether the licensee periodically measured calibrator output over the range of the instruments used through measurements by ion chamber/electrometer.

The inspectors assessed whether the measuring devices had been calibrated by a facility using National Institute of Standards and Technology traceable sources and whether correction factors for these measuring devices were properly applied by the licensee in its output verification.

b. Findings

No findings were identified.

Calibration and Check Sources

a. Inspection Scope

The inspectors reviewed the licensee's 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," source term to assess whether calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

.4 Problem Identification and Resolution (02.04)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved radiation monitoring instrumentation.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

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

.1 Inspection Planning and Program Reviews (02.01)

Event Report and Effluent Report Reviews

a. Inspection Scope

The inspectors reviewed the radiological effluent release reports issued since the last inspection to determine if the reports were submitted as required by the TSs/ODCM. The inspectors reviewed anomalous results, unexpected trends, or abnormal releases

identified by the licensee for further inspection to determine if they were evaluated, were entered in the CAP, and were adequately resolved.

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

b. Findings

No findings were identified.

Offsite Dose Calculation Manual and Final Safety Analysis Report Review

a. Inspection Scope

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

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

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

b. Findings

No findings were identified.

Groundwater Protection Initiative Program

a. Inspection Scope

The inspectors reviewed reported groundwater monitoring results and changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater. This included the groundwater monitoring results near the waste receiver tanks where historical leaks were identified.

b. Findings

No findings were identified.

## Procedures, Special Reports, and Other Documents

### a. Inspection Scope

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

The inspectors reviewed effluent program implementing procedures, particularly those associated with effluent sampling, effluent monitor setpoint determinations, and dose calculations.

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

### b. Findings

No findings were identified.

## .2 Walkdowns and Observations (02.02)

### a. Inspection Scope

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

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

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

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

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

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

b. Findings

No findings were identified.

.3 Sampling and Analyses (02.03)

a. Inspection Scope

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

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

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

The inspectors reviewed the results of the inter-laboratory comparison program to evaluate the quality of the radioactive effluent sample analyses and assessed whether the inter-laboratory comparison program included hard-to-detect isotopes, as appropriate.

b. Findings

No findings were identified.

.4 Instrumentation and Equipment (02.04)

Effluent Flow Measuring Instruments

a. Inspection Scope

The inspectors reviewed the methodology the licensee used to determine the effluent stack and vent flow rates to determine if the flow rates were consistent with the radiological effluent TSs/ODCM or UFSAR values, and whether differences between assumed and actual stack and vent flow rates affected the results of the projected dose to the public.

b. Findings

No findings were identified.

## Air Cleaning Systems

### a. Inspection Scope

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

### b. Findings

No findings were identified.

## .5 Dose Calculations (02.05)

### a. Inspection Scope

The inspectors reviewed all significant changes in reported dose values compared to the previous radiological effluent release report (e.g., a factor of five, or increases that approached Appendix I criteria) to evaluate the factors which may have resulted in the change.

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

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

The inspectors reviewed changes to the licensee's offsite dose calculations since the last inspection to evaluate whether these changes were consistent with the ODCM and Regulatory Guide 1.109. The inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to evaluate whether appropriate factors were being used for public dose calculations.

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

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

The inspectors reviewed, as available, records of any abnormal gaseous or liquid tank discharges (e.g., discharges resulting from misaligned valves, valve leak-by, etc.) to ensure the abnormal discharge was monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages, were reviewed to ensure that an evaluation was made of the discharge to

satisfy 10 CFR 20.1501 so as to account for the source term and projected doses to the public.

b. Findings

No findings were identified.

.6 Groundwater Protection Initiative Implementation (02.06)

a. Inspection Scope

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

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

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

Assessing whether sufficient radiological surveys were performed to evaluate the extent of the contamination and the radiological source term and assessing whether a survey/evaluation had been performed to include consideration of hard-to-detect radionuclides.

Determining whether the licensee completed offsite notifications, as provided in its Groundwater Protection Initiative implementing procedures.

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

The inspectors assessed whether onsite ground water sample results and a description of any significant onsite leaks/spills into ground water for each calendar year were documented in the Annual Radiological Environmental Operating Report for the radiological environmental monitoring program or the Annual Radiological Effluent Release Report for the Radiological Effluent Technical Specifications.

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

b. Findings

No findings were identified.

.7 Problem Identification and Resolution (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with the effluent monitoring and control program were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee's CAP. In addition, the inspectors evaluated the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving radiation monitoring and exposure controls.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to assess whether the radiological environmental monitoring program was implemented in accordance with the TSs and ODCM. This review included reported changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the UFSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection "smart samples." The inspectors also reviewed audits and technical evaluations performed on the vendor laboratory, if used.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," report to determine if the licensee was sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down selected air sampling stations and dosimeter monitoring stations to determine whether they were located as described in the ODCM and to assess equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors; and dosimeters were selected based on the most risk-significant locations (e.g., those that had the highest potential for public dose impact).

For the air samplers and dosimeters selected, the inspectors reviewed the calibration and maintenance records to evaluate whether they demonstrated adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors assessed whether the licensee had initiated sampling of other appropriate media upon loss of a required sampling station.

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

Based on direct observation and a review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the UFSAR, Regulatory Guide 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants," and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report. The inspectors selected events that involved a missed sample, inoperable sampler, lost dosimeter, or anomalous measurement, to determine if the licensee had identified the cause and had implemented corrective actions. The inspectors reviewed the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

The inspectors selected SSCs that involved or could reasonably involve licensed material for which there was a credible mechanism for licensed material to reach ground water, and assessed whether the licensee had implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection were retained in a retrievable manner.



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

The inspectors assessed whether the appropriate detection sensitivities with respect to TSs/ODCM were used for counting samples (i.e., the samples meet the TSs/ODCM required lower limits of detection). The licensee used a vendor laboratory to analyze the radiological environmental monitoring program samples, so the inspectors reviewed the results of the vendor's quality control program, including the inter-laboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's inter-laboratory comparison program to evaluate the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the inter-laboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the radiological environmental monitoring program.

b. Findings

No findings were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

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

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

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

#### 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 Alternating Current (AC) Power System PI for the period from the fourth quarter of 2012 through the third quarter 2013. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, CRs, event reports, and NRC Integrated Inspection Reports for the period of the fourth quarter of 2012 through the third quarter of 2013 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.

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 PI for the period from the fourth quarter of 2012 through the third quarter of 2013. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, CRs, MSPI derivation reports, event reports, and NRC Integrated IRs for the period of the fourth quarter of 2012 through the third quarter of 2013 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.

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

b. Findings

No findings were identified.

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the reactor coolant system specific activity PI for the period from the fourth quarter 2012 through the third quarter 2013. The inspectors used PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's reactor coolant system chemistry samples, TS requirements, CRs, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

.4 Radiological Effluent TS/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the radiological effluent TS/ODCM radiological effluent occurrences PI for the period from the fourth quarter 2012 through the third quarter 2013. The inspectors used PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 31, 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's CR database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment.

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.

.5 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System (RCS) Leakage PI for the period from the fourth quarter 2012 through the third quarter 2013. 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 6, dated October 2009, were used. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, event reports, and NRC Integrated Inspection Reports for the period of October 2012 through September 2013 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's CR database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

.6 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the occupational radiological occurrences PI for the period from the fourth quarter 2012 through the third quarter 2013. The inspectors used PI definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, dated August 2013, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff the scope and breadth of its data review and the results of those reviews. The inspectors independently reviewed electronic personal dosimetry dose rate and accumulated dose alarms and dose reports, and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings were identified.

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

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

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

##### a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included whether identification of the problem was complete and accurate; whether timeliness was commensurate with the safety significance; whether evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and whether the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

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

##### b. Findings

No findings were identified.

#### .2 Daily Corrective Action Program Reviews

##### a. Inspection Scope

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

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

##### b. Findings

No findings were identified.

### .3 Semiannual Trend Review

#### a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. Additionally, the inspectors evaluated the licensee's progress with several aspects of their Site Recovery Plan, in line with the deviation from the Reactor Oversight Process Action Matrix in place at Palisades. The inspectors' review nominally considered the 6-month period of July 2013 through December 2013, although some examples expanded beyond those dates where the scope of the trend warranted.

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

The inspectors noted continued licensee attention throughout the year on several items listed in the Recovery Plan. As a result, performance improved in those areas as evidenced by improved performance indicators and positive quality assurance observations. The improvements generally aligned with inspector observations as well. For instance, the licensee improved accountability for the tracking and execution of key system health work orders and the monitoring of equipment health in general. As a result, some longer-standing modifications to improve operator and plant performance were completed. The inspectors also noted a general reduction in the number of long-standing operations issues. Additionally, the backlog of needed procedure revisions dropped throughout the year in both the Operations and Maintenance departments due to increased licensee attention. Finally, the licensee's assessment and management of risk, especially for emergent issues and high risk evolutions, continued to show improvement.

However, the inspectors noted continued issues with regard to the planning and execution of routine scheduled maintenance. There were many instances where schedule conflicts, parts issues, or work instruction adequacy caused delays in the execution of work and schedule perturbations. Many of the issues could have been resolved as part of the formalized planning process in the weeks prior to work execution. The inspectors did note; however, that when conflicts or questions arose, work was put on hold and appropriately assessed by the licensee before moving forward.

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

#### b. Findings

No findings were identified.

.4 Selected Issue for Followup Inspection: Review of Operator Workarounds

a. Inspection Scope

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

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

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

b. Findings

No findings were identified.

.5 Selected Issue for Followup Inspection: Age-Related Issues (Followup from the Palisades Deviation)

a. Inspection Scope

The inspectors assessed the effectiveness of the licensee's CAP in addressing potential age-related issues. This inspection was conducted as part of the deviation from the Reactor Oversight Process Action Matrix to increase regulatory oversight at the Palisades Nuclear Plant in Calendar Year 2013. This assessment consisted of interviews of plant personnel, reviews of CRs and operating experience evaluations related to potential age-related issues, procedures, and WOs. In addition, the inspectors conducted walkdowns to assess the physical and environmental condition of selected components installed at the station and spare parts stored in the warehouse.

This review resulted in the following observations:

- The inspectors noted two examples of potential age-related issues not captured in the CAP. Subsequently, the licensee initiated CR-PLP-2013-04041 and CR-PLP-2013-03948. One of the examples was associated with an NCV documented in Section 4OA2.1.b(1) of this report.
- The inspectors identified another example of the licensee's failure to evaluate potential aging effects since the Post-Approval Site Inspection for License Renewal conducted in 2011 and documented in NRC Inspection Report 05000255/2011008. Specifically, NRC Inspection Report 05000255/2011008 documented a finding of very low safety significance associated with the failure to evaluate the aging effects of water accumulation in between the partial double wall and on the exterior wall of the EDG fuel oil storage tank. The finding documented in Section 4OA2.1.b(1) of this report is associated with the failure to evaluate the aging effects of the biological shield wall wetted environment. Both performance deficiencies were similar and violated the same regulatory requirement in that the licensee did not adhere to license renewal implementing procedure requirements to evaluate the aging effects of internal operating experience in accordance with their CAP. In addition, both NCVs had the same cross-cutting aspect in that the licensee's CAP did not identify issues completely.
- The inspectors found 22 critical components out of a sample of 55 that were incorrectly categorized as non-critical components by the licensee and an additional component that was not classified. As a result, the licensee initiated CR-PLP-2013-03916 and CR-PLP-2013-04026. However, the licensee reviewed the applicable preventive maintenance templates and determined that the in-place preventative maintenance activities for the affected components was deemed appropriate for the higher classifications.

Documents reviewed are listed in the Attachment to this report. This review constituted one in-depth Problem Identification and Resolution sample as defined in IP 71152-05.

b. Findings

(1) The Aging Effects of the Biological Shield Wall Wetted Environment Were Not Being Managed

Introduction: A finding of very low safety significance and associated NCV of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the failure to evaluate the aging effects of the biological shield wall wetted environment. Specifically, the licensee identified seeping water from the biological shield wall in several occasions but did not evaluate the potential aging effects to the structure concrete and rebar.

Description: Section 5.9.2 of the UFSAR, "Containment Interior Structures," stated the biological shield wall forms the reactor cavity and, thus, supports the reactor vessel. In addition, it stated the wall is a Class 1 structure. Section 9.2 of the UFSAR, "Reactor Primary Shield Cooling System," stated the structure must remain



intact during a design basis accident to preclude damage to the reactor building sump and the plugging of the suction lines to the engineered safeguards pumps. It also stated the reactor primary shield cooling system assures the concrete in the reactor cavity does not overheat and develop excessive thermal stress. The system includes cooling coils embedded in the concrete three inches from the inner wall surface. The biological shield wall is approximately 7 to 8 feet thick.

In 1979, the licensee identified a decreasing level at the reactor primary shield cooling tank and determined the cooling coils embedded in the biological shield wall were leaking. As a result, the licensee took actions to repair the coils by injecting a clay-based resin in 1983 and 1989. In 1998, the licensee identified the 'A' coil was leaking again and attempted a repair in 2003. In 2004, CR 2004-6251 was initiated for the discovery of leakage of the 'A' coil. This time the licensee determined leak sealing was not warranted because leakage was insignificant and did not affect the ability to cool the structure.

In 2010, the licensee identified a brown substance along a portion of the outer side of the biological shield wall. The licensee initiated CR 2010-02504 and theorized the source was leakage from the shield cooling system. A sample was collected and the analysis did not find evidence of microbiological activity. The inspectors noted the scope of this analysis did not include the identification of the leak source and the only potential effect to the wall considered was microbiological-induced corrosion. The licensee noted the substance again during walkdowns performed in 2011, 2012, and 2013. These discoveries were captured in the CAP as CR 2011-04221, CR 2012-02584, and CR 2013-2193.

While reviewing these CRs and interviewing plant personnel, the inspectors noted the potential aging effects of the seeping water to the structure were not evaluated. The inspectors were concerned because seeping water is indicative of an environment that could promote degradation of the concrete and rebar. In addition, pictures taken during the walkdowns discussed above illustrated a rusty colored liquid.

The inspectors also noted that Procedure No 3.26, "Implementation of Palisades Renewed License Requirements," stated that consideration of internal and external operating experience could result in changes to Aging Management Programs and/or aging management activities. In addition, it stated that processing and evaluation of internal operating experience is governed by EN-LI-102, "Corrective Action Process." Step 5.2(e) of EN-LI-102 stated "Employees are required to initiate CRs for adverse conditions..." Step 3.2 stated that adverse conditions included conditions adverse to quality (CAQ). Step 3.8 defined CAQs and stated "This is a condition of a system, structure, component or software (SSC) that could potentially render the SSC degraded or inoperable." Step 3.16 defined degraded condition as "one in which the qualification of a structure, system or component or its functional capability is reduced." It also stated that aging is an example of conditions that can reduce SSC capability. However, although the discoveries of seeping water were captured in the CAP, the CRs did not include the associated potential aging effects. As a result, they were not evaluated.

The licensee captured the inspectors' concerns in their CAP as CR 2013-4041. As an immediate corrective action, the licensee review wall visual inspection results and did not find evidence of cracks or spalling that represent an immediate structural concern. The corrective actions that were been considered at the time of this inspection were to collect a sample of the substance during the next containment entry, analyze its composition to determine source and carbon content, and determine any warranted action.

Analysis: The inspectors determined the failure to evaluate the aging effects of the water seeping from the biological shield wall was contrary to Procedure No 3.26 and was a performance deficiency. The performance deficiency was determined to be more than minor because, if left uncorrected, it would have the potential to become a more significant safety concern. Specifically, the failure to consider internal operating experience to ensure age related deterioration of structure, systems, and components within the scope of Aging Management Programs, such as the aging effects of the water seeping from the biological shield wall, does not provide assurance that their intended function would be maintained consistent with the current licensing basis through the period of extended operation. This finding impacted the Mitigating System cornerstone.

The inspectors determined the finding could be evaluated using the Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings." Because the finding impacted the Mitigating Systems cornerstone, the inspectors screened the finding through IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," using Exhibit 2, "Mitigating Systems Screening Questions." The finding screened as of very low safety significance (Green) because it did not result in the loss of operability or functionality. Specifically, the biological shield wall wetted environment had not resulted in the loss of functionality of the structure because recent wall visual inspection had not found indications of immediate structural flaws such as significant cracks or spalling.

The inspectors determined that this finding had a cross-cutting aspect in the area of problem identification and resolution because the licensee did not identifies issues completely. Specifically, the licensee failed to consider the potential aging effects following the discovery of water seeping from the biological shield wall. [P.1(a)]

Enforcement: 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed and accomplished by procedures appropriate to the circumstances. Step 5.2(e) of EN-LI-102 stated "Employees are required to initiate CRs for adverse conditions..." Step 3.2 stated that adverse conditions included CAQs. Step 3.8 stated that CAQs are conditions that could potentially render the SSC degraded or inoperable. Step 3.16 defined degraded condition as "one in which the qualification of a structure, system or component or its functional capability is reduced" and stated that aging is an example of conditions that can reduce SSC capability.

Contrary to the above, as of September 12, 2013, the licensee did not follow Procedure EN-LI-102 when addressing the discovery of water seeping from the biological shield wall. Specifically, the licensee did not initiate a CR to capture the potential aging effects associated with the water seeping from the biological shield wall.

At the time of this inspection period, the licensee was still evaluating its planned corrective actions. However, the inspectors determined that the continued non-compliance did not present an immediate safety concern because recent wall visual inspection had not found indications of immediate structural flaws such as significant cracks or spalling.

Because this violation was of very low safety significance and was entered into the licensee's CAP as CR 2013-4041, this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000255/2013005-06, The Aging Effects of the Biological Shield Wall Wetted Environment Were Not Being Managed).

(2) Qualification Basis for Safety-Related Agastat Relays and Molded Case Circuit Breakers

Introduction: The inspectors identified an Unresolved Item (URI) regarding the licensee's actions to maintain or extend the qualification basis for safety-related Agastat relays and Molded Case Circuit Breakers (MCCBs) installed in mild environments greater than vendor design life specifications.

Description: In 2004, the licensee received Westinghouse Electric Technical Bulletin TB-04-13 02, "Replacement Solutions for Obsolete Classic MCCBs, UL [Underwriters Laboratory] Testing Issues, Breaker Design Life and Trip Band Adjustment," which was superseded in 2006 by TB-06-02, "Aging Issues and Subsequent Operating Issues for Breakers That are at Their 20-Year Design/Qualified Lives; UL Certification/Testing Issues Update." These bulletins informed the licensee about MCCB aging issues. Specifically, grease and red oil used in these breakers were found to be key limiting factors for continued operability within published specifications. As grease and red oil aged beyond 20 years, their lubrication properties were reduced, resulting in slower trip times beyond the published time-current curves. The bulletins further defined the design life of MCCBs in mild environments as 20 years. However, the inspectors noted that two safety-related MCCBs installed in mild environments exceeded 20 years and the licensee had not performed an engineering evaluation to justify continued operation beyond this design life. The affected MCCBs were associated with two station battery chargers.

The inspectors also questioned the licensee's management of the design life of safety-related Agastat relays installed in mild environments. Specifically, vendor documents specified a life of 10 years from the date of manufacture. However, the licensee was not replacing these components in accordance with the vendor specification and had not performed an engineering evaluation to justify continued operation beyond the published life limit. As a result of the inspectors' questions, the licensee consulted with the vendor who clarified the 10-year life was only applicable to relays installed in harsh environments. In addition, the vendor letter stated that it was at the discretion of the individual licensees to establish their own method for determining service life intervals.

The licensee maintained that their Electric Power Research Institute (EPRI)-based preventative maintenance (PM) template evaluations provided the basis for replacement of safety-related components installed in mild environments. Specifically, the licensee evaluated replacement intervals for components based on component criticality and service conditions (i.e., duty cycle). For some components,

the replacement interval was based on performance using the PM task results to justify continued use. However, the inspectors questioned if PM activities were sufficient to detect age-related degradation of components in mild environments.

The licensee captured the inspectors' questions in their CAP as CR-PLP-2013-04344 and CR-PLP-2013-04010. This issue is a URI pending further review, including consultation with the Office of Nuclear Reactor Regulation, and determination of further NRC actions to resolve the issue (**URI 05000255/2013005-06, Qualification Basis for Safety-Related Agastat Relays and Molded Case Circuit Breakers**).

(3) Periodic Design Basis Testing of Safety-Related Electrical Components

Introduction: The inspectors identified a URI associated with the requirements for periodic design basis testing of safety-related electrical components.

Description: The licensee's Quality Assurance Program Manual stated they were committed to Regulatory Guide 1.30, "Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment." This Regulatory Guide endorsed Institute of Electrical and Electronics Engineers (IEEE) Standard 336-1971 (also known as American National Standards Institute (ANSI) N45.2.4-1972) as adequate for demonstrating compliance with the pertinent quality assurance requirements of 10 CFR Part 50, Appendix B. In addition, Section C.3 of Regulatory Guide 1.30 stated, "Although Subdivision 1.1 of ANSI N45.2.4-1972 states the requirements promulgated apply during the construction phase of a nuclear power plant, these requirements are also to be considered applicable for the installation, inspection, and testing of instrumentation and electric equipment during the operation phase of a nuclear power plant." IEEE Standard 336-1971, Section 3.3, "Procedures and Instructions," required the licensee to produce "documents that shall be kept current by controlled supervision so that installation, inspections, and tests are performed in accordance with the latest approved design and manufacturers' instructions." However, while reviewing the licensee's management of component design life, the inspectors noted the licensee did not periodically test safety-related electrical components to the design requirements. The licensee interpreted the intent of Section C.3 of Regulatory Guide 1.30 as to apply IEEE 336 requirements only to modifications and activities that were similar to initial construction activities.

This issue is a URI pending further review, including consultation with the Office of Nuclear Reactor Regulation, and determination of further NRC actions to resolve the issue (**URI 05000255/2013005-07, Periodic Design Basis Testing of Safety-Related Electrical Components**).

.6 Selected Issue Followup Inspection: Review of URI 05000255/2011014-09, Potential Loss of Preferred AC Sources in Harsh Environment

a. Inspection Scope

The inspectors continued to followup on the issue by reviewing the licensee's assessment of the environmental qualification of cables relevant to the URI located in the turbine building. Additionally, the inspectors ascertained the status of corrective actions for the URI. The licensee continued to maintain the nonsafety-related loads isolated to prevent any impact on safety-related equipment pending final resolution of

the open corrective actions. The inspectors planned to review the final corrective actions once completed by the licensee.

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

b. Findings

No findings were identified.

.7 Selected Issue Followup Inspection: Safety Injection Refueling Water Tank (SIRWT) Leakage (Followup from the Palisades Deviation)

a. Inspection Scope

On May 4, 2013, the licensee noted excessive leakage from the SIRWT to the roof that the tank rests on. The plant had been operating with leakage from the tank per an approved American Society of Mechanical Engineers (ASME) Code Case. The licensee shut the plant down to repair the tank. The inspectors assessed licensee efforts to determine the cause of the leak and the proposed corrective actions to allow the tank to be safely returned to service. Additional activities to assess the completeness of the licensee's root cause efforts in light of previous leaks and potential configuration control issues over time regarding tank design were planned to be inspected in 2014. One issue related to the qualification of Chemical and Volume Control System (CVCS) piping was resolved by the inspectors. Followup efforts completed in 2013 constituted completion of one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings were identified.

.8 Selected Issue Followup Inspection: Review of Passive Component Program (Followup From the Palisades Deviation)

a. Inspection Scope

The inspectors reviewed condition reports and operability evaluations associated with various passive component failures over the past 6 months. The licensee's overall structure and implementation of the Flow Accelerated Corrosion (FAC) and Microbiologically Induced Corrosion programs were reviewed, focusing on the issues identified in CRs. The inspectors also reviewed the corrective actions and refueling outage inspection/repair plans for the service water system issues identified in 2013. The inspectors planned to assess the corrective actions instituted and inspections conducted during the upcoming refueling outage to ensure the licensee was implementing the program as described.

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

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report (LER) 05000255/2012-002-00: Technical Specification Required Shutdown Due to Unisolable Secondary Side Drain Valve Leak

a. Inspection Scope

On November 4, 2012, at approximately 0230, a plant operator identified a pinhole steam leak in a drain line near an atmospheric dump valve on a steam generator. The licensee initially considered the leak to not render any SSC inoperable. At 1115, the licensee concluded that reasonable assurance of operability no longer existed and declared the 'B' primary coolant loop inoperable. The NRC reviewed the licensee's operability assessment in 2012 and issued finding 05000255/2012005-01 regarding concerns with the licensee's application of their operability determination process. The licensee entered Mode 3 at 1621 in compliance with the required action of TS 3.4.4, Condition A. This condition required the licensee to place the plant in Mode 3 within 6 hours. The licensee entered Mode 5 at 1224 on November 5 to effect repairs. In reviewing the LER, the inspectors noted that the licensee did not report a condition prohibited by TSs as required by 10 CFR 50.73(a)(2)(i)(B). Specifically, during generation of the LER following the event, the licensee did not consider that identification of the leak at 0230 on November 4 provided firm evidence that the RCS loop was inoperable at that time. The licensee did not include this information in the LER, as the information block pertaining to operations prohibited by TSs was unchecked and the narrative did not discuss the initial discovery of the leak. Given that TS 3.4.4, Condition A, required the licensee to place the plant in Mode 3 within 6 hours, the report should have included a recognition that a condition prohibited by TSs existed. With respect to reporting, the inspectors reviewed the NRC's Enforcement Policy. The policy included the statement: "A failure to identify all applicable reporting codes on a Licensee Event Report that may impact the completeness or accuracy of other information (e.g., performance indicator data) submitted to the NRC" as an example of a Severity Level IV violation. In this case, the failure did not impact the performance indicator data; therefore, the inspectors concluded the performance deficiency represented a minor violation. The inspectors did not identify any other issues. This LER is closed.

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

b. Findings

No findings were identified.

.2 (Closed) LER 05000255/2013-003-00: Both Control Room Ventilation Filtration Trains Declared Inoperable

On August 13, 2013, both control room ventilation filtration trains were declared inoperable in accordance with TS 3.7.10, Condition B, due to the inability to fully close control room envelope boundary door, Door-15. Workers, who were executing maintenance activities inside the control room HVAC room, attempted to exit using Door-15, but were unable to do so through the normal egress operation of the door with the hand wheel. The workers used the emergency egress latch to exit. Upon trying to close the door once out of the room, the door could not be closed due to

interferences between the door's latching pins and the door frame. After approximately 9 minutes, the door was able to be latched closed, per design, and the TS Limiting Condition for Operations (LCO) condition was exited. A cotter pin, which was thought to be deformed, was subsequently replaced and the preventive maintenance frequency of replacing that pin was reviewed as a corrective action. The LER was reviewed and no findings or violations of NRC requirements were identified. Documents reviewed are listed in the Attachment. This LER is closed.

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

#### 4OA5 Other Activities

##### .1 Temporary Instruction 2515/182 - Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

###### a. Inspection Scope

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued guidance document NEI 09-14, "Guideline for the Management of Buried Piping Integrity," (ADAMS Accession No. ML1030901420) to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122), with an expanded scope of components, which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued Temporary Instruction (TI) 2515/182, "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks," to gather information related to the industry's implementation of this initiative. In April 2013, the industry issued Revision 3 to NEI 09-014 to address changes in program scope and milestone dates (ADAMS Accession No. ML13130A322).

From December 16-20, 2013, the inspectors conducted a review of records and procedures related to the licensee's program for buried pipe, underground pipe, and tanks in accordance with Phase II of TI-2515/182. Additionally, the inspectors performed a site walkdown of the accessible portions of the cathodic protection system components to assess the material condition of this system designed to reduce the corrosion of buried piping systems. This review was performed to confirm that the licensee's program contained attributes consistent with Sections 3.3.A and 3.3.B of NEI 09-14 and to confirm that these attributes were scheduled and/or completed by the NEI 09-14 Revision 3 deadlines. The inspectors interviewed licensee staff responsible for the Buried Pipe Program and reviewed documentation to determine whether the program was managed effectively.

Based upon the scope of the review described above, Phase II of TI-2515/182 was completed.

The inspectors also reviewed the licensee's resolution to URI 05000255/2012005-04, "Underground Pipe and Tank Program - Potential Deviations from NEI 09-14 Guideline," identified during the Phase I review under TI-2515/182. Based upon this review, URI 0500255/2012005-004 is closed.

b. Observations

The licensee's buried piping and underground piping and tanks program was inspected in accordance with Paragraph 03.02.a of the TI and it was confirmed that the following activity which corresponded to a completion date specified in the program which had passed since the Phase I inspection was conducted, had not been completed on schedule.

- The Condition Assessment Plan for Underground Piping and Tanks was required to be issued by December 31, 2012, to meet the NEI 09-14 milestone date. However, the licensee identified missing pipe segments that were not in the original Condition Assessment Plan and therefore did not have a completed Condition Assessment Plan issued until March 6, 2013. The licensee notified the Buried Pipe Task Force of this deviation on November 22, 2013, and entered this issue into their CAP as CR-PLP-2013-04994 in accordance with Section 6.3.2 of NEI 09-14. The licensee recorded the following as justification for this deviation in CR-PLP-2013-04994: "The previous determination that the date had been met is based on the fact that NEI was aware of this missing scope in early 2013 and agreed that past milestone dates that were met based on the incomplete scope were in fact still met and the new piping is discovery after the fact. The Section 3.3.B.3 Milestone date was originally considered part of those past milestones. However, further review identified that since Section 3.3.B.3 had not been previously met, it should not be grandfathered in as part of the discovery effort."

Additionally, the licensee's Buried Piping and Underground Piping and Tanks Program was inspected in accordance with Paragraph 03.02.b of the TI and responses to specific questions found in <http://www.nrc.gov/reactors/operating/ops-experience/buried-pipe-ti-phase-2-insp-req-2011-11-16.pdf> were submitted to the NRC Headquarters staff.

Resolution of Potential Deviations from NEI 09-14 Guidelines

The inspectors had previously identified that the licensee's implementation of the Underground Piping and Tanks Inspection and Monitoring Program potentially deviated from NEI 09-14, "Guideline for the Management of Buried Piping Integrity," and documented these issues in URI 05000255/2012005-04. The inspectors reviewed the licensee's resolution of the six potential deviations from the NEI 09-014 Guidelines as discussed below.

- Procedure EN-DC-343, "Underground Piping and Tanks Inspection and Monitoring Program," allowed exclusion of buried pipe line segments and appeared to conflict with Section 3.1, "Scope," of NEI 09-14, which included: "All piping that is below grade and contains any fluid and is in direct contact with the soil." Specifically, EN-DC-343, Section 5.3, "Risk Ranking," Step 4, stated, "An underground segment whose failure is inconsequential and would cause no direct or collateral damage to plant SSCs may be excluded from the scope of the program." The inspectors were concerned that providing a procedure which allowed excluding pipe segments within the scope of the NEI 09-14 guidelines from the risk ranking process may require a deviation



from NEI 09-14, Section 3.1. The licensee subsequently issued Revision 7 to EN-DC-343, which included a requirement to document the basis for excluding piping segments from the program in accordance with Appendix C of NEI 09-14. Therefore, no deviation from the NEI 09-14 guidelines was required.

- Procedures EN-DC-343 and CEP-UPT-0100, “Underground Piping and Tanks Inspection and Monitoring,” did not contain instructions for justifying and approving exceptions to the initiative and the licensee assigned a due date of December 30, 2013, to correct this error. However, the licensee had not considered Section 6.2.1, “Procedures and Oversight,” of NEI 09-14, which required that the necessary procedural governance and oversight responsibilities be in place by June 30, 2010, and this included a process for justifying and approving exceptions to the initiative. The inspectors were concerned that a lack of procedural instructions for justification of exceptions to the initiative by the due date may require a deviation from NEI 09-14, Section 6.2.1. The licensee subsequently issued revisions to the procedures discussed above, that included guidance for documenting and reporting deviations in accordance with NEI 09-14. Because this issue was corrected, no deviation from the NEI 09-14 guidelines was required.
- Procedures EN-DC-343 and CEP-UPT-0100 did not contain instructions to report buried pipe inspection results to EPRI and the licensee established a due date of December 30, 2013, to correct these procedures. However, the licensee had not considered Section 3.3.A.4, “Plan Implementation,” of NEI 09-14, which required implementation of the inspection plan to start no later than June 30, 2012, and Paragraph 6.2.4, “Plan Implementation,” of NEI-09-14 required that all inspection results (whether degradation existed or not) be reported to EPRI in the manner prescribed by the Buried Piping Integrity Group Project Manager. The licensee could not provide records to demonstrate that the results of buried pipe inspections were reported to EPRI (most recent inspections of buried pipe were completed in November of 2012). The inspectors were concerned that not providing EPRI with the buried pipe inspection results may require a deviation from NEI 09-14, Sections 3.3.A.4 and 6.2.4. The licensee subsequently revised Section 5.9.6 of CEP-UPT-0100 to require reporting of buried pipe inspection results to EPRI. Therefore, no deviation from the NEI 09-14 guidelines was required for this issue.
- Sixteen buried lines containing radiological materials and in excess of 75 nonradiological buried pipe lines were not included in the licensee’s buried pipe program and risk evaluation completed in 2008 (reference LO-HQNLO-2008-00015, CA 25, 26 and 27). The licensee had contracted with a vendor to re-perform a risk evaluation of the piping within the program by February of 2013 and stated the scope of this new risk evaluation would include the buried lines missed in the original reviews. However, the licensee had not considered Section 3.3.A.2, “Risk Ranking,” of NEI 09-14, which required completion of the risk ranking of buried pipe segments by December 31, 2010, to determine the likelihood and consequences of failure for each buried pipe segment. The inspectors were concerned that not including a substantive number of buried pipe lines in the original risk ranking

by the due date may require a deviation from NEI 09-14, Section 3.3.A.2. The licensee subsequently completed a risk ranking of these pipe segments and incorporated the results into Revision 2 of SEP-UIP-005, "Underground Components Inspection Plan." Because this issue was corrected, no deviation from the NEI 09-14 guidelines was required.

- The licensee's buried pipe risk ranking had not been periodically reviewed and updated since the original risk ranking was completed in 2008 (reference LO-HQNLO-2008-00015, CA 25, 26 and 27). This appeared to conflict with Sections 3.3.A.2 and 6.2.2 of the NEI guidelines, which stated that the risk ranking shall be periodically reviewed and updated as necessary to reflect inspection results, changes in operating conditions, and design modifications. Further, the lack of a review was not consistent with Section 5.9.2 of CEP-UPT-0100, which required the Underground Pipe and Tank Program Engineer and the Groundwater Protection Specialist to perform a periodic review (at 6 month intervals) to update the scope and risk ranking for changes that had occurred. The inspectors were concerned that the lack of periodic reviews of the program scope and risk ranking may require a deviation from NEI 09-14, Section 3.3.A.2 and 6.2.2. The licensee created an administrative preventive maintenance activity to ensure the 6-month periodic review was accomplished in accordance with CEP-UPT-0100. Therefore, no deviation from the NEI 09-14 guidelines was required.
- In SEP-UIP-005, "Underground Components Inspection Plan," Revision 1, the licensee did not identify each of the attributes required by NEI 09-14, Section 3.3.A.3, for an inspection plan. Specifically, for buried piping lines containing radiological material identified in Appendix A1 of SEP-UIP-005, 13 lines did not identify the portion of the line (piping segment) subject to inspection and 7 lines did not identify the intended/potential inspection technique. Additionally, for non-radioactive buried piping lines identified in Appendix A2 of SEP-UIP-005, each of the 27 lines listed did not identify the risk ranking or the pipe segment subject to inspection, and for 10 lines the intended/potential inspection technique was not identified. Therefore, SEP-UIP-005 appeared to conflict with NEI 09-14, Section 3.3.A.3, "Inspection Plan," that required the inspection plan to include the following key attributes: identification of piping segments to be inspected, potential inspection techniques, inspection schedule based on risk ranking, and assessment of cathodic protection (if applicable). The inspectors were concerned that the licensee's Underground Components Inspection Plan did not identify specific pipe segments to be inspected, included pipe segments without inspection techniques, and establish an inspection schedule without risk ranking pipe segments, and may require a deviation from NEI 09-14, Section 3.3.A.3. The licensee subsequently completed CA-7 to CR-PLP-2012-00631, which incorporated the potential inspection techniques for high risk pipe line segments into SEP-UIP-005. The licensee also completed CA-2 to CR-PLP-2012-007697 to evaluate the lack of potential inspection techniques in SEP-UIP-005 as a potential deviation from Section 3.3.A.3 of NEI 09-14. The licensee subsequently discussed the CA-2 issue with the NEI task force members to determine if this should be considered a deviation to NEI 09-14. Based on this discussion, the licensee determined that this issue

was not considered a deviation that required reporting to NEI and CA-2 was closed.

- The objective of TI-182 was to determine whether licensees were implementing the industry initiative on underground piping and tank integrity and to gather information that will enable the NRC to assess whether the initiative provided reasonable assurance of the structural and leakage integrity of buried piping and underground piping and tanks. NEI 09-14 was a voluntary initiative under the “Guideline for the Management of Materials Issues” (NEI 03-08). As such, the implementation of these initiatives was not a regulatory requirement and any commitments made in the implementation of the initiatives did not constitute regulatory requirements as discussed in Regulatory Information Summary (RIS) 2000-17, “Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC Staff,” and NEI 99-04, “Guidelines for Managing NRC Commitment Changes.” The issues identified above were considered performance deficiencies of minor significance. Based upon the review discussed above, URI 0500255/2012005-004 is closed.

c. Findings

No findings were identified.

.2 (Closed) Anomalous Environmental Samples (URI 05000255/2011003-07)

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

The licensee subsequently completed a more thorough evaluation of Cs-137 in the broadleaf samples and in the environment. This evaluation included sampling leaves and soil/sediment in multiple areas away from the plant and other sources of Cs-137. Additionally, the licensee completed a review of technical literature that reported results of Cs-137 in the environment within the United States and within Michigan from fallout from atomic bomb testing and other widely known events. The results of this evaluation were published in the 2011 and 2012 Annual Environmental Operating Report. This item is closed with no further action.

#### 4OA6 Management Meetings

##### .1 Exit Meeting Summary

On January 9, 2014, the inspectors presented the inspection results to Mr. A. Vitale and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

##### .2 Interim Exit Meetings

Interim exits were conducted for:

- The inspection results for the areas of radioactive gaseous and liquid effluent treatment; and radiological environmental monitoring with Mr. A. Vitale, Site Vice President, and other members of the licensee staff on November 8, 2013.
- The inspection results for the Age Related Issues inspection with Mr. B. Davis and other members of the licensee staff on September 13, 2013, and with Mr. O. Gustafson, Director of Regulatory and Performance Improvement, and other members of the licensee staff on December 10, 2013.
- The inspection results for the Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks (TI-2515/182) inspection with Mr. A. Vitale, Site Vice President, on December 20, 2013.
- The inspection results for the areas of radiological hazard assessment and exposure controls; occupational ALARA planning and controls; radiation monitoring instrumentation; and the occupational exposure control effectiveness performance indicator verification with Mr. A. Vitale, Site Vice President, on December 6, 2013, and again with Mr. O' Gustafson, Director of Regulatory and Performance Improvement, on January 15, 2014.

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

#### 4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee. The NRC is not taking enforcement action for this violation because it meets the criteria of the NRC Enforcement Policy, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)," as described below.

- Upon review of industry operating experience regarding unfused remote direct current ammeter circuits, the licensee discovered a similar configuration existed at Palisades. The wires supplying a current signal from the output of each station battery to their respective ammeters in the adjacent room were unfused. As a result, a fire in either battery room could create multiple grounds which could cause the wire to heat up and cause a secondary fire in

the adjacent space (Cable Spreading Room). This condition represented a degraded fire barrier and was contrary to the requirements in 10 CFR 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," specifically, Section III G.1. Because the licensee committed to adopt National Fire Protection Association (NFPA) 805 and revise their fire protection licensing bases to comply with 10 CFR 50.48(c), and this commitment was documented prior to December 31, 2005, the NRC is exercising enforcement and ROP discretion for this issue in accordance with the NRC Enforcement Policy, Section 9.1, "Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)" and IMC 0305. This issue was identified and addressed during the licensee's transition to NFPA 805, it was entered into the licensee's CAP as CR-PLP-2013-04817, immediate corrective action and compensatory measures were taken, it was not likely to have been previously identified by routine licensee efforts, it was not willful, and it was not associated with a finding of high safety significance (Red). Specifically, utilizing IMC 0609 Appendix F, Attachment 1, "Fire Protection SDP Phase 1 Worksheet," the issue screened as having very low safety significance per Question 1.4.3.C based on the presence of an automatic fire suppression system.

The following violations of very low safety significance (Green) or Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as NCVs.

- TS 5.7.1 requires, in part, that each entryway into each HRA, as defined in 10 CFR Part 20 shall be barricaded and conspicuously posted as a HRA.

Contrary to the above, on April 16, 2012, the licensee identified an area inside the biological shield wall in the containment building elevation 590' elevation that was accessible by a scaffold ladder, was a HRA as defined in 10 CFR Part 20, and that the entryway into this area was not barricaded or conspicuously posted as a HRA. The licensee corrected the issue and documented it in CR-PLP-2012-02735. The inspectors determined that the finding was of very low safety significance (Green) because it was not an ALARA planning issue, there was no overexposure nor potential for an overexposure, and the licensee's ability to assess dose was not compromised.

- Technical Specification 5.7.1 requires, in part, that each entryway into each HRA, as defined in 10 CFR Part 20, shall be barricaded and conspicuously posted as a HRA.

Contrary to the above, on May 7, 2012, the licensee identified that the Waste Gas Surge Tank (T-67) Room was a HRA as defined in 10 CFR Part 20, and that the entryway into the room was not barricaded or conspicuously posted as a HRA. The licensee corrected the issue and documented it in CR-PLP-2012-03714. The inspectors determined that the finding was of very low safety significance (Green) because it was not an ALARA planning issue, there was no overexposure or potential for an overexposure, and the licensee's ability to assess dose was not compromised.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

T. Vitale, Site Vice President  
C. Berggren, Radiation Protection Specialist  
M. Cimock, Engineer Plant Programs – Buried Pipe Program Owner  
B. Davis, Engineering Director  
T. Foudy, System Engineering Supervisor  
A. Gennrich, Chemistry Technician  
O. Gustafson, Director of Regulatory and Performance  
J. Miksa, Licensing Engineer  
M. Mlynarek, Chemistry Manager  
D. Watkins, Radiation Protection Manager

#### Nuclear Regulatory Commission

E. Duncan, Chief, Reactor Projects Branch 3  
J. Benjamin, Acting Chief, Reactor Projects Branch 4  
B. Jose, Acting Chief, Reactor Safety  
N.J. Félix Adorno, Reactor Engineer

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened

05000255/2013005-01	NCV	Failure to Complete a Transient Combustible Evaluation (1R05)
05000255/2013005-02	NCV	Three Examples of Inadequate Control of Entry into High Radiation Areas (2RS1.6)
05000255/2013005-03	URI	Evaluation of HRA Controls on the Refuel Floor (2RS1.6)
05000255/2013005-04	URI	Evaluation of Dose Received by Workers Repairing Control Rod Drive 24 (2RS2.2)
05000255/2013005-05	NCV	Aging Effects of the Biological Shield Wall Wetted Environment Not Managed (4OA2.1.b(1))
05000255/2013005-06	URI	Qualification Basis for Safety-Related Agastat Relays and Molded Case Circuit Breakers (4OA2.5)
05000255/2013005-07	URI	Periodic Design Basis Testing of Safety-Related Electrical Components (4OA2.5)

### Closed

05000255/2013005-01	NCV	Failure to Complete a Transient Combustible Evaluation (1R05)
05000255/2013005-02	NCV	Three Examples of Inadequate Control of Entry into High Radiation Areas (2RS1.6)
05000255/2013005-05	NCV	Aging Effects of the Biological Shield Wall Wetted Environment Not Managed (4OA2.5)
05000255/2012-002-00	LER	Technical Specification Required Shutdown Due to Unisolable Secondary Side Drain Valve Leak (4OA3.1)
05000255/2013-003-00	LER	Both Control Room Ventilation Filtration Trains Declared Inoperable (4OA3.2)
05000255/2012005-04	URI	Underground Pipe and Tank Program - Potential Deviations from NEI 09-14 Guideline (4OA5.1)
05000255/2011003-07	URI	Anomalous Environmental Samples (Section 4OA5.2)

### Discussed

05000255/2011014-09	URI	Potential Loss of Preferred AC Sources in Harsh Environment (4OA2.6)
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## 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

- AOP-38, Acts of Nature Basis Document, Revision 0
- AOP-38, Acts of Nature, Revision 0
- CR-PLP-2013-00045, Equipment and Procedure Deficiency Regarding C-16A/B Vacuum Pumps, January 4, 2013
- CR-PLP-2013-01181, F-13B Seal Water Supply Strainer Not Rotating, March 18, 2013
- Palisades' Winter Weather Contingency Plan, Revision 1
- SOP-14, Circulating Water and Chlorination Systems, Revision 73
- SOP-23, Cold Weather Checklists- Electrical, Revision 42
- WO 52450039, Perform Cold Weather Checksheets
- WO 52513841, Operational Check of Warm Water Recirculation Pump

### 1R04 Equipment Alignment

- CR-PLP-2013-0750, CV-0823 Remote Position Light Did Not Go Out, February 20, 2013
- CR-PLP-2013-0750, CV-0823 Remote Position Light Indicated Intermediate in the Control Room, February 20, 2013
- CR-PLP-2013-4104, EDG 1-2, K-6B, Starting Air Pressure Control Reading Out-of-Spec Low, September 18, 2013
- M-208, P&ID Service Water System, Sheet 1A, Revision 62
- M-214, P&ID Lube Oil, Fuel Oil & Diesel Generator Systems, Sheet 1, Revision 78
- SOP-15, Service Water System, Revision 55
- SOP-22, Checklist 22.1, Diesel Generators System Checklist, Revision 59
- SOP-22, Emergency Diesel Generators, Revision 59
- SOP-3, Engineering Safeguards and Shutdown Cooling System, Revision 93

### 1R05 Fire Protection

- CR-PLP-2013-04817, OE Review Reveals Battery Ammeter Cable Issue, November 7, 2013
- CR-PLP-2013-05060, Cart Loaded with Transient Combustible Material and No Evaluation was Found in the VRS Area of Auxiliary Building, November 29, 2013
- CR-PLP-2013-4905, Combustible Material Staged Without a Required Transient Combustible Evaluation Being Completed, November 15, 2013
- CR-PLP-2013-5313, Found Four 5 Gallon Jugs of Oil in the Corridor of the 590' Aux Building without Transient Combustible Evaluation Paperwork, December 17, 2013
- EA-PSSA-00-001, Palisades Post-Safe Shutdown Analysis, Revision 2
- EN-DC-161, Control of Combustibles, Revision 9
- Palisades Nuclear Plant Fire Hazards Analysis, Revision 7
- Pre-Fire Plan for East Engineered Safeguards Room / Elev. 570', Fire Area 10
- Pre-Fire Plan for Main Corridor – North & South Auxiliary Building / Elev. 590', Fire Area 13A
- Pre-Fire Plan for Screenhouse/Intake Structure / Elev. 590', Fire Area 9
- Pre-Fire Plan for Turbine Lube Oil Room / Elev. 590', Fire Area 22



## 1R06 Flooding

- CR-PLP-2009-05292, Water Found in Manholes with Safety-Related and Maintenance Rule Cabling, November 16, 2009
- CR-PLP-2013-04541, During Manhole 4 Inspection, Unistrut Ladder Leaning, October 21, 2013
- EN-DC-346, Cable Reliability Program, Revision 5
- EPRI Whitepaper: Review of Suitability of EPR Medium Voltage Cables for Wet and Submerged Conditions, Draft 3, August 18, 2009
- LO-PLP-2010-145, Cable Reliability Program Focused Assessment, March 21-24, 2011
- Selected work order history of manhole pumping with results

## 1R07 Annual Heat Sink Performance

- ANATEC-ET-33, Eddy Current Examination of Balance of Plant Tubing, Revision 4
- CEP-NDE-0901, Visual Examination, Revision 4
- CR-PLP-2013-4765, E-53A Spent Fuel Pool Heat Exchanger Eddy Current Inspection Identifies Tubes Require Repair by Plugging, November 5, 2013
- CR-PLP-2013-4824, E-53B Spent Fuel Pool Heat Exchanger Eddy Current Inspection Identifies Tubes Require Repair by Plugging, November 7, 2013
- EA-EC46993-01, E-53A/B Spent Fuel Pool Heat Exchanger Tube Plugging, Revision 0
- EN-DC-316, Heat Exchanger Performance and Condition Monitoring, Revision 5
- ENO-24-PN1-01, Final Eddy Current Inspection Report of the Spent Fuel Pool Coolers: HX-E-53A and HX-E-53B, November 2013
- Palisades Report: Eddy Current Examination of Spent Fuel Pool Exchanger E-53A and E-53B, January 2001
- PAL-VT-13-112, Inspection of South Endbell Internal Welds, November 5, 2013
- SEP-HX-PLP-001, Heat Exchanger Condition Assessment Program, Revision 1
- WO #52263690, E-53A; SFP Heat Exchanger Internal Inspection/Leak Test, October 31, 2013
- WO #52272753, E-53B; SFP Heat Exchanger Internal Inspection/Leak Test, October 31, 2013

## 1R11 Licensed Operator Requalification Program

- AOP-17, Loss of 125V DC Panel(s), Revision 0
- AOP-23, Primary Coolant Leak, Revision 0
- Emergency Action Level Technical Bases, Revision 6
- EOP-1, Standard Post-Trip Actions, Revision 15
- EOP-4, Loss-Of-Coolant Accident Recovery, Revision 22
- Palisades Fuel Movement Sheets for moves November 21, 2013
- Simulator Exam Scenario-115, Revision 2
- SOP-28, Fuel Handling System, Revision 50

## 1R12 Maintenance Effectiveness

- COP-22A, Diesel Fuel Oil Testing Program, Revision 20
- CR-PLP-2012-04305, As-Found Condition of PS-1675 Found in Closed Position, June 5, 2012
- CR-PLP-2012-04325, VC-11 Pressure Switch Out of As-Found Tolerance Low, June 6, 2012
- CR-PLP-2012-06909, Door 15 Stuck Open, October 26, 2012
- CR-PLP-2013-01297, Door 15 Failed to Latch, March 24, 2013
- CR-PLP-2013-01714, CRHVAC System Near a(1) Status, April 17, 2013
- CR-PLP-2013-03523, Door 15 Unable to be Closed, October 23, 2013
- CR-PLP-2013-04529, VC-11 Shaft has Oil Leak, October 20, 2013

- CR-PLP-2013-3920, During Inspection of Lube Oil on P-41, Diesel Driven Cooling Tower Fire Water Pump, Suspect Fuel Oil Entered Crankcase and Mixed with Lube Oil, September 4, 2013
- CR-PLP-2013-4043, Functional Failure Determination for CR-PLP-2013-3920 Has Identified a Repeat Functional Failure, September 13, 2013
- CR-PLP-2013-4150, P-41 Oil Sump Level is High with Strong Odor of Fuel Oil Present, September 20, 2013
- CR-PLP-2013-4371, P-41 Has Indication of Fuel Oil in Crankcase Sump, October 7, 2013
- CR-PLP-2013-4388, Functional Failure Determination for CR-PLP-2013-4150 Identified that the Failure of the Fuel Oil Check Valves is a Repeat Functional Failure, October 8, 2013
- CR-PLP-2013-4389, Leaking Check Valves Continue to Plague the Diesel Driver for P-41, October 8, 2013
- CR-PLP-2013-4477, Cooling Tower Diesel Driven Fire Pump, P-41, Has Exceeded Its Total Maintenance Hours, 219, with a Total of 220.7 Through 10/16/13, October 16, 2013
- CR-PLP-2013-4670, Functional Failure Determination for CR-PLP-2013-4371 Identified that the Failure of the Fuel Oil Check Valves is a Repeat Functional Failure, October 29, 2013
- CR-PLP-2013-4848, During P-41 Surveillance Found a Large Amount of Fuel Oil in the Lube Oil, November 10, 2013
- CR-PLP-2013-4848, During Performance of P-41 Surveillance Test Found Large Amount of Fuel Oil in the Lube Oil, November 10, 2013
- CR-PLP-2013-5151, Functional Failure Determination for CR-PLP-2013-4848 Identified that the Diesel Fuel in the Crankcase is a Repeat Functional Failure, December 2, 2013
- Diesel Fire Pump Day Tanks Sampling Data, January 2012 through November 2013
- EGAD-EP-10, Palisades Maintenance Rule Scoping Document, Revision 0
- EN-DC-150, Condition Monitoring of Maintenance Rule Structures, Revision 5
- EN-DC-205, Maintenance Rule Monitoring, Revision 4
- EN-DC-206, Maintenance Rule (a)(1) Process, Revision 2
- Equipment Apparent Cause Evaluation for Diesel Fuel Leak into K-10 Diesel Driver Crankcase, Revision 0
- Fire Protection System (a)(1) Evaluation, Revision 0
- PLP-RPT-12-00026, Maintenance Rule Scoping Document
- Selected System Health Reports, CRHVAC system
- WO# 364202, P-41, Diesel Fire Pump, Fuel in Crankcase Sump, October 8, 2013

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

- 1C23-1, Tagout for SFP-014-E-53A, November 1, 2013
- CR-PLP-2013-04412, Difficulty was Encountered While Attempting to Install the Lift Rig into Rack 6C, October 5, 2013
- CR-PLP-2013-4739, Start of SFP HX Inspection Outage was Delayed to Complete the Required SFP Recirculation Time, November 3, 2013
- CR-PLP-2013-4783, Work Order Task to Un-Pin Hanger Spring Cans Delayed Work Activities Due to it Requiring a Revision that was Identified Right Before the Work was Supposed to Occur, November 5, 2013
- CR-PLP-2013-4788, After Restoration of SFP System Following Maintenance Found MV-SFP137 Open When it was Supposed to Be Closed, November 6, 2013
- CR-PLP-2013-4814, Spent Fuel Pool to E-53A/B East Spring Can is Broken, November 7, 2013
- CR-PLP-2013-4868, All Needed Rigging Points for SFP Heat Exchanger E-53A/B Work Were Not Evaluated Prior to Work in the Field Which Caused a Delayed Start, November 12, 2013

- CR-PLP-2013-5030, Question Was Raised on Whether it Was Appropriate to Store the Fuel Trailer Outside of the Protected Area, November 26, 2013
- CR-PLP-2013-5069, Lack of Qualified Personnel for Night Shift of New Fuel Campaign, December 2, 2013
- CR-PLP-2013-5076, Question on Qualifications/Training for New Fuel Receipt, December 2, 2013
- CR-PLP-2013-5094, South Safety Latch Would Not Release While Attempting to Lower Uperder for Shipping Canisters, December 2, 2013
- CR-PLP-2013-5095, New Fuel Shipping Canister Top Closure Bar was Dropped During Removal, December 2, 2013
- CR-PLP-2013-5134, During New Fuel Moves to the Spent Fuel Pool the L-3 Crane Stopped Working, December 4, 2013
- CR-PLP-2013-5153, Identified Many Issues During Inspection of New Fuel Canister MP-035, December 5, 2013
- EA-SP-03325-HC4-H93, Spent Fuel Pool Hanger Calculation, Revision 0
- EC Reply 47587, Evaluate the Amount of G Force that Can Be Applied to HC-4-12" Line for Cold Spring, Revision 0
- EC Reply 47679, Removal/Rigging of North End Bells of Spent Fuel Pool Heat Exchangers, Revision 0
- EC Reply 47708, Rigging Point Locations on HC-4-12" Line Near Spent Fuel Pool Heat Exchangers E-53A/B North End Bells, Revision 0
- EN-MA-133, Control of Scaffolding, Revision 9
- EN-NF-104, Special Nuclear Materials Program, Revision 6
- EN-NF-200, Special Nuclear Material Control, Revision 12
- EN-OP-116, Infrequently Performed Tests or Evolutions, Revision 9
- EN-RE-324, PWR New Fuel and Core Component Receipt Inspection, Revision 1
- EN-WM-104, Online Risk Assessment, Revision 7
- FHS-M-10, New Fuel Receipt, Revision 31
- 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 35
- GOP-11, Refueling Operations and Fuel Handling, Revision 47
- HPP-2119-101, Procedure for Partial Rerack of Palisades Nuclear Plant Spent Fuel Pool, Revision 3
- MSM-M-65, Pipe Flange Joint Disassembly, Inspection, and Assembly Using Spiral Wound Gaskets, Revision 4
- Palisades Fuel Movement Sheets
- SFPO-3, Removal from Service SFP Cooling System for Maintenance, Revision 14
- SOP-24, Ventilation and Air Conditioning System, Revision 61
- WO #366821, HC4-H93 Visually Inspect for Broken Spring, November 7, 2013
- WO #52263690, E-53A; SFP Heat Exchanger Internal Inspection/Leak Test, October 31, 2013
- WO #52272753, E-53B; SFP Heat Exchanger Internal Inspection/Leak Test, October 31, 2013
- WO #52432712, New Fuel Receipt: Unload and Inspect, December 2, 2013

#### 1R15 Operability Determinations

- CR-PLP-2013-04185, Revision to Past Operability for CR-PLP-2012-05801 Regarding EDG Vent Fans, September 23, 2013
- CR-PLP-2013-04433, Cracking on Anchor Ring for SIRWT T-58, October 11, 2013
- CR-PLP-2013-04775, Criticality Analysis Not Reviewed for Power Uprate, November 5, 2013

- CR-PLP-2013-3005, NRC Identified Pinhole Leak on Critical Service Water Header that Supplies VC-11, Control Room HVAC Refrigeration Condensing Unit, and K-6A, Emergency Diesel Generator 1-1, July 10, 2013
- CR-PLP-2013-4433, Weld Cracking of the Anchor Ring and Gusset Plates for T-58, Safety Injection Refueling Water Tank, October 26, 2013
- DBD 1.07, Auxiliary Building HVAC Systems, Revision 5
- EA-CA025644-01, Evaluation of the Impact of 110% EDG Overload Operating Condition on Ambient Temperature, Revision 1
- EA-EC9600-01, Functionality of Equipment in EDG Room at an Elevated Temperature of 121 Degrees F
- EN-DC-315, Flow Accelerated Corrosion Program, Revision 10
- Engineering Analysis M-001, Evaluation of EDG room HVAC
- EN-OP-104, Operability Determination Process, Revision 7
- NRC Information Notice 2011-003, Non-Conservative Criticality Safety Analyses for Fuel Storage
- NRC Letter to Westinghouse, Non-Conservatism in Axial Burnup Biases for Spent Fuel Rack Criticality Analysis Methodology, July 27, 2001
- Operability Evaluation for CR-PLP-2013-3005, Pinhole Leak on 6 Inch Flanged Tee on the Critical Service Water Header, July 19, 2013
- Operational Decision-Making Issue: Pinhole Leak on 6 Inch Flanged Tee on the Critical Service Water Header, Revision 1
- SEP-SW-PLP-002, Service Water and Fire Protection Inspection Program, Revision 2
- Various Weather Data for South Haven, MI, Summer 2012

#### 1R19 Post-Maintenance Testing

- CR-PLP-2013-4370, Improper Use of N/A During Performance of SPS-E-17, October 7, 2013
- CR-PLP-2013-4374, Work Activity for Replacing Breaker 52-1901, Motor Control Center #25 480V Feeder, was Improperly Classified as Low Integrate Risk, October 7, 2013
- CR-PLP-2013-4694, As-Found Values Not as Expected for EAI-1209, P-8C, Current Indicator Calibration, October 30, 2013
- CR-PLP-2013-4702, Failed to Obtain Proper Motor Start Test for P-8C, October 30, 2013
- CR-PLP-2013-4806, Unable to Read Flow on 1" Pipe for P-54B Heliflow Cooler CCW Return, November 6, 2013
- CR-PLP-2013-4946, Evaluate the Need for PMT Task of Measuring CCW Flow to Seal Cooler for Containment Spray Pumps, November 19, 2013
- CVCO-4, Periodic Test Procedure, Charging Pumps
- Drawing E-618 Revision 5, Junction Box J1052
- Drawing E-81 Sh 3 and 4, Revision 3, Pressure Indicators Instrumentation
- EC 45810, Feedwater UFM Upgrade
- EC Reply 47772, Evaluation of Secondary Side Parameters to Distinguish Plant Response to UFM and Venturi Feedwater Flows
- UFSAR Chapter 6, Section 6.2, Containment Cooling, Revision 27
- FWS-I-18, Auxiliary Feedwater Pump P-8C Trip on Low Suction Water Pressure, Revision 8
- MT-15, UFM Data Collection, Analysis, and Implementation, Revision 13
- PS-0762C Calibration Sheet, Revision 4
- QO-16, Inservice Test Procedure – Containment Spray Pumps, Revision 33
- SOP-2A, Chemical and Volume Control System, Revision 78
- SOP-30, Station Power, Revision 70
- SPS-E-17, Temporary Installation and Removal of Spare Circuit Breakers, Revision 22
- T-223, Component Cooling Water Flow Verification, Revision 18

- WO #52263907, Breaker 52-1901 Overhaul Breaker, October 7, 2013
- WO #52406047, P-54A Heliflow Cooler PM, printed November 7, 2013
- WO #52413904, P-54C Heliflow Cooler PM, printed November 7, 2013
- WO #52418856, P-54B Heliflow Cooler PM, November 5, 2013
- WO #52431502, Test P-8C Low Suction Trip, October 30, 2013
- WO #52439562, P-8C Pump and Motor Oil Change, October 30, 2013
- WO #52499652, CV-0737A, Perform Valve Diagnostic Testing, October 30, 2013
- WO #51621504, M-55A Fluid Drive Unit
- WO #52303990, PS-0762C Replacement

#### 1R22 Surveillance Testing

- Administrative Procedure 4.19, PCS Leak Rate Monitoring Program, Revision 4
- CR-PLP-2013-04506, During QI-4, Light Bulbs Replaced without Communicating with Operations, October 17, 2013
- CR-PLP-2013-4258, PCS Initial Leak Rate Exceed the Nine Consecutive Daily PCS Unidentified Leak Rate Values Greater Than the Baseline Mean Value, September 28, 2013
- CR-PLP-2013-5006, Exceeded Action Level 3 of Admin 4.19 for Total Integrated Leak Rate of Greater Than 50,000 Gallons, November 23, 2013
- DWO-1, Technical Specification Surveillance Procedure: Operator's Daily/Weekly Items Modes 1, 2, 3, and 4, Revision 100
- EN-WM-105, Planning, Revision 12
- M-202 Sh 1A, Chemical and Volume Control System, Revision 57
- MI-43, Technical Specification Surveillance Procedure: Reactor Vessel Level Monitoring System Channel Check, Revision 18
- QI-4, Pressurizer Low Pressure SIS Initiation Functional Check, Revision 2
- QI-46, Technical Specification Surveillance: NI Power Range, Rod Drop Alarm Flux – Delta-T Tests, Revision 7
- SOP-32, 345 KV Switchyard, Revision 34
- SPS-E-28, Safeguards Transformer 1-1 Load Tap Changer Voltage Settings, Revision 5
- WO 52450573, EX-07 Load Tap Changer Setting Verification

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

- EI-6.13; Protective Action Recommendations for Offsite Populations; Revision 22
- Evacuation Time Estimate Study Update
- Site Emergency Plan; Revision 23 and 24
- Site Emergency Plan; Supplement 1, EAL Wall Charts; Revision 2

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

- CR-PLP-2011-02235, FSA, When Reviewing Source Term Concerns - No One Document Captures All of the Areas of Concern, dated May 04, 2011
- CR-PLP-2012-02384, EAD Dose Rate Alarm, dated April 10, 2012
- CR-PLP-2012-02471, Two Shaw Insulators Received Dose Rate Alarms, dated April 12, 2012
- CR-PLP-2012-02687, EAD Dose Rate Alarm, dated April 15, 2012
- CR-PLP-2012-02735, Scaffold Ladder Accessed a Posted HRA, dated April 16, 2012
- CR-PLP-2012-02765, Worker Received Dose Rate Alarm, dated April 17, 2012
- CR-PLP-2012-02850, Individual Received a Dose Rate Alarm while Moving the Refuel Machine Over the Core, dated April 18, 2012

- CR-PLP-2012-02995, Worker Received a Dose Rate Alarm While Touring All Levels of Containment, dated April 21, 2012
- CR-PLP-2012-03229, EAD Dose Rate Alarm, dated April 25, 2012
- CR-PLP-2012-03278, EAD Dose Rate Alarm on Containment 607, dated April 26, 2012
- CR-PLP-2012-03313, EAD Dose Rate Alarm, dated April 27, 2012
- CR-PLP-2012-03601, EAD Dose Rate Alarm, dated May 4, 2012
- CR-PLP-2012-03618, Crane and Rigging, RP and Security Personnel in the Track Alley, dated May 04, 2012
- CR-PLP-2012-03714, Survey of the Waste Gas Surge Tank Identified an Area Beneath the Tank that Needed a HRA Posting, dated May 07, 2012
- EN-RP-101, Access Control for Radiologically Controlled Areas, Revision 08
- EN-RP-105, Radiation Work Permits, Revision 12
- EN-RP-108, Radiation Protection Posting, Revision 13
- EN-RP-143, Source Control, Revision 9
- LO-PLPLO-2010-00174, Radiological Hazard Assessment and Exposure Controls
- LO-PLPLO-2010-00188, Radiological Job Coverage
- LO-PLPLO-2011-00092, Radioactive Material Control
- LO-PLPLO-2011-00140, Post RFO Rad Hazards and Exposure Control Snapshot Assessment
- LO-PLPLO-2012-00050, EAD Dose and Dose Rate Alarms During 1R22
- LO-PLPLO-2012-00116, CA-00004, Alpha Monitoring and DAC-Hr Tracking
- LO-PLPLO-2012-00128, Radiological Hazard Assessment and Exposure Controls
- Personal Contamination Logs, January 2013 through November 19, 2013
- Work Order 52407919 01, Perform Annual Radioactive Source Inventory, February 19, 2013
- Work Order 52340310 01, Perform Annual Radioactive Source Inventory, March 20, 2012
- Work Order 52471434 02, SR-12 Sealed Source Leak Test, August 7, 2013

## 2RS2 Occupational ALARA Planning and Controls

- ALARA Managers Meeting Minutes, Selected dates 2012 and 2013
- ALARA Sub-Committee Meeting Minutes, Selected dates 2012
- EN-RP-110, ALARA Program, Revision 12
- EN-OU-100-01, In-Processing Coordinator Duties and Responsibilities, Revision 01
- EN-PL-169, Commitment to ALARA Principles, Revision 00
- EN-RP-100-01, ALARA Initiative Deferrals, Revision 01
- EN-RP-110-03, Collective Radiation Exposure (CRE) Reduction Guidelines, Revision 02
- EN-RP-110-04, Radiation Protection Risk Assessment Process, Revision 04
- EN-RP-110-05, ALARA Planning and Controls, Revision 02
- EN-RP-110-06, Outage Dose Estimating and Tracking, Revision 01
- LO-PLPLO-2011-00004, 04, Collective Radiation Exposure
- LO-PLPLO-2011-00151, Post RFO ALARA Package Close Out Snapshot Assessment
- Palisades Nuclear Power Plant, Five Year Dose Reduction Plan, 2011 – 2015, Revision 00
- Palisades Nuclear Power Plant, Five Year Exposure Reduction Plan, 2012 – 2016, Draft
- Palisades Nuclear Power Plant, Five Year Exposure Reduction Plan, 2013 – 2017, Revision 00
- Radiation Work Permit 2011-0313, Repair Pressurizer Spray Control Valve CV-0157, dated March 2012
- Radiation Work Permit 2012-0313, Forced Outage T-58 Safety Injection Refueling Water Tank (SIRW) and Catacomb Maintenance, dated December 2013
- Radiation Work Permit 2012-0319, Forced Outage Repair of CRD-24 Housing, Revisions All

- Radiation Work Permit 2012-0421, Insulation Activities in Containment, Revisions 00 and 01
- Radiation Work Permit 2012-0424, Scaffolding Activities in Containment, Revision 00
- Radiation Work Permit 2012-0429, Refuel Project: Incore Instrumentation/Upper Guide Structure Lift Rig Activities, Revisions 00, 01, 02 and 03
- Radiation Work Permit 2012-0430, Refuel Project: Refueling Activities, Revision 00
- Radiation Work Permit 2012-0433, Refuel Project: Reactor Vessel Dis-Assembly, Revisions 00, 01 and 02
- Radiation Work Permit 2012-0434: Refuel Project: Reactor Vessel Re-Assembly, Revisions 00 and 01
- Radiation Work Permit 2012-0454 Steam Generator Primary Side Activities, Revisions 00
- Radiation Work Permit 2012-0455, Steam Generator Secondary Side Activities: Revision 00
- Radiation Work Permit 2012-0471, ISI – Alloy 600 FAC Exams and Associated Weld Preps in Containment, Revisions 00 and 01
- Radiation Work Permit 2012-0473, Crane and Rigging Activities for 1R22 Refueling Outage, Revisions 00 and 01
- Radiation Work Permit 2012-0507, ISI Activities in the Auxiliary Building, Revisions All

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- Palisades RP Instrumentation NRC Inspection Module 71124.05 Snapshot, January 8, 2011
- LO-PLPLO-2012-00127, Radiation Protection Instrumentation Snapshot Self-Assessment, March 1, 2013
- EN-RP-301, Radiation Protection Instrument Control, Revision 6
- EN-RP-302, Operation of Radiation Protection Instrumentation, Revision 2
- EN-RP-303, Source Checking of Radiation Protection Instrumentation, Revision 3
- EN-RP-303-01, Automated Contamination Monitor Performance Testing, Revision 0
- EN-RP-304, Operation of Counting Equipment, Revision 2
- EN-RP-306, Calibration and Operation of the Eberline PM-7, Revision 2
- EN-RP-306, Calibration and Operation of the Eberline PM-7, Attachment 9.2, PM-7 Calibration Data Sheet, Serial Number 186, February 5, 2013
- EN-RP-307, Operation and Calibration of the Eberline Personal Contamination Monitors, Revision 2, and Attachment 9.6, PCM-2 Calibration Data Sheet, PCM-2 ID# 460, September 30, 2013
- EN-RP-308, Operation and Calibration of Gamma Scintillation Tool Monitors, Revision 6, and Attachment 9.6, SAM Calibration Data Sheet, Instrument ID 574, June 6, 2013
- EN-RP-310, Operation and Initial Setup of the Eberline AMS-4 Continuous Air Monitor, Revision 4
- EN-RP-311, Electronic Alarming Dosimeters, Revision 1
- EN-RP-314, Passive Monitor Sensitivity Testing, Revision 0
- HP 9.13, Eberline Model RO-2/2A and RO-20 Portable Ion Chambers, Revision 11, and Attachment 1, Eberline RO-2/2A Certificate of Calibration, RO-2 3265, August 19, 2013
- HP 9.21, Ludlum Model 177 Ratemeter, Revision 9, and Attachment 1, Certificate of Calibration Ludlum Model 177, 12064, June 18, 2013
- HP 9.60, Radeco Model HD-29A Constant Flow Air Sampler, Revision 4, and Attachment 1, Certificate of Calibration Radeco Model HD-29A, 19523, May 19, 2013
- HP 9.66, Calibration of Ludlum Scalers, Revision 7, and Attachment 2, Ludlum M-2929 Certificate of Calibration, 146782, June 25, 2013
- HP 9.77, Eberline Model AMS-4, Revision 16, and Attachment 1, Certificate of Calibration Eberline Model AMS-4, 2165, November 16, 2012
- HP 9.82, MGP Instruments Telepole Wide Range, Revision 4, and HP 9.82, Attachment 1, Certificate of Calibration Telepole Wide Range, 6600-014, January 7, 2013

- HP 9.84, Calibration of The Canberra iSolo Counter, Revision 3, and Attachment 1, Canberra iSolo Counter Certificate of Calibration, 10473546, July 29, 2013
- HP 9.85, Operation and Calibration of MGP AMP 100/200, Revision 3, and Attachment 1, Certificate of Calibration MGP AMP-100, 5006-180, April 1, 2013, and Attachment 1, Certificate of Calibration MGP AMP-200, 7704-032, June 12, 2013
- HP 9.90, Operation and Calibration of the Ludlum Model 4109P, Hand and Foot Monitor, Revision 0, and Attachment 1, Certificate of Calibration Ludlum Model 4109P, February 5, 2013
- HP 9.92, Operation and Calibration of the Protean Model WPC-1050, Low Background Alpha / Beta Counting System, Revision 0
- RI-96G, Palisades Nuclear Plant Technical Specification Surveillance Procedure Basis Document for RI-86G, High Range Containment Monitor Calibration, Revision 5
- Work Order 52325530 01, RI-86G-1 - High Range Containment Monitor Calibration – Source Test, April 12, 2012
- Work Order 52438268 01, RI-86G-2 High Range Containment Monitor Calibration – Online Portion, September 24, 2013
- 2011 Recalibration of the Canberra ABACOS-2000 Fastscan Counting System at the Palisades Nuclear Plant, February 17, 2011
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- 2013 Recalibration of the Canberra ABACOS-2000 Fastscan Counting System at the Palisades Nuclear Plant, February 13, 2013
- System Health Report, PLP Unit 1 RIA – Radiation Monitoring System, Q2-2011
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- Palisades Plant – Site Emergency Plan Related Effluent Monitor Setpoint Changes, June 28, 1985
- Palisades Nuclear Plant Liquid Effluent Monitor Setpoint Calculations, February 19, 1987

## 2RS6 Radioactive Gaseous and Liquid Effluent Treatment

- Apparent Cause Evaluation Report, CR-PLP-2013-2084, Potential Release of Radioactive Water to Lake Michigan, June 20, 2013
- Combined Chemistry, Effluents and Environmental Monitoring Audit, QA-2-6-2013-PLP-01, October 16, 2013
- Combined Chemistry, Effluents and Environmental Monitoring Audit, QA-2-6-2011-PLP-1, July 20, 2011
- CR-PLP-2013-4773, During the Performance of MR-14, RIA-1113 Waste Gas Discharge Monitor, Check Source Failed Low, November 5, 2013
- CR-PLP-2013-4778, During the Performance of MR-14, RIA-0631, Condenser Offgas Monitor, Failed to Respond to Check Source, November 5, 2013
- CR-PLP-2013-4779, During the Performance of MR-14, RIA-1810, EESG Ventilation Monitor, Failed to Respond to Check Source, November 5, 2013
- CR-PLP-2013-4780, During the Performance of MR-14, PO-1817 Damper Associated with RIA-1810, EESG Ventilation Monitor, Failed to Close on High Alarm, November 5, 2013
- EN-RP-113, Response to Contaminated Spills / Leaks, Revision 7
- Final Safety Analysis Report, Chapter 11.2, Liquid Radioactive Waste System, Revision 27
- Form 6.27-1, Containment Purge Calculation, Batch Number CP-021613, February 17, 2013
- Form CH 6.21-1, Release Calculation, Batch Number LRW-051213, April 12, 2013



- Form CH 6.21-3, Release Order, Batch LRW-061412, July 17, 2012
- Form CH 6.23-3, WGDT Release Authorization, Batch Number WG-050813, August 8, 2013
- Offsite Dose Calculation Manual (ODCM), Revision 25
- Offsite Dose Calculation Manual Appendix A, Relocated Technical Specifications per NRC Generic Letter 89-01 (TAC NO 75060), Revision 17
- PNP 2012-032, 2011 Annual Radioactive Effluent Release and Waste Disposal Report, April 26, 2012
- PNP 2013-038, 2012 Radiological Environmental Operating Report, April 23, 2013
- Procedure No CH 6.20, Radioactive Effluent Operating Procedure, Revision 1
- Procedure No. CH 6.40, Annual Radioactive Effluent Release Report, Revision 3
- Procedure No COP-35, Ground Water Monitoring Program, Revision 2
- Root Cause Evaluation Report, CR-PLP-2013-2015, Safety Injection Refueling Water Tank Leak, July 17, 2013
- Self-Assessment, LO-PLPLO-2012-00172, Radioactive Gaseous and Liquid Effluent Treatment, Radiological Effluent Technical Specifications (RETS), October 13, 2013
- Work Order 52325544 01, RT-85C – SFP Ventilation HEPA and Charcoal Testing, January 19, 2012
- Work Order 52395584 01, RT-85C – SFP Ventilation HEPA and Charcoal Testing, February 5, 2013
- Work Order 52486078 01, DWR-10 Stack Effluent Calculations, May 4, 2013
- Work Order 52496780 01, MR-35 Turbine Sump Collection & Calculation, November 6, 2013

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- Air Station Gas Meter Calibration Test Results, Meter Number 03036141, June 11, 2012
- Air Station Gas Meter Calibration Test Results, Meter Number 3038036, July 25, 2012
- Air Station Gas Meter Calibration Test Results, Meter Number 3039506, June 28, 2012
- Air Station Gas Meter Calibration Test Results, Meter Number 6142, July 25, 2012
- Air Station Gas Meter Calibration Test Results, Meter Number PAL-2, June 11, 2012
- Combined Chemistry, Effluents and Environmental Monitoring Audit, QA-2-6-2013-PLP-01, October 16, 2013
- Combined Chemistry, Effluents and Environmental Monitoring Audit, QA-2-6-2011-PLP-1, July 20, 2011
- CR-PLP-2011-2205, Four Potential Findings, May 3, 2011
- CR-PLP-2013-4648, Excessive Canopy Due to Nearby Tree Overgrowth at Air Stations 8SP and 9TP, October 28, 2013
- CR-PLP-2013-4706, There is No Environmental Air Sampling Station Located Near the Site Boundary in the Highest D/Q Wind Direction, October 31, 2013
- CR-PLP-2013-4746, Procedure CH 6.10, Radiological Environmental Monitoring Program, Has Many Issues That Need to be Addressed to Align with Offsite Dose Calculation Manual, November 4, 2013
- Offsite Dose Calculation Manual (ODCM), Revision 25
- Offsite Dose Calculation Manual Appendix A, Relocated Technical Specifications per NRC Generic Letter 89-01 (TAC NO 75060), Revision 17
- Palisades Meteorological Monitoring Semiannual Data Report, January 1, 2013 – June 30, 2013
- Palisades XOQDOQ-82 2003-2007 Meteorological Data 2007 Receptors, March 18, 2008
- Palisades XOQDOQ-82 2003-2012 (10-Year) Meteorological Data Receptors as of 2011, January 21, 2013
- PNP 2012-047, 2011 Radiological Environmental Operating Report, May 14, 2012
- PNP 2013-043, 2012 Radiological Environmental Operating Report, May 6, 2013

- Procedure No 1.14, Meteorological Monitoring Program, Revision 4
- Procedure No CH 6.10, Radiological Environmental Monitoring Program, Revision 5
- Procedure NO CH 6.41, Land Use Census, Revision 4
- Procedure No CH 6.50, Annual Radiological Environmental Operating Report, Revision 1
- Procedure No EM-33, Meteorological Monitoring System, Revision 2
- Work Order 00356724 01, Met Tower Bi-Annual Instrument Calibration and Tree Trimming Review, September 26, 2013
- WT-WTPLP-2013- 00125, Activity 22, Evaluate Acidification of Liquid Composite Samples, November 8, 2013
- WT-WTPLP-2013-00125, Activity 21, Evaluate Need for Additional Wells Near East Radwaste Building to Support Groundwater Monitoring Program, November 4, 2013

#### 40A1 Performance Indicator Verification

- Cooling Water Support Systems Mitigating Systems Performance Indicator Validation
- Emergency AC Power System Mitigating Systems Performance Indicator Validation
- EN-FAP-RP-002; Radiation Protection Performance Indicator Program; Revision 01
- EN-LI-114, Performance Indicator Process, Revision 4
- EN-LI-114; Performance Indicator Process; Revision 06
- NRC Indicator Occupational Exposure Control Effectiveness (OR-1) Technical Bases Documents; October 1, 2012, through December 4, 2013
- NRC Indicator Reactor Coolant System (RCS) Specific Activity (BI-1), January 3, 2013
- NRC Indicator Reactor Coolant System (RCS) Specific Activity (BI01), April 3, 2013
- NRC Indicator Reactor Coolant System (RCS) Specific Activity (BI01), July 3, 2013
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- NRC Indicator RETS I ODCM Radiological Effluent Occurrence (PR01), April 3, 2013
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- Packages, October 2012 through September 2013
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- Palisades Mitigating System Performance Index Basis Document, December 21, 2011
- Selected Narrative Logs, October 1, 2012 through September 3, 2013

#### 40A2 Problem Identification and Resolution

- 102799, Procurement Engineering Evaluation, February 22, 2012
- 105407, Procurement Engineering Evaluation, December 31, 2012
- Apparent Cause Evaluation Report for Inspections Not Effective in Preventing Roof Leaks, December 26, 2012
- CR-2013-3939, Temporary Modification Discrepancies, September 4, 2013
- CR-PLP-2004-04822, OE Westinghouse TB 04-13, August 2, 2004
- CR-PLP-2010-01978, Tubing and Pipe Storage has Contact between Carbon Steel and Stainless Steel, May 13, 2010
- CR-PLP-2010-02504, Small Amount of Brown "Mung" Found Along the Bioshield, June 24, 2010
- CR-PLP-2010-03214, Service Life of SNB-68 and SNB-71 Will Expire, August 4, 2010
- CR-PLP-2010-04437, Negative Observations on Control Room Envelope Habitability, October 4, 2010
- CR-PLP-2011-00684, Potential Finding from the IP71003 NRC Inspection – T-10A, February 11, 2011

- CR-PLP-2011-03839, CRHVAC Chiller Suction Pressure Low Due to Leak, August 4, 2011
- CR-PLP-2011-04221, Discovered What Appears to be Oil Around Bioshield, August 24, 2011
- CR-PLP-2011-05108, K-6A Jacket Water Return Line Has a Small Leak, October 5, 2011
- CR-PLP-2012-02584, Thick Grease Mung Along Bioshield Wall, April 14, 2012
- CR-PLP-2012-05948, Oil in VC-10 Compressor Appears Milky, August 29, 2012
- CR-PLP-2012-06243, Weld Filler Material Issues with Incorrect Traceability Information, September 14, 2012
- CR-PLP-2012-0792, P-50A Oil Level Declining, December 1, 2012
- CR-PLP-2013-00846, PMOS Template EN-Relay-Timing Inconsistent for Replacement of LC Relays, September 13, 2013
- CR-PLP-2013-01380, Evaluation of IN 2013-05 Battery Expected Life, March 28, 2013
- CR-PLP-2013-0219, T-82B Safety Injection Tank Leaking Nitrogen, December 10, 2013
- CR-PLP-2013-02193, Wet Rust Near the Bioshield Wall, May 14, 2013
- CR-PLP-2013-03794, Administrative Error in Procedure RE-83A, August 27, 2013
- CR-PLP-2013-03832, CR 2004-04822 Does Not Contain Full Text of Evaluation, August 28, 2013
- CR-PLP-2013-03916, Several Critical Component Classifications Incorrect, September 4, 2013
- CR-PLP-2013-03948, No CR was Generated for Water Dripping Onto P-66B, September 4, 2013
- CR-PLP-2013-03952, South Patio Coating Degraded and Flaking Off, September 5, 2013
- CR-PLP-2013-04010, MCCBs Service Life Greater Than 20 Years, September 11, 2013
- CR-PLP-2013-04026, Time Delay Relay 62-15/B2524 Not in CEL Database, September 12, 2013
- CR-PLP-2013-04033, ED-204 Capacity Test Inconsistent with IEEE-450, September 12, 2013
- CR-PLP-2013-04041, Adequacy of Past CRs and Resolution of Potential Aging Effects of Bioshield, September 13, 2013
- CR-PLP-2013-04344, Agastat Timing Relay Service Life Not Defined at Palisades, October 3, 2013
- CR-PLP-2013-3383, Found MV-SW135 in Mid-Position While Performing Packing Adjustment Work Order, August 5, 2013
- EN-DC-150, Condition Monitoring of Maintenance Rule Structures, Revision 4
- EN-DC-153, Preventive Maintenance Component Classification, Revision 6
- EN-LI-102, Corrective Action Process, Revision 21
- EN-LI-121, Trending and Performance Review Process, Revision 14
- EN-MP-112, Shelf Life Program, Revision 4
- EN-MP-125, Control of Material, Revision 9
- EN-MP-140, In-Storage Maintenance Process, Revision 0
- EN-WM-105, Planning, Revision 12
- EPS-E-13, 125VDC Battery ED-204 Capacity Test, Revision 1
- EPS-M-14A, Diesel Generator Every Cycle Maintenance, Revision 2
- eSoms Clearance Module, Caution tags, December 16, 2013
- First Interval/Third Period (2007-2009) Structural Monitoring Report, September 15, 2010
- LO-PLPLO-2013-00057, Palisades Pursuing Excellence Plan
- Maintenance DRN Backlog Tracker for 2013
- ODMI Cylinder Heating Steam, October 17, 2013
- ODMI P-55A Fluid Drive, December 3, 2013
- ODMI, HP Turbine Steam Leak, November 20, 2013
- ODMI, Pinhole Leak on MV-SW135, October 31, 2013
- ODMI, Service Water Leak, September 30, 2013

- Operability Evaluation For CR-PLP-2013-4613, Pinhole Leak Discovered on the Inlet Side of the Valve Body of MV-SW135, E-54A ('A' CCW HX) Service Water Outlet Control Valve (CV-0823) Bypass Valve, October 30, 2013
- Operational Decision-Making Issue: Pinhole Leak on MV-SW135, E-54A SW Outlet CV-0823 Bypass, Valve Body, Revision 0
- Operations DRN Backlog Tracker for 2013
- Operations Performance Indicators, November 2013,
- Operations Temporary Modification Log, December 18, 2013
- Operator Work Around/Burden Identification Form, Hydrogen/Nitrogen to VCT, October 11, 2011
- Operator Work Around/Burden Identification Form, Safety Injection/Refueling Water Tank, May 20, 2012
- Operator Work Around/Burden Identification Form, Turbine Speed Control, February 22, 2013
- PLP-RPT-11-00003, MR First Interval/Third Period (2007-2009) Structural Monitoring Report, Revision 0
- Procedure No. 4.12, Operator Work Arouns, Revision 7
- RE-83A, Service Test – Battery NO ED-01, Revision 19
- Sample 6-1-104-10, VC-10 Compressor Lubrication Oil Sample Analysis, April 29, 2013
- SEP-LUB-PLP-001, Lubrication Analysis and Monitoring, Revision 0
- SEP-SW-PLP-002, Service Water and Fire Protection Inspection Program, Revision 2
- September 2013 Maintenance DPRM Report
- September 2013 Operations DPRM Report
- SPS-E-11, 480 Volt Breaker Inspection and Repair, Revision 24
- Various 2013 Nuclear Oversight Functional Performance Assessment Reports
- Various 2013 Nuclear Oversight Status Reports
- Various Completed Operations Procedure Use Observation Checksheets, Fall 2013
- Various Snapshot Self-Assessments Regarding Palisades Phase 2 Recovery Plan
- WO 367929, Blowdown LT-0359 Sensing Line
- WO 52452987, ISM Motor Small, May 15, 2013
- WO 246180-01, 1R21 SNB-71 Service Life Replacement, October 12, 2010
- WO 253702-01, ED-01 Performance Test per FE-5A, April 9, 2012
- WO 52432715-01, VC-10 Leak Inspection, October 12, 2012
- WR 297794, AFW Pumps Suction from FPS, April 8, 2003
- WT-WTPLP-2013-00028, CA in Support of Fleet Response to NRC-RIS-2011-05, May 21, 2013

#### 40A3 Followup of Events and Notices of Enforcement Discretion

- Control Room Filtration Loss of Safety Function Evaluation for Stuck Open MER Door-15, Revision 1
- CR-PLP-2013-158, Timeliness of Immediate Operability Documentation, February 14, 2013
- CR-PLP-2013-3523, Door-15, Equipment Room Missile Shield/Radiation Door, was Unable to Be Closed From 1102 Until 1111, August 13, 2013
- CR-PLP-2013-3534, Door-15 Removed From Service Due to Short Shunt Time and Timeout Alarm No Reset, August 13, 2013
- LER 05000255/2012-002, Technical Specification Shutdown Due to Un-Isolable Secondary Side Drain Valve Leak, Revision 0
- Licensee Event Report (LER) 05000255/2013-003-00, Both Control Room Ventilation Filtration Trains Declared Inoperable, Revision 0
- Lower-Tier Apparent Cause Evaluation Report for Door-15 Equipment Room Missile Shield/Radiation Door Unable to Be Closed, Revision 1

#### 4OA5 Other Activities

- Buried and Underground Piping and Tanks, Revision 0
- CEP-UPT-0100, Underground Piping and Tanks Inspection and Monitoring, Revision 2
- CR-PLP-2009-03429, A Leak was Discovered in the Recirculation Line for Tank T-91, July 6, 2009
- CR-PLP-2011-02357, T-926 Feedwater Purity Fuel Oil Tank Below Min Wall, May 11, 2011
- CR-PLP-2011-04758- CA-2, Evaluate the Remaining Service Life for the Buried HB-5-3" Diesel Fuel Oil Return Pipe, dated January 25, 2012
- CR-PLP-2012-07348, Inadvertent Tritium Release to the Environment, dated November 21, 2012
- CR-PLP-2013-00981, Extent of Condition Buried Piping Inspections Not Performed, March 5, 2013
- CR-PLP-2013-02701, Degraded Coating was on Carbon Steel Line JBD-989-2, June 19, 2013
- CR-PLP-2013-03212: Fuel Oil Line HB-5-2 Minor Scrapes, July 24, 2013
- CR-PLP-2013-05339, Visual Inspection Forms for Line HCD-11-3 Not Found, December 18, 2013
- EC No. 38448 Perform Prioritization of Underground Piping Inspections per CEP- UPT-100, Revision 0
- ECH-EP-10-0001, Radiological SSC Groundwater Initiative Risk-Evaluation Criteria, Revision 0
- ECH-EP-12-00001, Guidelines for Management of Reasonable Assurance of Integrity for Above and Underground SSC Containing Radioactive Material, Revision 0
- EN-DC-343, Underground Piping and Tanks Inspection and Monitoring Program, Revision 9
- EPRI 1011905, Cathodic Protection System Application and Maintenance Guide, December 2005
- LO-PLPLO-2012-00129 – Self-Assessment - Underground Piping and Tank (UPT) Integrity Program, July 8, 2013
- PLP-RPT-13-0048, Palisades Nuclear Power Station Site-Specific Risk-Analysis for
- Procedure CEP-NDE-0505, Ultrasonic Thickness Examination, Revision 4
- Procedure EN-EP-S-002-MULTI, Underground Piping and Tanks General Visual Inspection, Revision 3
- Procedure RT-71J, ESS Pump Suction from Containment Sump Class 2 System Functional Test, Revision 11
- Program Health Reports, Buried Pipe and Tanks Program, October 1, 2012 thru June 30, 2013
- PR-PRHQN-2013-00542, Revise CEP-UPT-0100, December 18, 2013
- Report – Soil Collected June 18, 2013, September 12, 2013
- SEP-UIP-005, Underground Components Inspection Plan, Revision 2
- WO 00212728-01, RT-71j ESS Pump Suction From Containment Sump, October 28, 2010
- WO 052325774-01, RT-71j ESS Pump Suction From Containment Sump, April 17, 2012
- WO 52385917-03, Buried Pipe Excavation/Inspection JBD-989-2 and HCD-911-2, June 18, 2013
- WO 52385918-03, Buried Pipe Excavation/Inspection P-18A/B To T-25A/B, HB-5-2, July 16, 2013
- WO 000209551-01 RO-216 – Service Water Flow Verification, October 22, 2010
- WO 052325510- 01 RO-216 – Service Water Flow Verification, April 19, 2012

- WO 052325559-01 RT-71i – Auxiliary Feedwater System Functional Test, January 23, 2012
- WO 052420026-01, Auxiliary Feedwater System Functional Test, September 24, 2013
- WO 00309661, T-41, Buried Pipe Inspection - JBD-43-3 & HCD-11-3, dated November 15, 2012
- WT - WTPLP-2013-00028 - CA No. 67, Fire Main Break Adjacent to Cooling Tower E-30A, August 14, 2013

## LIST OF ACRONYMS USED

ABP	Auxiliary Building Pipechase
AC	Alternating Current
ADAMS	Agencywide Documents Access Management System
ALARA	As-Low-As-Reasonably-Achievable
ANSI	American National Standards Institute
AOV	Air-Operated Valve
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
CRD	Control Rod Drive
CVCS	Chemical and Volume Control System
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EPIP	Emergency Plan Implementing Procedures
EPRI	Electric Power Research Institute
HRA	High Radiation Area
HVAC	Heating, Ventilation, and Air Conditioning
I&C	Instrument & Control
IEEE	Institute of Electrical and Electronics Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
MCCB	Molded Case Circuit Breaker
MOV	Motor-Operated Valve
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NSIR	Office of Nuclear Security and Incident Response
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Preventative Maintenance
RCA	Radiologically Controlled Area
RCS	Reactor Coolant System
RP	Radiation Protection
SCWE	Safety Conscious Work Environment
SDP	Significance Determination Process
S/G	Steam Generator
SIRWT	Safety Injection Refueling Water Tank
SSC	Structure, System, and Component
TI	Temporary Instruction
TS	Technical Specification
UL	Underwriters Laboratory
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
WO	Work Order

As a result of the Safety Culture Common Language Initiative, the terminology and coding of cross-cutting aspects were revised beginning in calendar year (CY) 2014. New cross-cutting aspects identified in CY 2014 will be coded under the latest revision to Inspection Manual Chapter (IMC) 0310. Cross-cutting aspects identified in the last six months of 2013 using the previous terminology will be converted to the latest revision in accordance with the cross-reference in IMC 0310. The revised cross-cutting aspects will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the CY 2014 mid-cycle assessment review.

In accordance with 10 *Code of Federal Regulations* (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), 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

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