Palisades
1Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Inadequate Insatallation of Steam Generator Nozzle Dams
A finding of very low safety significance and an associated non-citied violation of 10 CFR 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” was self-revealed when licensee personnel failed to have an adequate procedure and work order (WO) to install steam generator nozzle dams. The licensee entered this issue in their Corrective Action Program (CAP) as Condition Report (CR) PLP-2014-00770, Improper Routing of Nozzle Dam Air Supply. As part of their corrective actions, the licensee planned to revise the nozzle dam installation procedure and the WO.

The inspectors determined that this finding was more than minor in accordance with
IMC 0612, Appendix B, "Issue Screening," because the finding was associated with the Procedure Quality attribute of the Initiating Events cornerstone and adversely impacted the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations, and was similar to the more than minor criteria in Example 5.a of IMC 0612, Appendix E, “Examples of Minor Issues.” As it related to this finding, the intended design of the nozzle dam air supply system was not correctly translated into the installation procedure or the work instructions. Further, the nozzle dam air system was not properly tested prior to being placed into service. Since the plant was shutdown in Mode 6, the inspectors assessed the risk significance of the event in accordance with IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process.” A Phase 2 risk evaluation was required that determined the total event risk was 3.6E-8 and was therefore of very low safety significance (Green). This finding had an associated cross-cutting aspect in the Change Management (H.3) component of the Human Performance cross-cutting area. In particular, issues during the previous refueling outage led the steam generator project management team to review the configuration of the nozzle dam air system. Through this review, the licensee identified that changes to the alignment of air to the nozzle dams was required. However, due to turnover within the project management group and inadequate communications and documentation, the licensee failed to appropriately evaluate and implement those changes.

Inspection Report# : 2014002 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Complete Volumetric Examinations for DM Butt Welds in Branch Connections
The inspectors identified a finding of very low safety significance and an associated non-citied violation of 10 CFR 50.55a(g)(6)(ii)(F)(3) when licensee personnel failed to complete required baseline volumetric examinations for nine dissimilar metal (DM) butt welds in the Primary Coolant System (PCS) that were fabricated from Inconel Alloy 82/182 weld metal and were susceptible to primary water stress corrosion cracking (PWSCC). The licensee entered this issue into their CAP as CR PLP 2014 01742, NRC Question on Whether Hot and Cold Leg Branch Connection Welds are In Scope of ASME [American Society of Mechanical Engineers] Code Case (CC) N-770-1. As part of their

corrective actions, the licensee submitted a request for relief to the NRC to allow substitution of a visual and dye penetrant surface examination of these welds as an alternative to volumetric examinations. The NRC granted verbal relief on March 13, 2014, which stated the licensee could implement the proposed alternative to 10 CFR 50.55a(g)(6)(ii)(F), which included a commitment to perform enhanced leakage monitoring during the current operating cycle and perform the required volumetric examinations during the next refueling outage.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the finding was associated with the Equipment Performance (Reliability) attribute of the Initiating Events cornerstone and adversely impacted the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors also determined that if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the failure to complete volumetric examinations on the nine DM butt welded PCS branch connections fabricated with Alloy 82/182 weld metal could have allowed PWSCC susceptible material to remain in service, which could propagate and result in a Loss-of-Coolant-Accident (LOCA). The inspectors performed a Phase I Significance Determination Process screening using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 1, "Initiating Events Screening Questions." The inspectors answered the Phase I SDP "LOCA Initiators" Questions A1 and A2 'No' because undetected cracks, if present, were not yet through-wall and did not challenge the structural integrity of the welds. Therefore, this finding screened as having very low safety significance (Green). This finding had an associated cross cutting aspect in the Evaluation (P.2) component of the Problem Identification and Resolution cross-cutting area because the licensee did not ensure that the resolution of the issue appropriately addressed causes and the extent of condition. Specifically, when determining the applicability of CC N 770 1, the licensee failed to thoroughly evaluate the scope of welds susceptible to PWSCC that required volumetric examination commensurate with the safety significance of this issue.

Inspection Report# : 2014002 *(pdf)*

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Introduction of Foreign Material Into the SW System
A finding of very low safety significance and an associated non-citied violation of Technical Specification (TS) 5.4.1, "Procedures," was identified by the inspectors when licensee personnel failed to follow procedure EN MA 118, "Foreign Material Exclusion (FME)," during work on the safety-related critical service water (SW) system during refueling outage (RFO) 1R23. Specifically, Sections 5.2[1] and 5.2[6] of EN-MA-118 stated that planners and procedure writers should evaluate FME considerations for work activities and include job specific FME controls in work instructions and procedures. Additionally, EN-MA-188 stated that during the planning stage, the planner should designate the FME Zone type, risk level, pathways to FME sensitive equipment, and work practice restrictions, as applicable, in all work packages. However, adequate controls were not established and documented when the decision was made to use an inflatable bladder inside the SW system when work was being performed on the system. As a result, on two separate occasions during RFO 1R23, bladders were inadvertently entrained into the return header of the SW system by the relative vacuum created by system flow. The licensee entered this issue into their CAP as CR PLP 2014 00715, Vacuum was So Great that Bladder was Ripped Off Lanyard and Lost in Piping, and CR PLP 2014 01176, FME Bladder Lost During Work Near CV-0823. As part of their corrective actions, the licensee successfully completed a comprehensive SW system test, which validated acceptable system parameters.

The inspectors determined that this finding was more than minor in accordance with
IMC 0612, Appendix B, "Issue Screening," because if left uncorrected, the performance deficiency would have the potential to lead to a more significant safety concern. In accordance with Checklist 3, "PWR [Pressurized Water Reactor] Cold Shutdown and Refueling Operation RCS [Reactor Coolant System] Open and Refueling Cavity Level <

23' Or RCS Closed and No Inventory in Pressurizer Time to Boiling < 2 hours," following the loss of the first bladder, and Checklist 4, "PWR Refueling Operation: RCS Level > 23' Or PWR Shutdown Operation with Time to Boil > 2 hours And Inventory in the Pressurizer," following the loss of the second bladder of Attachment 1, "Phase 1 Operational Checklists for both PWRs and BWRs [Boiling Water Reactors]," of
IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process," the inspectors determined that mitigation capabilities were not adversely impacted. Additionally, utilizing Table 1, "Losses of Control," of IMC 0609, Appendix G, the inspectors determined there was no loss of control. As a result, the finding screened as having very low safety significance (Green). This finding had an associated cross cutting aspect in the Work Management (H.5) component of the Human Performance cross-cutting area because the licensee did not implement a process of planning, controlling, and executing work activities such that nuclear safety was the overriding priority. In particular, the work process did not include the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities.

Inspection Report# : 2014002 *(pdf)*

Mitigating Systems

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Complete a Transient Combustible Evaluation
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.

Inspection Report# : 2013005 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
The Aging Effects of the Biological Shield Wall Wetted Environment Were Not Being Managed
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.
Inspection Report# : 2013005 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Control of Welding at the F East Nozzle Reinforcement Plate
The inspectors identified a finding of very low safety significance and an associated non-citied violation of 10 CFR 50, Appendix B, Criterion IX, "Control of Special Processes," for the licensee's failure to perform adequate pre weld cleaning and control the welding process in a manner that ensured proper weld fusion of the F East nozzle reinforcement plate weld joint within the safety injection refueling water storage tank (SIRWT). Consequently, this weld failed in service causing leakage from the SIRWT. The licensee subsequently replaced the floor of the SIRWT and included instructions in the floor replacement work order that required pre weld cleaning with acetone or other approved solvents. The licensee entered the issue in their corrective action program (CAP) as CR PLP 2013 03185.

The finding was determined to be more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the inspectors answered "yes" to the More than Minor screening question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern"? Absent NRC identification, the failure to adequately clean aluminum prior to welding and adequately control the repair welding techniques may have been repeated during future repairs to the SIRWT and resulted in lack of fusion type weld defects/cracks returned to service. Unstable cracks could propagate and create failure of the SIRWT pressure boundary resulting in loss of inventory and increase the risk for insufficient core cooling for post Loss-of-Coolant Accident (LOCA) conditions. Therefore, this finding adversely affected the mitigating systems cornerstone attribute of equipment performance (reliability). The inspectors determined this finding was of very low safety significance (Green) based on answering "no" to the questions in Part A of Exhibit 2, "Mitigating Systems Screening Questions," in IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At Power." Specifically, the small amount of leakage from the SIRWT weld leak did not result in loss of a mitigating system function. Therefore, this finding screened as having very low safety significance (Green). This finding has a cross cutting aspect in the area of human performance for the resources component because the licensee did not ensure that personnel, equipment, procedures, and other resources were available and adequate to assure nuclear safety was supported.
Inspection Report# : 2013003 *(pdf)*

Significance: G Jun 30, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Corrective Action Process for Service Water Leaks
A finding of very low safety significance with an associated non-citied violation of 10 CFR 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self revealed for the failure to adhere to the requirements of the site's corrective action process. Specifically, the station failed to complete corrective actions to address cavitation induced erosion of service water system components, which resulted in additional through wall leaks and other adverse conditions in that safety related system. Since 1993, this phenomenon caused several through wall leaks and the failure of a valve, which isolated normal service water flow to a component cooling water heat exchanger. Corrective actions to replace valves susceptible to this type of erosion were not implemented, and actions to utilize more effective non destructive examination (NDE) techniques to assess piping or development of pre emptive repair/replacement strategies were not performed, resulting in further leaks from the service water system. The current corrective action process procedure, EN LI 102, states that corrective actions are determined, implemented, and adequate to resolve conditions. The licensee entered the issue in their corrective action program (CAP) as CR PLP 2013 05813.

The issue was determined to be greater than minor in accordance with IMC 0609 Appendix B, "Issue Screening," issue date September 7, 2012, because it adversely affected the equipment performance attribute of the mitigating systems cornerstone whose objective is to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, a through wall leak can challenge the integrity of the piping and system function. The inspectors concluded the finding was of very low safety significance (Green) utilizing IMC 0609, "Significance Determination Process," issue date June 2, 2011. Specifically, in Attachment 4, issue date June 19, 2012, utilizing Exhibit 2 of Appendix A, all questions in Section A were answered 'no' since the leaks did not result in a loss of safety function. The finding had an associated cross cutting aspect in the area of problem identification and resolution for the operating experience component. Specifically, the licensee did not implement and institutionalize operating experience through changes to station processes and procedures.

Inspection Report# : 2013003 *(pdf)*

Barrier Integrity

Significance: G Mar 31, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedures During Reactor Vessel Head Lift
A finding of very low safety significance and an associated non-citied violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed when licensee personnel failed to follow maintenance procedure RFL R 16, "Reactor Vessel Closure Head Installation." Specifically, during the reactor vessel head lift on March 5, 2014, to support reinstallation onto the vessel flange, workers failed to identify an interference with the reactor head lift structure, causing the head to impact a jack screw on the structure and increasing the total load weight to approximately 283,000 pounds, which was greater than the procedural maximum polar crane load rating of 270,000 pounds. The licensee entered this issue into their CAP as CR-PLP-2014-01903, Reactor Head Flange Contacted Jacking Screw While Raising it Off the Head Stand. As part of their corrective actions, the licensee conducted a Level 1 Human Performance Evaluation, generated a site wide Human Performance error communication, and performed work crew stand downs to discuss crane and rigging expectations.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the finding was associated with the Human Performance attribute of the Barrier Integrity cornerstone and adversely impacted the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Additionally, the inspectors determined that the performance deficiency could reasonably be viewed as a precursor to a significant event and that if left uncorrected the performance deficiency would have the potential to lead to a more significant safety concern. Specifically, the operability of the containment polar crane was required to be evaluated and the reactor vessel head was required to be inspected after the event occurred to verify no significant damage was caused and the maximum design limit of the crane could have been exceeded if the evolution was not stopped when it was, which increased the risk of dropping the head during the lift. The finding was screened in accordance with IMC 0609, Appendix G, “Shutdown Operations Significance Determination Process,” Attachment 1, “Phase 1 Operational Checklists for both PWRs and BWRs.” The finding was determined to be of very low safety significance (Green) based on not requiring a quantitative assessment after reviewing the five shutdown safety functional areas in Checklist 3, “PWR Cold Shutdown and Refueling Operation RCS Open and
Refueling Cavity Level < 23' Or RCS Closed and No Inventory in Pressurizer Time to Boiling <2 hours.” This finding had an associated cross cutting aspect in the Challenge the Unknown (H.11) component of the Human Performance cross-cutting area. Specifically, human performance investigations identified that workers exhibited a lack of rigor when performing interference verifications prior to and during the reactor head lift, and an inadequate “stop when unsure” mentality when assessing the situation before continuing with the head lift. In addition, the workers and supervisors for this task did not understand that the load cell increase exceeded the procedural maximum value and did not inform decision makers outside of the immediate work area to validate it was safe to proceed with the evolution.

Inspection Report# : 2014002 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

Significance: G Mar 31, 2014
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Maintain Radiation Exposure ALARA on CRDM 24 Repairs
A finding of very low safety significance was self revealed when workers received unplanned and unintended occupational radiation dose during a maintenance outage conducted in August 2012 due to deficiencies in the licensee’s Radiological Work Planning and Work Execution Program. Specifically, the licensee failed to properly incorporate As-Low-As-Reasonably-Achievable (ALARA) strategies and insights while planning and executing Control Rod Drive Mechanism (CRDM) 24 housing work. The licensee entered this issue into their CAP as CR-PLP-2014 05812, UT [Ultrasonic Testing] Exams of the Additional CRDM Stalk Housings Has Exceeded the Dose Estimate for the RWP [Radiation Work Permit]. Corrective actions were implemented to address the outage planning and work execution issues.

The inspectors determined that this finding was more than minor in accordance with IMC 0612, Appendix B, “Issue Screening,” because the finding was associated with the Program and Process attribute of the Occupational Radiation

Safety cornerstone and adversely impacted the cornerstone objective of ensuring the adequate protection of worker health and safety from exposure to radiation from radioactive material during routine civilian nuclear reactor operation. Additionally, the finding was similar to the more than minor criteria in Example 6.i of IMC 0612, Appendix E, “Examples of Minor Issues.” The inspectors screened this finding in accordance with IMC 0609, Appendix C, “Occupational Radiation Safety Significance Determination Process.” The inspectors determined that the finding did not involve: (1) a radiological overexposure; (2) a substantial potential for an overexposure; or (3) a compromised ability to assess dose. The inspectors also determined that the finding involved ALARA planning and work controls and that the licensee’s 3 year rolling collective dose average was above 135 person Rem at the time the performance deficiency occurred. However, because the work activity was a single occurrence that involved an actual dose outcome that was within the licensee’s control of less than 25 person Rem, this finding was determined to be of very low safety significance (Green). This finding had an associated cross cutting aspect in the Work Management (H.5) component of Human Performance cross-cutting area because the licensee did not plan work activities that appropriately incorporated radiological safety.

Inspection Report# : 2014002 *(pdf)*

Significance: G Dec 31, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Control of Entry into High Radiation Areas
. 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.

Inspection Report# : 2013005 *(pdf)*

Significance: G Sep 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Monitor in Alpha 3 Area

The inspectors identified a finding of very low safety significance and an associated NCV of Technical Specification (TS) 5.4.1. Specifically, the licensee failed to perform air sampling as required by station procedure EN RP-122 "Alpha Monitoring." The issue was entered in the licensee's Corrective Action Program (CAP) as CR PLP 2013 02054. The licensee's immediate corrective actions included performance management of the radiation protection technician and direct radiation protection supervisor oversight of the work activity.

The finding is more than minor because it was associated with the program and process attribute of the occupational radiation safety cornerstone and affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation. Specifically, not monitoring the worker intake in an Alpha Level 3 area affected the licensee's ability to assess workers internal exposures in a timely manner, and adversely impacted the licensee's ability to monitor, control, and limit radiation exposures (i.e., committed effective dose equivalent or internal dose). In accordance with IMC 0609 Appendix C, "Occupational Radiation Safety Significance Determination Process," the inspectors determined that the finding had very low safety significance (Green) because the finding did not involve: (1) as low as reasonably achievable (ALARA) planning and controls; (2) a radiological overexposure; (3) a substantial potential for an overexposure; and (4) a compromised ability to assess dose. The inspectors determined that the primary cause of this finding was related to the cross cutting aspect of problem identification and resolution in the component of corrective actions, specifically the licensee did not take appropriate corrective actions to address safety issues and adverse trends in Alpha monitoring in a timely manner, commensurate with their safety significance and complexity.
Inspection Report# : 2013004 *(pdf)*

Public Radiation Safety

Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the cover letters to security inspection reports may be viewed.

Miscellaneous

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