

# Palisades

## 2Q/2010 Plant Inspection Findings

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### Initiating Events

**Significance:** **W** Nov 09, 2009

Identified By: NRC

Item Type: VIO Violation

#### **Loss of Spent Fuel Pool Neutron Absorption Capability**

The inspectors identified a finding and associated violation of the Design Feature for fuel storage in Technical Specification 4.3.1 due to loss of neutron absorption capability in the spent fuel pool (SFP) racks. Over the life of the facility, the neutron absorber in the SFP had degraded such that the Region I of the SFP could no longer maintain an effective neutron multiplication factor (Keff) of less than .95 without credit for soluble boron. Specifically, the licensee did not evaluate the effects of spent fuel pool rack swelling or available operating experience to validate the neutron absorber in the SFP continued to meet the assumptions in the criticality analysis. After testing revealed that the SFP no longer met assumptions in the criticality analysis, the licensee implemented compensatory actions to ensure the SFP remained subcritical.

The inspectors concluded the finding was more than minor because, if left uncorrected, it would become a more significant safety concern; in addition, the finding impacted the initiating event cornerstone objective of limiting events that challenge safety functions; for example, preventing criticality in an area not designed for criticality. Because probabilistic risk assessment tools were not suited for this finding, the inspectors evaluated the finding using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria." Based on the degradation that resulted in a significant loss of margin to criticality, NRC management concluded the finding was preliminarily of low to moderate safety significance (White). The inspectors determined that the performance deficiency did not reflect current licensee performance due to its age; therefore, the finding does not include a cross-cutting aspect.

Final WHITE determination issued in report 2010-007 dated January 20, 2010.

Inspection Report# : [2009008](#) (*pdf*)

Inspection Report# : [2010007](#) (*pdf*)

**Significance:** **G** Sep 30, 2009

Identified By: NRC

Item Type: FIN Finding

#### **Inadequate analysis of reheater drain tank T-4B Drain Line Vibration**

A finding of very low safety significance without an associated violation was identified by the inspectors for the licensee's operation of the moisture separator reheater (MSR) system outside of its design such that significant vibration occurred in the drain tank T-4B drain line. The licensee entered this issue into its corrective action program as condition report CR-PLP-2008-4020, evaluated vibration of the drain line vibration, and performed repairs and modifications that eliminated the excessive vibratory motion in the drain line. No violation of NRC requirements occurred.

The finding was determined to be more than minor because the finding was associated with the Initiating Events cornerstone attribute of equipment performance and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The finding was evaluated using IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 4a for the Initiating Events cornerstone. Based on a "No" answer to all the questions in the Initiating Events cornerstone column of Table 4a, the finding was determined to be of very low safety significance (Green) because the finding does not affect mitigation equipment. This finding has a cross-cutting aspect in the area of problem identification and resolution, corrective action program, because the licensee failed to ensure that issues potentially impacting nuclear safety are promptly identified, fully evaluated, and that actions are taken to address safety issues in a timely manner, commensurate with their significance.

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failures of the shutdown cooling flow bypass valve CV-3006**

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of Technical Specifications (TS) 5.4.1, Procedures, for the failure to implement procedures to properly align the positioner feedback arm for the shutdown cooling (SDC) flow control valve CV-3006. As a result, the valve failed shut twice during the most recent refueling outage. Each occurrence caused a temperature excursion in the SDC system and a reduction in SDC flow. The licensee placed a more robust retaining clip on the feedback arm and scheduled work during the next outage to realign the arm. The licensee also entered the issue into their corrective action program as CR PLP-2009-01763.

The issue was more than minor per IMC 0612 Appendix B as it affected the Equipment Performance attribute of the Initiating Events cornerstone, whose objective is to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, the failure of CV-3006 due to the misalignment caused temperature excursions in the SDC system and reduced SDC flow below TS required values. The issue screened as Green in IMC 0609 Appendix G, Shutdown Operations Significance Determination Process, based on the remaining mitigation factors and the determination that the issue did not represent a “loss of control.” The inspectors determined that the finding had an associated cross-cutting aspect in the area of Problem Identification and Resolution under the Corrective Action Program Component because the failure recurred. Specifically, the licensee failed to take appropriate corrective actions to address safety issues.

Inspection Report# : [2009004](#) (pdf)

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## **Mitigating Systems**

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Fire Barrier**

The inspectors identified a finding of very low safety significance (Green) and an associated NCV of License Section 2.C(3), Fire Protection Program for failing to maintain in effect all provisions of the Fire Protection Program. Specifically, the fire protection plan requires 3-hour fire barriers, unless there is adequate justification that a fire barrier, which is less than 3 hours is acceptable. The licensee credited a 2-hour fire barrier in lieu of a 3-hour barrier based on less than two hours of combustible material in the cable spreading room. In 2006, the licensee determined the cable spreading room contained in excess of two hours worth of combustible material. As an immediate action, the licensee implemented compensatory actions and performed fire tours in the area.

The issue is more than minor because it affects the Protection Against External Events attribute of the Mitigating Systems Cornerstone in that it affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically, the licensee had an invalid basis for the adequacy of a firewall protecting safety related equipment. The finding screened as Green because the fire barrier retained at least a two hour rating and the seismic issues did not impact both trains. The finding does not include an associated cross cutting aspect due to the issue dating back greater than three years and not reflective of current performance. (1R05)  
Inspection Report# : [2010002](#) (pdf)

**Significance:**  Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Improper Construction of Scaffolding**

A finding of very low safety significance (Green) and associated NCV of Palisades Technical Specification (TS) 5.4.1, Procedures, was identified by the inspectors for failing to adequately implement a procedure to construct a scaffold near the 1 2 emergency diesel generator (EDG). Specifically, a fire sprinkler was impaired without the proper fire protection evaluation; and required seismic evaluations were not performed despite being in close proximity to safety related equipment. The issue was entered into the licensee's corrective action program and the scaffold was modified.

The issue is more than minor because it affects the Protection Against External Events attribute of the Mitigating Systems Cornerstone in that it affects the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically a fire protection feature (sprinkler) in a safety related area was affected without compensatory measures. Additionally, the scaffold was in close proximity to safety related equipment, and the equipment could have been impacted by a seismic event. The finding screened as Green based on remaining sprinkler capability and the fact that only one EDG could be affected by the scaffold during a seismic event. The finding had an associated cross cutting aspect in the area of Human Performance (Planning) in that the licensee failed to appropriately plan work activities by incorporating the need for compensatory actions (H.3(a)).

(1R05)

Inspection Report# : [2010002](#) (*pdf*)

**Significance:**  Dec 16, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Agastat Time Delay Relays Design, Testing and Configuration Control Issues**

A finding of very low safety-significance (Green) and associated Non-Cited Violation of 10 CFR Part 50, Appendix B, Criterion III "Design Control," was identified by the inspectors for the licensee's failure to translate the design bases into design drawings, procedures and appropriate test instructions. Specifically, the design basis requirements for Agastat Time Delay Relays (TDR) settings, as well as vendor tolerances, were not accurately reflected in the design drawings, procedures and test instructions for numerous TDR calibrations. This issue was entered into the licensee's corrective action program.

The inspectors determined that the finding was more than minor because it was associated with the Mitigating System Cornerstone attribute of "Design Control," and affected the cornerstone objective of ensuring the capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, failure to ensure that safety-related TDRs would operate, within the design specified setpoints and allowed tolerances, could lead to the inability of safety-related systems and components to respond to design basis events (e.g., during load sequencing onto the EDG). The finding screened as being of very low safety-significance because the finding was a design or qualification deficiency confirmed not to result in loss of operability or functionality. Specifically, the licensee's subsequent evaluation of the TDRs tolerances showed that available margin remained for satisfactory completion of the required safety function.

This finding has an associated cross-cutting aspect in the area of problem identification and resolution because the licensee did not incorporate operating experience (OE) information, including internally generated lessons learned, to support plant safety. Specifically, even though the licensee was aware of the potential inadequacies of the Agastat TDR setpoints through internal OE, the licensee failed to adequately respond to the OE by implementing appropriate changes to station processes, procedures, equipment, and training program.

Inspection Report# : [2009006](#) (*pdf*)

**Significance:**  Dec 16, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Translate the Design Basis for the CV-11 Control Room HVAC Chiller Into Specifications and Drawings**

A finding of very low safety-significance (Green) and associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified by the inspectors for the licensee's failure to translate and incorporate design basis criteria that ensured the functionality of TDRs for the CR HVAC chillers into design drawings, procedures and work

instructions for implementation. Specifically, even though the licensee reduced the replacement interval frequency for the chiller mounted TDRs due to high vibration levels to ensure functionality, and then initiated Work Orders (WOs) to perform this replacement, one WO was closed without replacing the TDRs as intended, and the second WO was not approved for implementation. This issue was entered into the licensee's corrective action program.

The inspectors determined that the finding was more than minor because this failure to establish measures to translate and incorporate design basis criteria to ensure the functionality of TDRs for the CR HVAC chillers could lead to the inability of the chillers to respond to design basis events. Specifically, the finding screened as of very low safety-significance (Green) because the finding did not represent loss of system safety function.

This finding has an associated cross-cutting aspect in the area of problem identification and resolution because the licensee failed to thoroughly evaluate problems such as that the resolution addresses causes and extent of condition, as necessary. This includes properly evaluating for operability conditions adverse to quality.

Inspection Report# : [2009006](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Gas Void in High Pressure Safety Injection Suction Line**

The inspectors identified an NCV of TS 5.4.1 for failure to implement and maintain procedural guidance for filling the High Pressure Safety Injection (HPSI) lines. Specifically, the licensee used procedure ESSO-01 to fill the Emergency Core Cooling System (ECCS) piping following a system outage ending in September 2007. The procedure failed to ensure that the sub-cooling line to the HPSI suction was filled and the remaining void created reasonable doubt regarding the operability of the ECCS system. The licensee located the void on July 1, 2009, as part of actions related to Generic Letter 2008, declared the train inoperable and successfully eliminated the void on July 2, 2009.

Additionally, the issue was placed in the corrective action program as CR PLP-2009-3377

The inspectors determined the issue was more than minor per IMC 0612 Appendix B because it affected the Configuration Control attribute of the Mitigating Systems cornerstone in that it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically the void impacted the reliability of a high pressure safety injection pump. The finding screened as Green, or very low safety significance, in IMC 0609 Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," using the Phase 1 worksheets because the finding did not result in loss of operability. This finding has a cross-cutting aspect in the area of problem identification and resolution, operating experience, because the licensee failed to implement operating experience through changes to station processes.

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Reduction in containment spray header level during maintenance**

A finding of very low safety significance (Green) and associated NCV of TS 5.4.1, Procedures, was self-revealed when operators incorrectly implemented a procedure that connected a temporary pump to a containment spray header while attempting to fill the header. Specifically, the suction and discharge connections were swapped so that when the pump was turned on, water was pumped out of the header instead of into the header, reducing level below the TS required minimum value. The licensee corrected the connections and refilled the header to an acceptable level.

Additionally, the issue was placed in the corrective action program as CR-PLP-2009-04080.

The inspectors determined the issue was more than minor per IMC 0612 Appendix B because it affected the Configuration Control attribute of the Mitigating Systems cornerstone in that it affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically, the improper connection of the pump lowered header level below the TS allowed value which resulted in an inadvertent TS action statement entry. The finding screened as Green, or very low safety significance, in IMC 0609 Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," using the Phase 1 worksheets based on answering 'no' to all questions under the Mitigating Systems cornerstone in Table 4a. The finding had an associated cross-cutting aspect in the Work Practices component of the Human Performance cross-cutting area;

namely, the licensee failed to appropriately communicate and use proper human error prevention techniques.

Inspection Report# : [2009004](#) (pdf)

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## Barrier Integrity

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## Emergency Preparedness

**Significance:**  Mar 05, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Inadequate Evaluation of Interface with State and Local Governments**

The inspectors identified a finding of very low safety significance and associated NCV of 10 CFR 50.54(t), "Conditions of licenses," for the failure to complete an independent review of all program elements of the emergency preparedness program. The independent assessment did not evaluate and document the adequacy of the interfaces with State and local governments at an interval not to exceed 12 months for all groups. Specifically, Quality Assurance's assessment failed to evaluate the adequacy of interface with one of the counties in 2008, and the interface with the State and two counties was not evaluated in 2009. The licensee entered the issue in their corrective action program as CR-PLP-2009-04915.

The deficiency did not meet the criteria for traditional enforcement, therefore, was screened using the Emergency Preparedness (EP) SDP. The finding was determined to be more than minor because the finding adversely affected the EP cornerstone objective to ensure the licensee is capable of implementing adequate measures to protect the health and safety of the public in a radiological emergency. The failure to conduct the audit to evaluate the effectiveness of the EP program had the attribute associated with Offsite EP, specifically, the evaluation of the working relationship between the offsite and onsite emergency response organizations and programs. The inspector evaluated the finding using with IMC 0609, Appendix B, Sheet I, Failure to Comply flowchart. The audit program was noncompliant with a regulatory requirement not involving an EP planning standard or a risk significant planning standard; therefore, the finding was determined to be of very low safety significance (Green).

The finding has a cross-cutting component in the Problem Identification and Resolution area with the component of Self and Independent Assessments. The licensee did not conduct the self-assessments in sufficient depth to evaluate the interfaces for all offsite governments. (P.3(a)) (Section 1EP5)

Inspection Report# : [2010502](#) (pdf)

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## Occupational Radiation Safety

**Significance:**  Sep 30, 2009

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### **Entering a High Radiation Area without an adequate awareness of radiological conditions**

A self-revealed finding of very low safety-significance and an associated NCV of TS 5.7 were identified for workers entering a high radiation area (HRA) without an adequate awareness of radiological conditions and while working under a Radiation Work Permit (RWP) that did not allow entry into a high radiation area. The electronic dosimetry worn by the workers alarmed when they entered an area of elevated dose rates. Corrective actions taken by the licensee included denial of their access into the radiologically controlled area. The issue was entered in the licensee's corrective action program as CR-PLP-2009-01884.

The issue was more than minor because it is similar to Example 6.h in IMC 0612 Appendix E “Examples of Minor Issues” for an issue that is more than minor. The inspectors determined that the violation affected the Occupational Radiation Safety Cornerstone. The inspectors determined that this finding did not involve: (1) an ALARA finding; (2) an overexposure; (3) a substantial potential for overexposure; or (4) an impaired ability to assess doses. Consequently, the inspectors concluded that the SDP assessment for this finding was of very low safety-significance (Green). Additionally, this finding has a cross-cutting aspect in the area of human performance, work practices component, because the supervisor that performed the pre-job brief for the job failed to provide clear guidance on the requirements for entry into a high radiation area.

Inspection Report# : [2009004](#) (pdf)

**Significance:**  Sep 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to perform work-in-progress reviews**

The inspectors identified a finding of very low safety significance and associated NCV of TS 5.4.1 for failure to implement procedures required to conduct timely reviews of job progress and implement actions necessary to reduce workers’ exposure. Specifically, the inspectors identified that work in progress reviews for jobs greater than 5 rem were not completed and therefore the licensee did not implement additional actions necessary to reduce workers’ exposure. The issue was entered in the licensee’s corrective action program as CR-PLP-2009-004074.

The finding is more than minor because it impacted 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, in that the licensee neither fully evaluated the cause for additional exposure nor prescribed exposure mitigation actions. Therefore, additional exposure was received by the plant staff. The inspectors determined that this finding did not involve: (1) an ALARA finding; (2) an overexposure; (3) a substantial potential for overexposure; or (4) an impaired ability to assess doses. Consequently, the inspectors concluded that the SDP assessment for this finding was of very low safety significance (Green). Additionally, this finding has a crosscutting aspect in the area of human performance, work practices component, because the ALARA supervisor did not provide adequate oversight of the ALARA work activities.

Inspection Report# : [2009004](#) (pdf)

**Significance:** SL-IV Sep 04, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

### **Violation or Title 10 CFR 50.9 Completeness and Accuracy of Information regarding in Support of 10 CFR 20.2106 “Records of Individual Monitoring Results.”**

The inspectors identified a Severity Level IV NCV of 10 CFR 50.9, “Completeness and Accuracy of Information.” The inspectors identified that the licensee, on April 17, 2008, submitted to the NRC inadequate NRC Form 5s, “Occupational Dose Record for a Monitoring Period” for three individuals that were involved in the demobilization of spent fuel reconstitution equipment in October 2007. The NRC Form 5s were not complete and accurate in all material respects. Specifically, the NRC Form 5s did not include pertinent information relative to the radiological implications to these individuals regarding their personal involvement in the demobilization of spent fuel reconstitution equipment under circumstances when the licensee’s ability to assess the worker’s dose was compromised. In particular, the NRC Form 5s failed to document the uncertainties associated with the workers’ radiation doses, as was necessary in this instance consistent with the instructions on the Form 5. When the NRC questioned the licensee on the accuracy of these NRC Form 5 submittals, the licensee submitted revised NRC Form 5s.

The violation was more than minor because the missing information was material to the NRC. Specifically, this information is used by the NRC in its evaluation of the risk of radiation exposure associated with the licensed activity and in exercising its statutory authority to monitor and regulate the safety and health practices of its licensees. This Severity Level IV violation is of very low safety-significance because if the information had been complete and accurate when reviewed by the NRC, it likely would not have resulted in a reconsideration of a regulatory position or substantial further inquiry, such as an additional inspection or a formal request for information. Because this violation was of very low safety-significance, neither was it repetitive nor willful, and was entered into the licensee’s corrective

action program [Condition Report (CR)-PLP-2009-04213], the violation is being treated as an NCV, consistent with the NRC Enforcement Policy. No cross-cutting aspects were identified with this violation.

Inspection Report# : [2009007](#) (*pdf*)

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## Public Radiation Safety

**Significance:** G Mar 31, 2010

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Adequately manage Changes to the ODCM**

The inspectors identified a finding of very low-safety-significance and an associated NCV for the failure to implement TS requirement 5.5.1, Offsite Dose Calculation Manual (ODCM). Specifically, the inspectors determined that the evaluation written to support the 2004 change to eliminate drinking water well sampling from the ODCM was not correct. This evaluation failed to address community wells that provide drinking water to homes immediately adjacent to plant property to the south. These community wells are between the plant site and the Covert Township Park. These locations were drinking water wells that were historically sampled until the 2004 ODCM change. Corrective actions were being developed in the corrective action program (condition report (CR) PLP 2010 01013) and senior plant management expressed the understanding that sampling was important and the condition would be corrected.

The finding was more than minor because it affected the Public Radiation Safety Cornerstone objective to ensure adequate protection of public health and safety from exposure to radioactive materials released into the public domain, in that these conditions could result in reduced capability to detect potential impacts associated with this pathway. The finding was assessed using IMC 0609, Attachment D for the Public Radiation Safety SDP and determined to be of very low safety significance because it involved the environmental monitoring program. The finding was not associated with a cross cutting aspect because the flawed evaluation occurred in 2004 and appeared to be a legacy issue which did not represent current licensee performance. (Section 40A5)

Inspection Report# : [2010002](#) (*pdf*)

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

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