Diablo Canyon 1
2Q/2014 Plant Inspection Findings

Initiating Events

Significance: G Mar 21, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inappropriate Fatigue Rule Waivers
The inspectors identified a Green non-cited violation of 10 CFR 26.207(a) for Pacific Gas and Electric's (PG&E) inappropriate granting of waivers necessary to mitigate or prevent conditions adverse to safety, and to the extent practicable, rely on the granting of waivers only to address circumstances that could not have been reasonably controlled. Specifically, PG&E supervisors granted multiple fatigue waivers to covered workers during the DCPP Unit 1 February 2014, refueling outage that were determined to be inappropriate based on plant conditions. Immediate corrective action was to enter this condition into their corrective action program as Notification 50615724 for further evaluation.
The inspectors determined that PG&E's inappropriate granting of waivers in accordance with regulatory requirements was a performance deficiency. This performance deficiency is more than minor and is therefore a finding because it was associated with the human performance attribute of the Initiating Events cornerstone. This performance deficiency 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. Specifically, the resulting increased likelihood of human error could adversely affect the station's defense-in-depth. Using Inspection Manual Chapter (IMC) 0609, Attachment 04, "Initial Characterization of Findings," and Appendix G, Attachment 04, "PWR Refueling Operation: RCS level > 23 feet," the finding is screened as very low safety significance (Green) based on no known effects to the plant safety caused by possible worker fatigue. In addition, because there was no fuel in the reactor core at the time of the work activities, none of the checklist guidelines were impacted.
This finding has a human performance cross-cutting aspect associated with resources; in that leaders did not ensure that personnel, equipment, procedures, and other resources were available and adequate to support nuclear safety [H.1].
Inspection Report# : 2014002 *(pdf)*

Significance: G Oct 14, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Auxiliary Feedwater Actuation Due to a Main Feedwater Pump Trip
The inspectors reviewed a Green self-revealing finding due to an inadequate procedure for calibrating non-vital bus relays. This caused an initiating event due to a main feed pump trip and unplanned downpower transient to 50 percent power on Unit 1.

The licensee's failure to maintain an adequate maintenance procedure for calibrating non-vital bus relays is a performance deficiency. Specifically, the procedure was inadequate in that it contained an optional step to position a cut-out switch so that the relay would not de-energize the bus if actuated during maintenance activities. The performance deficiency was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. In particular, when the bus de-energized and tripped the running control oil pump, and the accumulator was unable to maintain system pressure while the back-up control oil pump

reached operating pressure, the main feed pump tripped which resulted in a reactor power transient greater than 20 percent. Using Inspection Manual Chapter 0609, Attachment 04, “Initial Characterization of Findings,” and Appendix A, Exhibit 1, “Initiating Events Screening Questions,” this finding was determined to be of very low safety significance (Green) because, although it resulted in a reactor transient, it did not result in the loss of mitigating equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding was entered into the corrective action program as Notification 50588799.

This finding had a cross-cutting aspect in the area of human performance, associated with the work control component, because the licensee did not adequately plan and coordinate maintenance activities. Specifically, the licensee did not appropriately assess the job site conditions that could impact human performance and human-system interface by failing to incorporate operating experience into procedural guidance [H.3(a)].
Inspection Report# : 2013005 *(pdf)*

Mitigating Systems

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure Associated with Seismic Induced Structural Interactions
The inspectors identified a Green non-cited violation of 10 CFR, Part 50, Appendix B, Criterion V, “Instructions, Procedures, and Drawings,” for the failure to properly identify and evaluate system interactions as required by the licensee’s Seismically-Induced Systems Interaction Program (SISIP) Procedure AD4.ID3, “SISIP Housekeeping Activities.” Specifically, the inspectors identified multiple instances of components or sources capable of producing a potential threat related to seismic induced structural interactions of safety related equipment or components.

The failure of plant personnel to follow procedure requirements to properly identify and evaluate for impact equipment near sensitive or safety related equipment was a performance deficiency. This performance deficiency was more than minor and is therefore a finding because it was associated with the protection against external factors (seismic) attribute of the Mitigating Systems cornerstone objective and adversely affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, because Diablo Canyon staff did not fix or perform evaluations of seismic induced system interactions on safety-related or accident mitigating systems, this had the potential to challenge the availability, reliability, and capability of various systems required to function following or during earthquakes to prevent undesirable consequence.

Using Inspection Manual Chapter 0609, Attachment 04, “Initial Characterization of Findings,” and Appendix A, Exhibit 2, “Mitigating System Screening Questions,” the finding was determined to be of very low safety significance (Green) because the finding was associated with seismic design or qualification of systems, structures, and components but did not result in the loss of a system operability or functionality.

The inspectors determined this finding has a problem identification and resolution cross cutting aspect associated with the Identification attribute; specifically in that PG&E personnel failed to implement the SISIP with a low enough threshold for identifying and assessing seismic induced system interactions in accordance with the SISI program and procedures [P.1].
Inspection Report# : 2014003 *(pdf)*

Significance: G Jun 30, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Design Control with Respect to Seismic Induced System Interaction of Safety Related Components
The inspectors identified a Green non-cited violation of 10 CFR, Part 50, Appendix B, Criterion III, "Design Control," involving the licensee's failure to verify the adequacy of their design with respect to seismic induced system interaction of safety related components. Specifically, PG&E did not verify the adequacy of interference limitations on structural components associated with the safety related component cooling water (CCW) heat exchanger.

The licensee's failure to verify the adequacy of their design with respect to seismic induced system interaction of safety related components was a performance deficiency. This performance deficiency is more than minor, and is therefore a finding because the finding was associated with the Mitigating Systems Cornerstone attribute of design control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of the component cooling water system to respond to initiating events to prevent undesirable consequences. Specifically, the original plant design configuration associated with seismic interference clearances for Unit 1 component cooling water heat exchanger components was not adequately controlled to ensure design piping stresses would not be challenged. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating System Screening Questions," the finding was determined to be of very low safety significance (Green) because the finding was associated with seismic design or qualification of systems, structures, and components but did not result in the loss of a system operability or functionality. The inspectors determined this finding has a problem identification and resolution cross cutting aspect associated with the Identification attribute; specifically in that PG&E personnel failed to implement the SISIP with a low enough threshold for identifying and assessing seismic induce system interactions in accordance to the SISI program and procedures.

This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.
Inspection Report# : 2014003 *(pdf)*

Significance: G Mar 21, 2014
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Follow Procedure Results in Inadequate Operability Assessment
The inspectors identified a Green non-cited violation of 10 CFR, Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the licensee's failure to follow the operability assessment procedure in considering the tornado atmospheric effects and tornado missile impactive force effects on the emergency diesel generator radiator ventilation plenum and engine exhaust pipes. The licensee took immediate corrective actions to remove potential tornado missiles that may affect the operability of the emergency diesel generators.
The licensee's failure to account for tornado atmospheric pressure change effects and tornado-generated missile impactive loads is a performance deficiency. Specifically, the operability assessment did not account for the pressure change or impactive loads as described by the Standard Review Plan methodology. This performance deficiency was more than minor because it is associated with the protection against external factors attribute of the Mitigating Systems cornerstone objective and adversely affected the objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, "The Significance Determination Process (SDP) For Findings At-Power", dated July 1, 2012, the inspectors determined that the finding could not be screened as Green, or very low safety significance. As a result, a detailed risk evaluation was performed by a senior risk analyst. The detailed risk analysis determined that the calculated tornado missile strike frequency at Diablo Canyon is lower than the 1 x 10-6 threshold in the significance determination process, and therefore, the

finding was determined to be of very low safety significance (Green).
This finding has a problem identification and resolution cross-cutting aspect associated with evaluation; specifically in that the licensee did not thoroughly evaluate the problem to ensure that resolutions addressed the cause(s) and extent of conditions, commensurate with their safety significance [P.2].
Inspection Report# : 2014002 *(pdf)*

Significance: G Sep 20, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Use Procedures to Perform Corrective Maintenance on an Emergency Diesel Generator.
The inspectors reviewed a self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," after the licensee performed corrective maintenance on a diesel fuel oil system leak without appropriate documentation or procedures. This resulted in the fuel oil header not being properly primed or vented, which rendered an emergency diesel generator inoperable. The licensee entered the condition into the corrective action program as Notification 50561918.

The failure to use procedures to perform corrective maintenance on an emergency diesel generator was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Mitigating Systems Cornerstone and it adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," this finding was determined to be of very low safety significance (Green) because, it was not a design or qualification deficiency, was not a loss of the system or function, and did not represent an actual loss of function of a single train for greater than its technical specification allowed outage time. The finding had a cross-cutting aspect in the area of human performance associated with the work practices component, because licensee staff did not communicate human error prevention techniques, such as proper documentation of activities, and did not use this technique commensurate with the risk of the assigned task, such that work activities are performed safely. Specifically, the system engineer recognized the possiblity of introducing air into the system, but assumed that operators would have filled and vented the system using the appropriate procedure, while operators did not use a procedure to tighten the leaking fitting and refill the priming tank [H.4(a)].
Inspection Report# : 2013004 *(pdf)*

Significance: G Jul 11, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate the Effects on the Emergency Diesel Generator Load Capability for Maximum Combustion Air Temperature Conditions
The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," which states, in part, "measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures and instructions." Specifically, as of July 11, 2013, the licensee failed to evaluate the impact of the site combustion air temperature and the vendor specified diesel generator rating for combustion air temperature in the emergency diesel generator loading analysis. In addition, the licensee failed to evaluate the available combustion air temperature for the maximum site outside air conditions could have affected the capability of safety-related equipment to respond to initiating events. This finding was entered into the corrective action program as Notifications DN-50573049 and DN-50570764.

The team determined that the failure to properly evaluate the vendor stated effects of combustion air temperature on the diesel generator capability and to determine and evaluate the expected maximum value for diesel generator

combustion air temperature, based on site-specific conditions, was a performance deficiency. The finding was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, using actual data, the licensee found that derating of 1.5 percent was necessary under limiting air temperature conditions. Using Inspection Manual Chapter 0609, Significance Determination Process, Appendix A, the finding was determined to have very low safety significance (Green) because the finding was a design or qualification deficiency that did not result in the loss of operability or functionality, did not result in a loss of safety function, and did not screen as potentially risk significant due to external events. This finding had a problem identification and resolution cross-cutting aspect associated with thoroughly evaluating problems such that the resolution addresses cause and extent of condition [P.1(c)].
Inspection Report# : 2013007 *(pdf)*

Significance: G Jul 11, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Evaluate the Auxiliary Feedwater Pump Motor Capability for the Effects of Pump Maximum Breakhorsepower Conditions
The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” which states, in part, “measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures and instructions.” Specifically, as of July 11, 2013, the licensee failed to evaluate the effects of pump load on the auxiliary feedwater pump motor for the design basis maximum flow conditions that could occur during a postulated steam line break coincident with maximum diesel generator frequency which could have affected the capability of safety-related equipment to respond to initiating events. This finding was entered into the corrective action program as Notification DN-50572850.

The team determined that the failure to evaluate the capability of auxiliary feedwater pump motors for the design basis accident maximum pump brake horsepower condition coincident with the maximum diesel generator frequency, which could result in a motor overload, was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the Mitigating Systems Cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, there was no analysis or test that demonstrated the motors would be capable of operating for the required mission time during a high energy line break, which resulted in maximum pump brake horsepower conditions that could occur coincident with maximum diesel engine frequency. Using Inspection Manual Chapter 0609, Significance Determination Process, Appendix A, the finding was determined to have very low safety significance (Green) because the finding was a design or qualification deficiency that did not result in the loss of operability or functionality, did not result in a loss of safety function, and did not screen as potentially risk significant due to external events. This finding did not have a cross-cutting aspect because the most significant contributor did not reflect current licensee performance.
Inspection Report# : 2013007 *(pdf)*

Significance: G Jul 11, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Inadequate Procedures for Establishing Temporary Ventilation
The team identified a Green non-cited violation associated with Technical Specification 5.4.1(a), “Procedures,” which requires that written procedures be established, implemented, and maintained covering the applicable procedures in Regulatory Guide 1.33, Revision 2, Appendix A. Regulatory Guide 1.33, “Quality Assurance Program,” Appendix A, Section 5, requires procedures for Abnormal, Offnormal, or Alarm Conditions. Specifically, as of July 11, 2013, Procedure CP M-10, “Fire Protection of Safe Shutdown Equipment,” Revision 27, Attachment 7.8, “Temporary

Ventilation for the Control Room, Inverter/Charger Rooms, and 480V Vital Switchgear Rooms and Charging Pump 1-3 Room," Section 4a, requires the use of two 24-inch diameter fans, which, if connected as directed, would not perform the function as prescribed by the procedure as the fans require more current than can be supplied from either the equipment room receptacles or from the alternate power source (the temporary generator and distribution panel). This finding was entered into the corrective action program as Notifications DN-50570838 and DN-50572295.

The team determined that the failure to provide an adequate procedure for establishing temporary ventilation was a performance deficiency. The finding was more than minor because it affected the equipment performance attribute associated with the Mitigating Systems Cornerstone as related to the availability, reliability, and capability of the 480V Vital Switchgear Rooms. The team reviewed this finding using Inspection Manual Chapter 0609 Attachment 0609.04; 0609 Appendix A, Exhibit 2; and Inspection Manual 0609 Appendix A, Exhibit 4, because it affected the External Event Mitigation Systems (Seismic/Fire/Flood/Severe Weather Protection Degraded) while the plant was at power and involved the loss or degradation of equipment specifically designed to mitigate an external initiating event such as a fire. Inspection Manual Chapter 0609 Appendix A, Exhibit 4, led to a Detailed Risk Evaluation because the finding would degrade two or more trains of a multi-train system or function and would degrade one or more trains of a system that supports a risk significant system or function. The bounding change to the core damage frequency was 4E-7/year (Green). The finding was not a significant contributor to the large early release frequency. The most dominant sequences included fires in Fire Area 34, failure of the 480 Vac switchgear cooling, and the failure of the manual action to restore cooling. The low frequency of applicable fires combined with the relatively low failure probability for the alternate cooling helped to reduce the risk. This finding had a human performance cross-cutting aspect associated with resources, because the licensee did not have adequate procedures and available facilities and equipment, including physical improvements, simulator fidelity and emergency facilities and equipment [H.2(d)].. Inspection Report# : 2013007 *(pdf)*

Barrier Integrity

Significance: G Dec 31, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Loss of Control Room Ventilation System due to Inadequate Design Control
The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after the licensee performed a design change to the control room ventilation system (CRVS) that resulted in none of the four CRVS pressurization fans being able to continuously operate if they started in response to a Phase A containment isolation or control room radiation atmosphere intake actuation signal. This resulted in declaring the Units 1 and 2 CRVS actuation instrumentation and CRVS inoperable and an unplanned entry into Technical Specifications (TS) 3.3.7, "Control Room Ventilation System Actuation Instrumentation," and TS 3.7.10, "Control Room Ventilation System," respectively.

The failure to use proper design control during the CRVS modification was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Barrier Integrity Cornerstone, and it adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radiological releases caused by accidents or events, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," this finding was determined to be of very low safety significance (Green) because only the radiological barrier function of the control room was affected. The licensee entered the condition into the corrective action program as Notification 50525605.

The finding had a cross cutting aspect in the area of human performance resources component because licensee staff did not maintain complete, accurate, and up to date design documentation – specifically, because the functions of the pressure switches and CRVS interlocks had never been adequately described in design control documents [H.2(c)].
Inspection Report# : 2013005 *(pdf)*

Emergency Preparedness

Occupational Radiation Safety

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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