Diablo Canyon 2
4Q/2013 Plant Inspection Findings

Initiating Events

Significance: G Jul 10, 2013
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Reactor Trip due to a Lightning Arrester Flashover
The inspectors reviewed a Green self revealing non cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for failure to implement adequate oversight controls and risk assessment while performing 500kV transmission line insulator maintenance on Unit 2. This caused an initiating event due to a flashover on the main transformer lightning arrester that resulted in a reactor trip.

The failure to effectively perform a risk assessment and properly control maintenance activities that resulted in a reactor trip was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during power operations, and is therefore a finding. 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 trip, 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. Additionally, using Inspection Manual Chapter 0612, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," this finding was determined to be of very low safety significance (Green). The licensee entered the condition into the corrective action program as Notification 50572800.

This finding had a cross-cutting aspect in the area of human performance, associated with the decision-making component, because the licensee did not demonstrate that nuclear safety was an overriding priority during this maintenance activity. Specifically, the licensee did not initially use conservative decision making in not properly categorizing the activity as a reactor trip risk (despite internal and external operating experience to the contrary), and again when the licensee did not terminate the hot washing activities when environmental conditions degraded resulting in excessive water dispersion [H.1(b)].

Inspection Report# : 2013005 *(pdf)*

Significance: G Jun 30, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Implement the Fire Protection Program Requirements for the Control of Transient Combustible Material
Green. The inspectors identified a Green non-cited violation of the licensee's approved fire protection program as defined in Diablo Canyon Facility Operating License Conditions 2.C(5) for Unit 1 and 2.C(4) for Unit 2 involving the failure to effectively implement the fire protection program. Specifically, the inspectors identified multiple examples where the licensee failed to maintain control and tracking of combustible materials, welding equipment, and oxygen/acetylene rigs in the plant. The licensee entered the condition into the corrective action program as

Notifications 50510062, 50511864, 50561959, and 50537650.
The failure to effectively implement all fire prevention controls and processes as required in the approved fire protection program was a performance deficiency. The performance deficiency was more than minor because it was associated with the protection against external events (fire) attribute of the Initiating Events Cornerstone and it adversely affected the cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions. Using Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors concluded that the finding was of very low safety significance (Green) because each deficiency was rated as "Low" degradation because for the violations of the hot work permitting program, all normally required fire prevention measures remained in place and for the violations of the transient combustibles control program, the materials involved did not significantly increase the fire frequency. This finding had a cross-cutting aspect in the area of human performance associated with the work practices component, because the cause of the performance deficiency involved the licensee not ensuring supervisory and management oversight of work activities, such that nuclear safety was supported.
Inspection Report# : 2013003 *(pdf)*

Significance: G Mar 23, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Provide Adequate Guidance To Address General Welding Standard Requirements
On February 14, 2013, the inspectors observed field welders add a partial circumferential weld on one side of the pipe in efforts to repair the pipe misalignment prior to the completion of the final visual inspection. This action represents a violation of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," because the licensee's procedure established special controls for critical distortions but failed to adequately define what situations fit that category. The licensee reviewed the stress calculation for the piping in question and concluded that the addition of the weld filler material did not affect the fatigue resistance of the weld, but acknowledged that a definition and additional guidance for the term "critical" was missing in the procedure and could have adverse effects on future final welds. The licensee entered the finding into their corrective action program as Notification 50542347.

The inspectors determined that the failure of the site's welding standard to provide adequate guidance to identify what constitutes a weld distortion during welding activities is a performance deficiency. The finding is more than minor because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, Procedure GSW ASME did not provide the necessary guidance for welders and quality assurance personnel to identify and understand what constitutes critical distortion of a weld. The welding process can introduce effects of weld shrinkage (stresses) and distortion that could adversely affect the final condition of the weld, potentially leading to a service induced failure. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. The inspectors determined the finding had a cross cutting aspect in the human performance area associated with work practices, procedural compliance, because the licensee did not adequately define or train welders to know what constituted a critical distortion, and did not effectively communicate the expectation of questioning the procedure if the welding activity required skill of the craft. [H.4(b)]

Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 23, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Failure To Identify Existing Indications During Prior Ultrasonic Examinations Of Pressurizer Structural Weld

Overlays
The inspectors identified a Green non-cited violation of 10 CFR 50.55a(a)(3)(i), which requires that proposed alternatives to industry codes and standards provide an acceptable level of quality and safety. The NRC staff approved relief request REP 1 U2 dated March 28, 2007, for installing six structural weld overlays on the pressurizer safety, relief, spray and surge nozzles. The request established acceptance criteria of laminar flaws during weld acceptance examinations limited to only the third 10 year inservice inspection interval. Contrary to the above, the licensee failed to identify unacceptable flaws as defined by the approved request following completion of these welds in 2008. The licensee entered the finding into their corrective action program as Notification 50540188.

The inspectors determined that the licensee's failure to identify indications that exceeded the acceptable linear dimension of laminar flaws prior to placing the system in service is a performance deficiency. The performance deficiency is more than minor because it is associated with the initiating events cornerstone attribute of equipment performance, and adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, during the months of February and March 2013, the licensee identified that three out of the six pressurizer structural weld overlays exhibited laminar flaws that exceeded the linear dimensions approved by the safety evaluation. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This issue did not have a cross-cutting aspect associated with it because it is not indicative of current performance.
Inspection Report# : 2013002 *(pdf)*

Significance: G Mar 23, 2013
Identified By: Self-Revealing
Item Type: FIN Finding
Failure to Effectively Evaluate Design Change for High Voltage Bushing
The inspectors reviewed a self-revealing finding for failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications. Specifically, design engineering staff was not effective in using applicable station design documents, in conjunction with industry standards to determine minimum creepage distance for high voltage insulators when replacing ceramic bushings with polymer bushings on the main bank transformer. As a result, the licensee approved installation of an insulator stack that did not provide adequate ground protection, which caused a plant trip on October 11, 2012. The licensee entered the condition in their corrective action program as Notification 50518473.

Failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during power operations, and is therefore a finding. 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 trip, 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 had a cross-cutting aspect in the area of human performance, associated with the decision making component, because the licensee did not use conservative assumptions in decision making when considering the suitability of the design for the environment [H.1(b)].
Inspection Report# : 2013002 *(pdf)*

Mitigating Systems

Significance: G Sep 20, 2013
Identified By: NRC
Item Type: NCV NonCited Violation
Valid EDG 2-1 Start Signal Caused by a Loss of 4 kV Class 1E Bus G
The inspectors reviewed a self-revealing non-cited violation 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with troubleshooting of the Unit 2, 4kV bus G that resulted in an unplanned de-energization. This caused an unplanned entry into a 72 hour shutdown technical specification due to diesel fuel oil transfer pump 0 2 becoming unavailable. The licensee entered the condition into the corrective action program as Notification 50544198.

The failure to plan and coordinate emergent maintenance such that it would not impact other mitigating systems 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. This finding was evaluated for each unit separately. For Unit 1, which was at power, 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. For Unit 2 this finding did not require evaluation using Inspection Manual Chapter 0609, and Appendix G because the unit was defueled. The finding had a cross-cutting aspect in the area of human performance, work practices component, because workers failed to use multiple human error prevention techniques.
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 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.
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 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 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, 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 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.
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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