

Diablo Canyon 1

4Q/2009 Plant Inspection Findings

Initiating Events

Mitigating Systems

Significance: G Sep 25, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Identify and Correct a Degraded Fire Barrier

The inspectors identified a noncited violation of Diablo Canyon Facility Operating License Condition (5), "Fire Protection," after Pacific Gas and Electric failed to maintain Fire Door 155 in the rated condition. On September 1, 2009, the inspectors identified that Fire Door 155 was inoperable because the external latching mechanism device was not engaged. Fire Door 155 was required to provide a 1½ hour rated barrier between Fire Areas 4B and S 2. The licensee re-engaged the latching mechanism and entered the condition into the corrective action program as Notification 50265691. On September 16, 2009, the inspectors again identified that Fire Door 155 was inoperable because the external latching mechanism device was not engaged. The licensee subsequently determined that the latching mechanism had been defective. The inspectors concluded the most significant contributor to the violation was the less than adequate corrective action taken by the licensee following identification of the problem on September 1, 2009.

This finding is more than minor because the degraded fire barrier affected the mitigating systems cornerstone external factors attribute objective to prevent undesirable consequences due to fire. The inspectors determined that the inoperable door is a fire confinement category finding and that the fire barrier was moderately degraded because the door would not perform the rated barrier function. The inspectors concluded that this finding is of very low safety significance because a non-degraded automatic full area water-based fire suppression system was in place in the exposing fire area. The licensee entered this violation into the corrective action program as Notification 50268494. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not thoroughly evaluate the degraded fire door such that the resolution address causes and extent of condition.

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

Significance: SL-IV Sep 25, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the Final Safety Analysis Report Update with Current Accident Analysis

The inspectors identified a noncited violation of 10 CFR 50.71 after Pacific Gas and Electric failed to update the Final Safety Analysis Report Update with a critical operator action assumed in the plant steam generator tube rupture accident analysis. The steam generator tube rupture accident analysis assumed that the ruptured steam generator will not overflow with water during the accident. To ensure a margin to overflow, the accident analysis included a critical assumption that plant operators would manually trip the turbine-driven auxiliary feedwater pump within 5.54 minutes following the reactor trip. Final Safety Analysis Report Update Section 15.4.3.1, "Identification of Causes and Accident Description," and Final Safety Analysis Report Update Table 15.4 12, "Operator Action Times for Design Basis SGTR Analysis," provided a detailed description of the time dependant operator actions assumed in the accident analysis. The inspectors identified that neither section included the critical assumed operator action to trip the turbine-driven auxiliary feedwater pump. The inspectors concluded that the licensee had a reasonable opportunity to identify and correct the problem when the results of the revised steam generator tube rupture accident, supporting steam generator replacement, was updated in the Final Safety Analysis Report Update in October 2008. The licensee entered this violation into the corrective action program as Notification 50269753.

The inspectors evaluated this finding with the traditional enforcement process because the issue affected the NRC's ability to perform its regulatory function. The inspectors concluded that the finding is greater than minor because the failure to update the required critical operator action assumed in the accident analysis could have a material impact on safety or licensed activities. The inspectors concluded that the violation is Severity Level IV because the erroneous information was not used to make an unacceptable change to the facility or procedures. The inspectors concluded that this finding had a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee failed to implement a corrective action program with a low threshold for identifying issues and failed to identify the inaccuracies in the accident analysis as described in the Final Safety Analysis Report Update.

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

Significance:  Jul 24, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Safe Shutdown Procedure Not Consistent with Safe Shutdown Analysis

An NRC identified noncited violation of License Condition 2.C.(4), "Fire Protection," was identified in that post-fire safe shutdown Procedure CP M-10, "Fire Protection of Safe Shutdown Equipment," Revision 20, was not consistent with the calculation M-928, "10 CFR 50 Appendix R Safe Shutdown Analysis," for Fire Area 3 CC, containment penetration rooms. Specifically, certain time-critical operator manual actions identified in the safe shutdown analysis were not incorporated into Procedure CP M-10 such that there was assurance that the actions would be completed within the times assumed in the safe shutdown analysis. A fire in Fire Area 3-CC may cause a spurious actuation of Atmospheric Dump Valves PCV-19 and PCV-20. The safe shutdown analysis recommends failing closed Atmospheric Dump Valves PCV-19 and PCV-20 by manually isolating their air supply (instrument air, backup air, and nitrogen) and then venting the supply line to avoid excessive plant cooldown. Procedure CP M-10, "Fire Protection of Safe Shutdown Equipment," Revision 20, did not include the steps to perform these actions.

The inspectors determined that failing to incorporate post-fire safe shutdown actions to prevent an excessive cooldown due to fire induced spurious opening of atmospheric dump valves in the post-fire safe shutdown operating procedure was a performance deficiency. This finding is more than minor because it is associated with the reactor safety mitigating systems cornerstone attributes of protection against external events, (i.e., fire), and procedure quality. This finding was found to be of very low safety significance (Green) consistent with the guidance in Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," and its attachments. This finding has a crosscutting aspect in the Resources component of the Human Performance area because the procedure was not complete and up to date in accordance with the safe shutdown analysis.

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

Significance: SL-IV Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update the FSAR update with Current Plant Design Criteria

The inspectors identified a noncited violation of 10 CFR Part 50.71 after Pacific Gas and Electric failed to update the Final Safety Analysis Report Update with current plant design criteria. The Final Safety Analysis Report Update stated that Diablo Canyon was designed to comply with the Atomic Energy Commission General Design Criteria for Nuclear Power Plant Construction Permits, published in July 1967. The inspectors identified that the Diablo Canyon Safety Evaluation Report stated that the NRC used General Design Criteria published in July 1971 to review the plant design. In addition, during the initial licensing process, the licensee stated that the plant was evaluated against the 1971 design criteria during the licensing process.

The inspectors evaluated this finding using the traditional enforcement process because the failure to update the Final Safety Analysis Report affected the NRC's ability to perform its regulatory function. The inspectors concluded that the failure to update the Final Safety Analysis Report was a Severity Level IV violation based on the General Statement of Policy and Procedure for NRC Enforcement Actions, Supplement I – Reactor Operations, dated January 14, 2005, because the erroneous information was not used to make an unacceptable change to the facility or procedures. The inspectors concluded that this finding had a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because the licensee did not take appropriate

corrective actions to address safety issues and adverse trends in a timely manner.

Inspection Report# : [2009003](#) (pdf)

Significance:  Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Corrective Actions Following the Loss of Design Control for the 500 kV Offsite Power Source

The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria XVI, "Corrective Action," after Pacific Gas and Electric failed to adequately correct a nonconforming condition related to the adequacy of design documentation to demonstrate the acceptability of design control for the 500 kV delayed offsite power system. The licensee stated the design control documentation demonstrated that the offsite power system met the design basis was not retrievable. The licensee entered this nonconforming condition into the corrective action system. On October 28, 2008, plant engineers completed an evaluation of the nonconforming condition and concluded the delayed offsite power system design basis was demonstrated by a "road map" of pre-existing analyses created to support other plant functions. The inspectors concluded that the "road map" was less than adequate because the licensee failed to consider the affect of the loss of reactor coolant pump seal cooling and injection anticipated during the time needed to align the offsite power supply to the engineering safety feature buses. The inspectors concluded that the failure of the licensee to promptly correct the nonconforming condition and ensure that the "road map" implemented measures for verifying or checking the adequacy of design assumptions was reflective of current performance.

This finding is more than minor because the Mitigating Systems Cornerstone design control attribute and objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences was affected. The inspectors concluded this finding is of very low safety significance because the finding was a design deficiency confirmed not to result in the loss of operability or functionality. This finding had a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because Pacific Gas and Electric did not thoroughly evaluate the nonconforming condition to ensure that the offsite power system design basis was met.

Inspection Report# : [2009003](#) (pdf)

Significance: SL-IV Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Evaluate a Change to the Facility as Described in the Final Safety Analysis Report Update Associated with 500 kV Offsite Power Source

The inspectors identified a noncited violation of 10 CFR 50.59 after Pacific Gas and Electric failed to perform an adequate evaluation of a thermal hydraulic analysis to determine if prior NRC approval was required for a 30-minute delay time to align offsite power. This analysis, Calculation STA 274, "RETRAN Evaluation of GDC 17 Loss of AC Scenario," Revision 0, demonstrated that the 30-minute delayed offsite power source was acceptable. On December 31, 2008, a Pacific Gas and Electric 10 CFR 50.59 screen concluded that Calculation STA 274 was not required to be evaluated to determine if prior NRC approval was required for the delay time. On March 31, 2009, the inspectors concluded that the licensee was required to evaluate Calculation STA 274 to determine if prior NRC approval was needed. On May 27, 2009, Pacific Gas and Electric completed the 50.59 evaluation and concluded that prior NRC approval was required for the 30-minute delay time to align offsite power.

The inspectors concluded that the finding is more than minor because the changes made to the facility required prior NRC review and approval. The finding affected the Mitigating Systems Cornerstone because the change described how the delayed offsite power source met the design basis. The inspectors concluded the finding is of very low safety significance because the finding was a design deficiency that did not result in the loss of operability or functionality. Because the issue affected the NRC's ability to perform its regulatory function, the inspectors evaluated this finding using the traditional enforcement process. This issue was classified as Severity Level IV because the violation of 10 CFR 50.59 involved conditions resulting in very low safety significance by the significance determination process. This finding had a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because Pacific Gas and Electric did not thoroughly evaluate the change to the facility as described in the Final Safety Analysis Report Update to determine if prior NRC approval was required.

Inspection Report# : [2009003](#) (pdf)

Significance: G Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Follow Power Ascension Procedures

The inspectors identified a noncited violation of Technical Specification 5.4.1, "Procedures," after plant operators failed to stabilize reactor power and perform a comparison between the calorimetric heat balance calculation and the power range output prior to exceeding 30 percent power. The inspectors concluded several human performance factors contributed to the procedure violation, including less than adequate pre-job brief and poor operational command and control of the reactor power ascension.

This finding is greater than minor because the failure to follow procedure is associated with the human performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors used Inspection Manual Chapter 0609, Attachment 4, "Phase 1 Initial Screening and Characterization of Findings," to analyze the significance of this finding. The inspectors concluded the finding is of low safety significance because the violation is not a design or qualification deficiency, did not represent a loss of a system safety function or risk significant equipment, and did not screen as potentially risk significant due to a seismic, flooding, or a severe weather initiating event. This finding has a crosscutting aspect in the area of human performance and the work practices component because the licensee failed to ensure adequate supervisory oversight of power ascension activities.

Inspection Report# : [2009002](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Significance: G Jun 30, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Promptly Declare an Unusual Event

The inspectors identified a noncited violation of 10 CFR 50.54(q), after a Pacific Gas and Electric shift manager failed to promptly declare an Unusual Event in accordance with the emergency plan. Station procedures required that the emergency plan be activated within 15 minutes following a fire alarm in the containment building that could not be validated as false.

This finding is more than minor because it affected the response organization performance attribute of the Emergency Preparedness Cornerstone due to failure to properly recognize plant conditions commensurate with an Unusual Event classification. This finding was of very low safety significance, because it did not meet any higher level emergency plan and implementing procedure notification requirements. The licensee entered this issue into the corrective action program as Notification 50247279. This finding had a crosscutting aspect in the area of human performance associated with the work practices component because the licensee failed to implement the time requirements of the Emergency Plan.

Inspection Report# : [2009003](#) (*pdf*)

Occupational Radiation Safety

Significance:  Mar 12, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure

The inspectors reviewed a self-revealing non-cited violation of Technical Specification 5.4.1 for failure to develop a procedure for removing the reactor head from the reactor pressure vessel and the subsequent filling of the reactor coolant system in a manner that would minimize the potential for airborne contamination. Specifically, on March 5, 2009, while lifting the reactor vessel head in preparation for reloading the reactor core, the licensee experienced airborne radioactivity as high as 4.8 derived air concentrations due to the delay in flooding the reactor refuel cavity. The delay allowed the radioactive contamination on the reactor upper internal structure to dry and subsequent air flow around the upper internal structure caused the contamination to become airborne. The licensee evacuated unnecessary personnel from containment, initiated containment purge to reduce airborne contamination, and obtained air samples until airborne contamination levels were reduced to normal levels (less than 0.2 derived air concentrations). The licensee entered this item into the corrective action program as Notification 50209442 and is conducting an apparent cause evaluation of the event.

The failure to develop and implement procedures for removing the reactor head and filling the reactor coolant system in a manner that minimized the potential for airborne radioactivity is a performance deficiency. The finding is greater than minor because it is associated with the occupational radiation safety cornerstone attribute of program and process and affected the cornerstone objective of exposure/contamination control, in that, failure to develop and implement adequate procedures for removing the reactor vessel head and fill the reactor coolant system resulted in workers' unplanned, unintended dose. Using the Occupational Radiation Safety significance determination process, the inspectors determined this finding had very low safety significance because the finding involved as low as is reasonably achievable planning and work controls, and the licensee's 3-year rolling average collective dose is less than 135 person-rem per unit. Because the AMS-4 on the refuel floor in containment alarmed at an airborne concentration of greater than 0.5 derived air concentrations, the finding is self-revealing. Additionally, the finding had a crosscutting aspect in the area of human performance, work control component, because the licensee failed to plan and coordinate work activities by incorporating job site conditions which may impact radiological safety.

Inspection Report# : [2009002](#) (*pdf*)

Public Radiation Safety

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.

Miscellaneous

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