

Diablo Canyon 1

3Q/2007 Plant Inspection Findings

Initiating Events

Significance:  Aug 09, 2007

Identified By: Self-Revealing

Item Type: FIN Finding

Inadequate main turbine repair procedure resulted in an unplanned power reduction and forced outage

A self-revealing finding after an inadequate main turbine maintenance procedure resulted in an unplanned load reduction and a reactor shutdown. On August 9, 2007, Unit 1 generator output decreased by 60MW due to failed main turbine stop valve. Pacific Gas and Electric Company shutdown the plant the following day to repair the failed valve. The valve failed because the maintenance personnel did not properly adjust the external travel stop during outage related maintenance. The travel stop was not properly adjusted because the maintenance procedure used did not require the maintenance personnel to verify that the disc was properly back seated against the internal stop during adjustment. This issue was entered into Pacific Gas and Electric Company Corrective Action Program as Non Conformance Report N0002219.

The finding is greater than minor because if left uncorrected, the condition would become a more significant safety concern. Using Inspection Manual Chapter 0609, Significance Determination Process, Phase 1 Worksheet, the inspectors determined the finding to have very low safety significance because the condition did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. This finding has a crosscutting aspect in the area of human performance, associated with the resources component because PG&E failed to provide an adequate main turbine maintenance procedure (H.2.c).

Inspection Report# : [2007004](#) (*pdf*)

Mitigating Systems

Significance:  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Scope Reactor Cavity and Containment Structure Sump Level Indication Systems Into the Maintenance Rule Program

GREEN. The inspectors identified a Green, noncited violation of 10 CFR 50.65(b) was identified for the failure of engineering personnel to include the reactor cavity and containment structure sump level indication systems into the scope of its program for monitoring the effectiveness of maintenance. Specifically, between April 14, 2007 and May 17, 2007, Units 1 and 2 experienced multiple failures of the reactor cavity and containment structure sump level indications. These systems are required by the plant's Technical Specifications in order to promptly identify and take actions for reactor coolant system leaks before they can potentially develop into a loss of coolant accident. Additionally, the inspectors discovered that Emergency Operating Procedure ECA-3.1, "SGTR With Loss of Reactor Coolant - Subcooled Recovery Desired," Revision 18, utilized the containment structure sump level indication for mitigative actions. Based on the fact that the systems are used to mitigate a loss of coolant accident and were used in the emergency operating procedures, the inspectors determined that the systems should have been included in Pacific Gas and Electric Company's program for monitoring the effectiveness of maintenance. This issue was entered into Pacific Gas and Electric Company's corrective action program as Action Request A0696295.

The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and affects the cornerstone 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, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance since it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event. This finding has a crosscutting aspect in the area of human performance, associated with the decision-making component, in that Pacific Gas and Electric Company failed to use conservative assumptions in evaluating the function and use of the sump level indications in mitigating the effects of design basis accidents (H.1(b)).

Inspection Report# : [2007003](#) (*pdf*)

G

Significance: Feb 16, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Update 480 V Switchgear Heat Dissipation Calculation

An NRC-identified, noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was determined for the failure of engineering personnel to appropriately update the heat dissipation calculation for vital 480 V switchgear rooms. Since 1994, Calculation 90-DC, "Heat Dissipation of Electrical Equipment – 480 V Switchgear," Revision 4, had not been updated with changes in analyzed bus electrical loading. The calculation was input to other ventilation calculations to determine air flow balancing to 480 V switchgear and inverter rooms. This issue was entered into Pacific Gas and Electric Company's corrective action program as Action Requests A0688992 and A0689527.

The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of procedure quality and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to have very low safety significance since it did not represent a loss of system safety function, an actual loss of safety function of a single train for greater than its Technical Specifications allowed outage time, or screen as potentially risk-significant due to a seismic, flooding, or severe weather initiating event.

Inspection Report# : [2007002](#) (*pdf*)

G

Significance: Jan 11, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Use Correct Design Inputs in Determination of a Potential for Choking Flow/Cavitation Across the Auxiliary Service Water Throttled Butterfly Valves

Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for the failure to translate design basis information into specifications and procedures. The team identified that a nonconservative flow rate was used as an input in engineering design calculations resulting in the potential for choked flow at the discharge valves for the Unit 1 auxiliary service water system. Choked flow turbulence is a wear concern for these components, and can result in system failure. The licensee entered this finding into their corrective action program as Action Requests A0678338 and A0678472.

The finding is more than minor because the error affected the Mitigating System Cornerstone objective (Design Control attribute) of ensuring availability, reliability, and capability of the auxiliary service water systems to respond to initiating events to prevent undesired consequences. Using the Manual Chapter 0609, Significance Determination Process, Phase 1 screening worksheet, the issue screened as having very low safety significance because 1) did not represent a loss of system safety function; and 2) did not represent an actual loss of safety function of one or more non-technical specification trains of equipment; and did not screen as potentially risk significant because of a seismic, flooding, or severe weather initiating event.

Inspection Report# : [2006011](#) (*pdf*)

G

Significance: Jan 11, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Consider Instrument Uncertainty in Surveillance Requirements for Technical Specifications LCO

3.7.9

Green. The team identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, Design Control, for the failure to demonstrate that the acceptance criteria for surveillance tests had conservatively accounted for uncertainties in determination of the minimum allowed ultimate heat sink temperature. Specifically, the team identified that the acceptance criteria specified in the Surveillance Test Procedure STP I-1A, Routine Shift Checks Required by the Licensee, Revision 101, did not correctly account for instrument uncertainty. The licensee entered this finding into their corrective action program as Action Request A0682398.

The finding is more than minor because the error affected the Mitigating System cornerstone objective (Design Control attribute) of ensuring availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Using the Manual Chapter 0609, Significance Determination Process, Phase 1 screening worksheet, the issue screened as having very low safety significance because 1) did not represent a loss of system safety function; and 2) did not represent an actual loss of safety function of one or more non-technical specification trains of equipment; and did not screen as potentially risk significant because of a seismic, flooding, or severe weather initiating event.

Inspection Report# : [2006011](#) (*pdf*)

G

Significance: Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Change to Auxiliary Saltwater Pump Routine Surveillance Test Acceptance Criteria

GREEN. An NRC-identified, non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was determined for the failure of engineering personnel to apply adequate design control measures. Specifically, on February 9, 2006, engineering personnel changed the acceptance criteria in the auxiliary saltwater pump surveillance test from greater than zero packing leak-off to zero packing leak-off with packing gland temperature less than 120°F. The acceptance criteria change was based on engineering judgment even though vendor documentation called for greater than zero packing leak-off to prevent packing and pump shaft damage. This issue was entered into Pacific Gas and Electric Company's corrective action program as Action Request A0684631.

The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of procedure quality and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to be of very low safety significance because it did not represent an actual loss of system safety function, did not represent an actual loss of a single train for greater than its Technical Specification allowed outage time, and the finding did not screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding has a cross-cutting aspect in the area of human performance because engineering personnel failed to provide up-to-date design documentation to support a design change in surveillance test acceptance criteria.

Inspection Report# : [2006005](#) (*pdf*)

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Significance: Oct 15, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Temporary Modification to a Vital Battery

An NRC-identified, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," was identified for the failure to promptly correct a condition adverse to quality. Specifically, on October 15, 2006, Pacific Gas and Electric Company implemented a temporary modification to Vital Battery 1-1 contrary to ANSI/IEEE Standard 450-1987, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations." Additionally, surveillance tests to monitor the condition of the degraded battery cell were adversely affected by the installed temporary modification. This issue was entered into Pacific Gas and Electric Company's corrective action program as Action Request A0678820.

The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of equipment performance and affects the associated cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using the Manual Chapter

0609, “Significance Determination Process,” Phase 1 Worksheet, the inspectors determined that this finding is of very low safety significance because it did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program in that engineering staff did not thoroughly assess the operability of the battery and correct a condition adverse to quality in a timely manner.
Inspection Report# : [2006005](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

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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