Diablo Canyon 1
4Q/2006 Plant Inspection Findings

Initiating Events

Significance: G Jan 27, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Adequately Maintain Abormal Operating Procedure for Reactor Coolant Pump Malfunctions
A self-revealing, non-cited violation of Technical Specification 5.4.1.a was identified for the failure to adequately maintain abnormal operating Procedure OP AP-28, “Reactor Coolant Pump Malfunction,” Revision 1. On January 27, 2006 operators vented the pressurizer relief tank and received a reactor coolant pump high seal flow alarm. Due to the inadequate construction of Procedure OP AP-28, operators were directed to a step that required them to manually trip the reactor when diagnostics performed in previous steps demonstrated no reactor coolant pump seal problem. The failure to adequately maintain Procedure OP AP-28 increased the potential for operators to initiate a reactor trip, with loss of forced circulation in one loop, for conditions that may not warrant such a response. This finding was entered into the corrective action program as Action Request A0658595.

The finding impacted the Initiating Events Cornerstone and, as described in Inspection Manual Chapter 0612, Appendix B, the finding was considered more than minor since it affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions. Specifically, Procedure OP AP-28 affected the cornerstone attribute of procedure quality since it may lead operators to induce a significant transient on the unit (reactor trip) for plant conditions that do not warrant such action. Using the Significance Determination Process Phase 1 Screening Worksheet of Inspection Manual Chapter 0609, Appendix A, the finding was determined to be of very low safety significance since it does not contribute to the likelihood of a primary or secondary loss-of-coolant accident, does not contribute to both the likelihood of a reactor trip and unavailability of mitigating systems, and it does not increase the likelihood of a fire or flood. The cause of the finding is related to the crosscutting element of human performance in that procedure developers constructed Procedure OP AP-28 in a way that would unnecessarily increase the likelihood of a manual reactor trip.

Inspection Report# : 2006002 *(pdf)*

Mitigating Systems

Significance: G Sep 25, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Include Floor Drains Credited in the Flood Analysis Into the Maintenance Rule Program
An NRC-identified, noncited violation of 10 CFR 50.65(b) was determined for the failure of engineering staff to include the auxiliary feedwater pump room floor drains within the scope of Pacific Gas and Electric Company’s program for monitoring the effectiveness of maintenance at the Diablo Canyon Power Plant. Specifically, Calculation 76060, “Flooding Analysis G Area and Auxiliary Building,” Revision 1, assumes that at least two of the three floor drains in the auxiliary feedwater pump rooms would be able to remove up to 316 gpm of water in the event of a flood. Despite their credited function in the flood analysis, engineering staff did not scope them into their monitoring program. This issue was entered into Pacific Gas and Electric Company’s corrective action program as Action Request A0678658.

The finding is greater than minor because it is associated with the Mitigating Systems cornerstone attribute of protection against external factors and affects the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Inspection Manual Chapter 0609,

"Significance Determination Process," Phase 1 Worksheet, the inspectors determined that this finding is of very low safety significance because the condition did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its Technical Specification allowed outage time, did not represent an actual loss of one or more risk-significant non-Technical Specification trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding has a cross-cutting aspect in the area of problem identification and resolution associated with operating experience because engineering personnel did not effectively incorporate pertinent industry operating experience into their program for evaluating the effectiveness of maintenance performed on AFW pump room floor drains.
Inspection Report# : 2006004 *(pdf)*

Significance: G Aug 23, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Promptly Identify that the Correct Equipment Necessary for Implementing EOP for Inadequate Core Cooling Was Not Pre-staged
An NRC-identified, noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure to promptly identify a condition adverse to quality. Specifically, Pacific Gas and Electric Company failed to promptly identify that it had prestaged the wrong equipment (a flange hose connection with the wrong tread pattern) necessary to cross-connect the fire main water system to the auxiliary feedwater system during a loss of core cooling event. This performance deficiency was entered into Pacific Gas and Electric Company's corrective action program as Action Request A0676729.

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 Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the inspectors determined that this finding is of very low safety significance because the condition did not represent a loss of system safety function, did not represent an actual loss of safety function of a single train for greater than its TS allowed outage time, did not represent an actual loss of one or more risk-significant non-TS trains of equipment for greater than 24 hours, and did not screen as potentially risk-significant due to seismic, flooding, or severe weather. This finding has a crosscutting aspect in the area of human performance associated with resources because the licensee did not ensure that equipment needed to perform an EOP was available and adequate to assure nuclear safety.
Inspection Report# : 2006004 *(pdf)*

Significance: G Jun 12, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to prevent recurrence of limitorque model SMB-000 failures
An NRC-identified, non-cited violation of 10 CFR Part 50, Criterion XVI, "Corrective Actions" was determined for the failure to prevent recurrence of a similar failures of Limitorque SMB-000 actuators in the auxiliary feedwater system. Pacific Gas and Electric Company (PG&E) staff failed to adequately troubleshoot and provide for timely corrective actions regarding auxiliary feedwater control valves that failed due to high actuator torque switch resistance. This finding was entered into PG&E's corrective action program as Nonconformance Report N0002205.

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 Inspection 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 safety function, represent an actual loss of safety function for a single train for greater than the Technical Specification allowed outage time, or screen as potentially risk significant due to seismic, fire, flooding, or severe weather initiating events. The finding had a cross-cutting aspect in the area of problem identification and resolution since PG&E staff failed to adequately trend, assess, and troubleshoot previous Limitorque SMB-000 actuator failures.

Inspection Report# : 2006003 *(pdf)*

Significance: G May 24, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to promptly identify voiding in accumulator discharge line
A self-revealing, non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI was determined for the failure of operations personnel to promptly identify a condition adverse to quality. Specifically, on November 27, 2005, operators failed to document, in the corrective action program, an unexpected level drop in Accumulator 1-3. Failure to enter the occurrence into the corrective action program precluded actions that would have addressed similar conditions that resulted in a subsequent event involving an unexpected level drop and water hammer associated with Accumulator 2-3, which occurred on May 21, 2006. This issue was entered into Pacific Gas and Electric Company's corrective action program as Action Request A0669468.

The finding is greater than minor because it is associated with the Mitigating Systems Cornerstone attribute of configuration control 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 Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1 Worksheet, the finding is determined to be of very low safety significance because the finding did not represent a loss of safety function, an actual loss of a safety-related train for greater than its Technical Specification allowed outage time, or screen as potentially risk-significant due to seismic, fire, flooding, or severe weather initiating events. The finding had a cross-cutting aspect in the area of problem identification and resolution because operations personnel failed to promptly identify, in the corrective action program, the unexpected level drop in Accumulator 1-3.

Inspection Report# : 2006003 *(pdf)*

Barrier Integrity

Emergency Preparedness

Significance: N/A Apr 06, 2006
Identified By: NRC
Item Type: FIN Finding
Acceptable performance in addressing performance indicator monitoring and accuracy
The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee's evaluation associated with the failure to provide complete and accurate performance indicator data to the NRC. This performance issue was previously characterized as having low to moderate risk significance (White) in NRC Inspection Report 05000275, 05000323/2006005. During this supplemental inspection, performed in accordance with Inspection Procedure 95001, the inspector determined that the licensee conducted comprehensive evaluations of the missed performance indicator data and the failure to submit complete and accurate performance indicator information to the NRC. The licensee's evaluations identified the primary root cause of the performance issue to be inconsistent standards, procedures, and policies which hindered implementation of the emergency plan, limited and inequitable emergency planning training, and the use of inexperienced emergency planning personnel. To determine the scope of the performance indicator issue, the licensee had a panel of subject matter experts review programs to identify similar error precursors. These experts identified programs that met the criteria. These programs were entered into the licensee's corrective action program and required that self-assessments be performed. The licensee also issued Action Requests to other performance indicator monitors to determine if other performance indicators were not meeting station goals or have a high potential or risk of not meeting them. In addition, procedures were revised to clarify procedure details. Given the licensee's acceptable performance in addressing the performance indicator data monitoring and accuracy, the white finding associated with this issue will only be considered in assessing plant performance for a total of four quarters in accordance with the guidance in Inspection Manual Chapter 0305, "Operating Reactor Assessment Program." Implementation of the licensee's corrective actions will be reviewed during a future inspection.
Inspection Report# : 2006010 *(pdf)*

Occupational Radiation Safety

Significance: G Feb 09, 2006
Identified By: Self-Revealing
Item Type: NCV NonCited Violation
Failure to Follow Special Work Permit Instructions
The inspectors reviewed a self-revealing, NCV of Technical Specification 5.4.1, resulting from failure to follow special work permit instructions by a radiation protection technician. On October 26, 2005, a radiation protection technician working on Special Work Permit 05-1004, "Radiation Protection in Containment," placed a portion of the whole body in a higher dose rate than allowed by the special work permit (1,600 millirem per hour versus 1,000 millirem per hour). Pacific Gas and Electric Company (PG&E) was alerted to the problem by the alarming dosimeter of the radiation protection technician. As a corrective action, PG&E will include this event in radiation protection continuing training and require radiation protection technicians to be present during the worker briefings, if the work will be conducted in dose rates greater than 1 rem per hour.

The finding was greater than minor because it was associated with one of the cornerstone attributes (exposure control) and the finding affected the Occupational Radiation Safety cornerstone objective, in that a failure to follow special work permit instructions resulted in additional radiation dose. The inspectors determined that the finding had no more than very low safety significance because (1) it did not involve an ALARA finding, (2) there was no personnel overexposure, (3) there was no substantial potential for personnel overexposure, and (4) the finding did not compromise PG&E's ability to assess doses. The finding also had cross-cutting aspects related to human performance in that the radiation protection technician failed to follow the special work permit instructions directly resulted in the finding.
Inspection Report# : 2006002 *(pdf)*

Public Radiation Safety

Significance: G Aug 29, 2006
Identified By: NRC
Item Type: NCV NonCited Violation
Failure to Survey Material Unconditionally Released
The team reviewed a self-revealing, non-cited violation of 10 CFR 20.1501(a) that resulted in an unconditional release of radioactive material from the radiologically controlled area. Specifically, the contents of a vehicle cab were not removed and surveyed, resulting in the release of a contaminated safety harness from the radiologically controlled area. The safety harness remained in the protected area. The licensee determined the inadequate survey of the vehicle and its contents was caused by inadequate procedural guidance. As corrective action, the licensee plans to revise Procedure RCP D-614, "Release of Solid Materials from Radiologically Controlled Areas," Revision 9, to include instructions for the removal of such items from vehicles and the survey to detect contamination.

The failure to adequately survey a contaminated item to prevent its release from the radiologically controlled area is a performance deficiency. This finding is greater than minor because it was associated with a Public Radiation Safety cornerstone attribute (material release) and it affected the associated cornerstone objective in that the failure to control radioactive material decreases the licensee's assurance that the public will not receive unnecessary dose. Using the Public Radiation Safety Significance Determination Process, the team determined that the finding had very low safety significance because: (1) the finding was a radioactive material control finding, (2) it was not a transportation finding, (3) it did not result in public dose greater than 0.005 rem, and (4) radioactive material was not released from the protected area more than five times. Additionally, this finding has a cross-cutting aspect in the area of human performance associated with resources because the licensee did not have complete procedures, in that, the procedures did not provide sufficiently detailed guidance to ensure the surveying of vehicle contents prior to removal of the vehicle from the radiologically controlled area.
Inspection Report# : 2006013 *(pdf)*

Physical Protection

Physical Protection information not publicly available.

Miscellaneous

Significance: N/A Jun 22, 2006
Identified By: NRC
Item Type: FIN Finding
Biennial problem identification and resolution assessment for 2006
The team reviewed approximately 280 action requests, apparent cause evaluations, and root cause analyses, as well as supporting documents to assess problem identification and resolution activities. In general, the corrective action program procedures and processes were effective, thresholds for identifying issues were low, and corrective actions were adequate to address conditions adverse to quality. Notwithstanding the above, a number of self-revealing and NRC identified findings in each of these attributes of your problem identification and resolution program were noted over the past two years. Many of these findings were related to equipment deficiencies, some of which resulted in inoperable safety-related equipment. The team noted improvement in all three areas when comparing the results of this and more recent inspections when compared to inspections two years ago.

Based on the interviews conducted, the team concluded that a positive safety conscious work environment existed at Diablo Canyon Power Plant. The team determined that employees felt free to raise safety concerns to station managers and supervisors, the employee concerns program, and the NRC. However, the team noted two isolated incidents regarding the environment that did not foster openly raising safety concerns. The licensee had already taken actions to address the concerns. All the interviewees believed that potential safety issues were being addressed.
Inspection Report# : 2006012 *(pdf)*

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