

# Diablo Canyon 1

## 4Q/2004 Plant Inspection Findings

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### Initiating Events

**G****Significance:** Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Inadequate procedure for reactor vessel draining resulted in inadvertent two feet level change**

A self-revealing noncited violation of 10 CFR Part 50, Appendix B, Criterion V was reviewed for failure to provide a procedure appropriate to the circumstances. Specifically, Procedure OP A-2:II "Reactor Vessel – Draining the RCS to the Vessel Flange with Fuel in the Vessel," Revision 28, was not appropriate to the circumstances in that Attachment 9.5 prescribed opening cross-tie valves between the pressurizer and reactor vessel head following reactor vessel drain down to the reactor vessel flange. This resulted in an alignment in which the reactor vessel head was not vented, and caused an inadvertent loss of control of vessel level and an inadvertent increase of two feet in vessel level. In addition to the procedure aligning the system at an inappropriate point in the evolution, operators did not maintain the valve status board and assumed that the reactor vessel was adequately vented. Human performance crosscutting aspects were identified involving adequacy and verification of a procedure development and implementation, and system status awareness. Following the above event, and others described in 1R.14.1, .2, .3, and .4, that included inadvertent losses of control of system status by operations leadership, the operations director initiated an operations stand down with the senior reactor operators and day shift plant operations staff, emphasizing the need to control overall system status.

This finding was of greater than minor significance because it involved the Initiating Events cornerstone and represented a loss of control of reactor vessel level. This finding was assessed using the Significance Determination Process found in Inspection Manual Chapter 0612, Appendix G, "Shutdown Operations," and determined to be of very low safety significance (Green). Item II.C(5) of the shutdown Significance Determination Process ("Drain down controlled") applies. Although this violation resulted in an inadvertent level change of approximately two feet, the level change resulted in an increase in vessel water level, thus not decreasing the time to boil.

Inspection Report# : [2004003\(pdf\)](#)**G****Significance:** Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Exceeding pressurizer heat up rate**

A self-revealing noncited violation of TS 5.4.1.a was reviewed for failure to implement procedures. Specifically, Pacific Gas and Electric Company failed to implement Procedure OP A-2:IX "Reactor Vessel – Vacuum Refill of the RCS," Revision 3, by exceeding the required pressurizer heatup rate of 100 degrees in any one hour. On May 11, 2004, during drawing of a pressurizer steam bubble, operators allowed a pressurizer heatup rate of 129 degrees in one hour. A human performance crosscutting aspect was identified for the failure to establish adequate configuration controls for the conduct and monitoring of the pressurizer heat up as well as for the initiation of the technical review following the identification that the heat up rate had been exceeded. An engineering evaluation was performed that demonstrated the stresses experienced during the heat up were within allowable limits.

This issue affects the barrier integrity cornerstone objective to ensure that the pressurizer, part of reactor coolant system barrier, remains intact, and not subject to excessive thermal stresses. This issue is more than minor because it could have had an actual impact on the ability to minimize stresses on the reactor coolant pressure boundary. Using the Phase 1 Significance Determination Process screening worksheet the inspectors determined that the issue was of very low safety-significance (Green) because engineers performed an evaluation of the condition and determined that the pressurizer remained operable because the condition was bounded by a previous analysis. Previous analysis indicated that the pressurizer could withstand a maximum heat up rate of up to 282 degrees F per hour without excessive stresses.

Inspection Report# : [2004003\(pdf\)](#)

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### Mitigating Systems

**G****Significance:** Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Correct ECCS Voiding Following Operation of the Positive Displacement Pump**

The inspectors identified a noncited violation of 10 CFR 50 Appendix B, Criterion XVI, for the failure to take adequate corrective actions to prevent a void space in the Unit 1 emergency core cooling system piping from exceeding the volume allowed by plant procedures. The void

space volume caused operators to declare the emergency core cooling system inoperable and enter Technical Specification 3.0.3 twice on October 21, 2004. Operation of the positive displacement pump, with subsequent operation of the centrifugal charging pump, had been discovered to create a void in the emergency core cooling system piping approximately five months earlier on Unit 2. This finding had problem identification and resolution crosscutting aspects for determining the extent of the condition and preventing its recurrence.

The finding affected the Mitigating System cornerstone for ensuring the capability of systems that respond to initiating events to prevent undesirable consequences and it affected the equipment performance attribute for availability and reliability. The finding is greater than minor because it is similar to Example 2.f in Appendix E of Inspection Manual Chapter 0612. Similar to the example, the void size had exceeded the limit described in Calculation STA-108, "Allowable Accumulated Gas Volume in the CCPs' [centripetal charging pump] and SIPs' [safety injection pump] Suction Cross-Tie Piping," Revision 3. Using the Inspection Manual Chapter 0609 Phase 1 Screening Worksheet, the finding was of very low safety significance (Green) since the finding is not a design or qualification deficiency that was confirmed to result in a loss of function per Generic Letter 91-18.

Inspection Report# : [2004005\(pdf\)](#)

**G**

**Significance:** Dec 31, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

#### **Inadequate ASCO Valve Qualification Causes Plant Trip**

A self revealing violation of 10 CFR 50.49(f) was identified for the failure to maintain approximately 70 safety related solenoid operated valves in an environmentally qualified condition. On February 9, 2002, an age related ASCO solenoid operated valve failure caused a loss of steam generator feedwater event and a Unit 2 manual plant trip. Further, the licensee did not promptly evaluate the extent of condition of the ASCO failure (coil insulation failure), which delayed the identification of elastomer qualification issues for approximately 1 year. In a related finding, the team identified that the licensee had missed earlier opportunities to identify ASCO elastomer qualification issues, in that they failed to thoroughly evaluate several pertinent NRC information notices and previous valve failures. The failure to: 1) properly establish equipment qualification limits; 2) thoroughly evaluate plant events and failures; and 3) properly evaluate industry operating experience constituted performance concerns. PG&E entered this issue into their corrective action program as Action Request 0613008. These issues have cross-cutting aspects in the area of problem identification and resolution because the original problem investigation did not identify the full scope of the cause and extent of condition, delaying some important corrective actions for approximately 1 year.

This finding was greater than minor because, if left uncorrected, these deficiencies would become a more significant safety concern by increasing the failure rate as the components age. An NRC Senior Reactor Analyst performed a Phase 3 significance determination and the estimated delta-CDF for the finding is 2.2E-8/yr. This violation was of very low risk significance.

Inspection Report# : [2004005\(pdf\)](#)

**G**

**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: FIN Finding

#### **Failure to Address Extent of Condition on Broken Pressurizer Heater Cable**

A finding was identified by the inspectors for Pacific Gas and Electric Company's failure to assess the extent of condition regarding a broken wire at a pressurizer heater electrical connection during Refueling Outage 1R11. As a result, the corrosive agent left on the connections corroded all the Unit 1 pressurizer heater electrical connections as discovered in Refueling Outage 1R12. The finding was greater than minor because it affected the reliability attribute and objective of the Mitigating Systems Cornerstone. Using the SDP Phase I worksheet in Inspection Manual Chapter 0609, Appendix A, the finding is of very low safety significance since the degraded connections were confirmed not to result in a loss of function per Generic Letter 91-18, Revision 1.

Inspection Report# : [2004004\(pdf\)](#)

**G**

**Significance:** Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Maintain Simulator with respect to Backup Seismic Alarm**

A noncited violation of 10 CFR 55.46 was identified by the inspectors for the failure to maintain the plant referenced simulator to respond to normal, transient and accident conditions. Pacific Gas and Electric Company removed from service, and abandoned the Backup Seismic System (Terra Tech Instrument) in place in June 2000. However, as of August 31, 2004, the plant referenced simulator still provided an annunciator fed from the backup seismic system when an earthquake of sufficient magnitude was felt. This provided operators with negative training in that operators were trained that the backup seismic system would provide annunciation and indication.

This finding affects the mitigating systems cornerstone and is greater than minor because it results in negative training of the operators to expect an annunciator from a backup seismic system in the event of an earthquake, if the earthquake force monitor was unavailable. Using the flow chart of Appendix I, of Inspection Manual Chapter 0609 of the Significance Determination Process, this issue affects operator actions in that operators may attempt to obtain ground motion from backup seismic monitors that did not exist. Per Inspection Manual Chapter 0609, Appendix I, Item 12, the inspectors determined that the finding was Green because the differences between the plant control room and the plant reference simulator negatively impacted operator actions and resulted in negative training.

Inspection Report# : [2004004\(pdf\)](#)

**G**

**Significance:** Jun 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

**Violation of T.S. 3.0.4 for changing modes with an AFW pump inoperable**

A self-revealing (Green) noncited violation of Technical Specification 3.0.4, was reviewed for entry into Mode 3 when the specified condition in the Technical Specification APPLICABILITY section was not met. Specifically, a transition from Mode 4 (Hot Shutdown) to Mode 3 (Hot Standby) was conducted with the Turbine-Driven auxiliary feedwater Pump 1-1 inoperable. Operators closed Valves LCV [level control valves]-106, -107, -108, and -109, the remote-manual isolation valves for auxiliary feedwater Pump 1-1 when entering Mode 5 on May 27, 2004. The valves were not reopened prior to entering Mode 3 on May 30. This condition existed for 21 hours. The valves were immediately opened when the condition was identified. A primary contributor to this issue involved human performance crosscutting aspects related to configuration control and control board awareness. Operators failed to track the status of these valves, and failed to perform an adequate review of system status during mode transition (Mode 4 to Mode 3) and shift turnovers.

This issue affects the mitigating systems cornerstone and is more than minor because it adversely affects the cornerstone objective of availability and reliability of a risk significant system auxiliary feedwater. Using the Phase 1 Significance Determination Process screening worksheet, the inspectors determined that the issue was of very low safety-significance (Green) because the time of inoperability (21 hours) was less than the 72 hours allowed in Technical Specification 3.7.5. Although auxiliary feedwater Pump 1-1 was inoperable per the Technical Specification, the pump was available for operators to manually initiate auxiliary feedwater if needed during a transient or accident. In addition, both 100 percent capacity motor-driven auxiliary feedwater pumps were also available if needed.

Inspection Report# : [2004003\(pdf\)](#)

**G**

**Significance:** Jun 25, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Design and Test Controls of the Diesel Emergency Generator Fuel Oil Level Control Valves**

The team identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, for the failure to maintain design control of the diesel emergency generator system fuel oil transfer system requirements. Specifically, the fuel supply to each diesel required that an adequate air supply to operate the air-operated day tank level control valve be maintained in the starting air receivers. The team identified that when the licensee recognized that this design basis was not documented, a calculation was performed to support creating the design basis which did not account for operational leakage from the system, nor did it verify that existing leakage would not prevent fulfilling the safety function. This failure potentially affected the ability of each diesel emergency generator to provide sufficient fuel oil to support 7 days of continuous diesel generator operations following a loss of offsite power. This issue was entered into the corrective action program under Action Request A0613008. This finding involved cross-cutting aspects in the area of problem identification and resolution because the original corrective actions did not correct the problem and properly establish the design basis.

This finding was greater than minor because it was similar to Example 3.i of Manual Chapter 0612, Appendix E. This finding affected the mitigating systems cornerstone. This finding was evaluated using NRC Manual Chapter 0609, Significance Determination Process, Phase 1 worksheet under the mitigating systems cornerstone. The finding was determined to be of very low safety significance because the deficiency was confirmed not to result in a loss of function of the diesel engine generator as a power source per Generic Letter 91-18, Revision 1. The licensee was able to demonstrate that compensatory measures were in place so that this function could be performed manually in a reliable manner because operators would receive a control room alarm which triggered implementation of proceduralized step to manually perform the function. The team confirmed that operators were trained to perform this action.

Inspection Report# : [2004006\(pdf\)](#)

**G**

**Significance:** Mar 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Adequately Address Loss of Diesel Fuel Oil Level in Priming Tank**

A noncited violation was identified by the inspectors for the failure to promptly address operability of Diesel Engine Generator 1-2 in accordance with 10 CFR Part 50, Appendix B, Criterion XVI. Specifically, Pacific Gas and Electric identified a leaking valve that could cause the loss of prime to the fuel oil booster pump, but failed to adequately address the operability of Diesel Engine Generator 1-2 with respect to the leak. The failure resulted in an additional challenge to operators approximately two months later.

The finding impacted the mitigating systems cornerstone for reliability of an emergency AC power source. The issue was more than minor since it affected the configuration control and procedure quality attributes for the mitigating system cornerstone. Using the significance determination process Phase 1 worksheet in Inspection Manual Chapter 0609, the inspectors determined that the deficiency was confirmed not to result in a loss of function per Generic Letter 91-18. The finding was determined to be of very low safety significance.

Inspection Report# : [2004002\(pdf\)](#)

**G****Significance:** Mar 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Translate Design Basis of Diesel Fuel Oil Storage Tank into Implementing Procedures**

A noncited violation of 10 CFR Part 50, Appendix B, Criterion III, was identified for the failure to translate the diesel emergency generator fuel oil usage design basis assumptions into procedures. Specifically, Calculation M-786 provided the basis for the Technical Specification minimum required volume of fuel oil in the fuel oil storage tanks to meet a 7 day fuel oil supply following a loss of offsite power for both units. The minimum volume was based on each unit operating only the minimum safety-related loads to achieve and maintain safe shutdown. However, the diesel engine generator minimum safety-related loads were not translated into procedures, nor were any instructions provided to alert operators to take actions to conserve fuel oil. With all six diesel engine generators running fully loaded there is insufficient fuel oil in the fuel oil storage tanks for 7 days of operation.

This issue affects the mitigating systems cornerstone objective to ensure the availability of onsite emergency AC power during the entire period described in the design basis. This issue is more than minor because it could have an actual impact on the ability of the diesel engine generators to mitigate a long-term loss of offsite power event. Using the Phase 1 significance determination process the inspectors determined that the issue was of very low safety-significance because the finding does not represent an actual loss of a safety system or a single train and did not meet the criteria for being risk significant because of an external event.

Inspection Report# : [2004002\(pdf\)](#)**G****Significance:** Mar 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Provide Adequate Procedures for Preventive Maintenance and Operation of Limitorque Motor-operated Valves in a Moist Environment**

A noncited violation with two examples was identified by the inspectors for the failure to assure activities affecting quality shall be accomplished in accordance with documented instructions, procedures, or drawings, as required by 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." Specifically, Pacific Gas and Electric failed to provide adequate procedures for preventive maintenance and operation of Limitorque motor-operated valves. The inadequate procedures resulted in the degraded operation of three Limitorque motor-operated valves in the auxiliary saltwater system during quarterly valve surveillance activities.

The performance deficiency associated with the finding is the failure to provide adequate instructions for preventive maintenance and operation of Limitorque motor-operated valves. The preventive maintenance aspect was evident with the Limitorque valves located in a moist environment. This finding impacted the mitigating systems cornerstone for the reliability of the auxiliary saltwater system that affects both shutdown and operating equipment. The finding is greater than minor because the finding would become a more significant safety concern if the problem was left uncorrected. Specifically, the problems of undiscovered rust formation on the valve declutch lever and the out-of-adjustment tripper fingers would continue to affect manual operation of the Limitorque valves and the ability to re-engage the motor operator. Using the SDP Phase 1 Worksheet in Inspection Manual Chapter 0609, the inspectors determined that this finding is of very low safety significance. Although operation of the three auxiliary salt water valves were degraded, the three motor-operated valves were available to perform their intended safety functions. The finding did not result in a loss of safety function or screen as potentially risk significant from the consideration of external event impacts.

Inspection Report# : [2004002\(pdf\)](#)**G****Significance:** Mar 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Control Placement of Temporary Equipment With Regards to Potential Seismic Impact on Safety-Related Systems**

A noncited violation of Technical Specification 5.4.1.a. was identified by the inspectors for the failure to adequately control the storage of temporary equipment that has a potential for seismically-induced system interaction with safety systems. Specifically, on March 18 and then on March 31, the inspectors identified an instance where transient equipment was stored in close proximity to safety systems and considered to be potential seismically-induced system interactions. On March 18, Pacific Gas and Electric identified two other instances where temporary equipment could cause a seismically-induce system interaction with safety systems. In each case the equipment was determined not to impact the functionality of the safety systems in the event of an earthquake.

The finding impacted the mitigating systems cornerstone for protection against external hazards. The issue was determined to be more than minor when compared to Example 4.a of Inspection Manual Chapter 0612, Appendix E. Similar to the example, the inspectors and Pacific Gas and Electric found four examples on the auxiliary building 140 ft. elevation where temporary equipment was stored contrary to procedures to protect safety-related systems from seismic impact. Using the Significance Determination Process Phase I worksheet in Inspection Manual Chapter 0609, Appendix A, the finding is of very low safety significance since it did not screen as potentially risk significant due to a seismic event. Specifically, the inspectors determined that the finding did not involve the loss or degradation of equipment or function specifically designed to mitigate a seismic event and it does not involve the total loss of any safety function with respect to a seismic event.

Inspection Report# : [2004002\(pdf\)](#)

## Barrier Integrity

**Significance:**  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Promptly Correct Containment Fan Cooler Unit Reverse Rotation**

The inspectors identified an NCV of 10 CFR Part 50, Appendix B, Criterion XVI, for the failure to promptly correct reverse rotation of containment fan cooler units (CFCUs) for both Units 1 and 2. PG&E observed reverse rotation of CFCUs for approximately 13 years, as a result of the CFCU backdraft dampers sticking partially open. The purpose of the backdraft dampers is to prevent reverse rotation of the CFCUs, which could cause the fan motor to trip on overcurrent when the CFCUs are started following a loss of coolant accident. Prior to Refueling Outage 2R12, 2 CFCUs in Unit 1 and 3 CFCUs in Unit 2 exhibited reverse rotation. One of the CFCUs in Unit 2 was considered inoperable due to reverse rotation and another was only considered operable if it was running.

The finding impacts the Barrier Integrity Cornerstone to provide reasonable assurance that physical design barriers protect the public from radio nuclide releases caused by accidents or events and is associated with the barrier performance attribute. The finding is more than minor when considering Example 3.g of IMC 0612, Appendix E. Similar to the example, PG&E observed reverse rotation of CFCUs for 13 years, and the reverse rotation impacted the operability of the CFCUs. Using the SDP Phase 1 Screening Worksheet from IMC 0609, the finding was determined to be of very low safety significance since it was determined that there was not an actual loss of defense-in-depth in containment pressure control or hydrogen control .

Inspection Report# : [2004005\(pdf\)](#)

**Significance:**  Sep 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Submit Change to the Emergency Plan with respect to Backup Seismic System**

A violation of 10CFR 50.54(q) was identified by the inspectors for failure to update and submit changes to the emergency plan within 30 days. Specifically, Section 7.5.1 of the Diablo Canyon Emergency Plan stated that a supplemental seismic system, supplied by Terra Tech Corporation, provided backup local indication and control room annunciation on strong ground motion. The Terra Tech system was removed from service, along with its annunciation in the control room, and abandoned in place in July of 2000, but as of September 30, 2004, Pacific Gas and Electric had not revised its emergency plan to reflect this change.

The finding was evaluated using NUREG-1600, "General Statement of Policy and Procedure for NRC Enforcement Actions," Section IV, because licensee reductions in the effectiveness of its emergency plan impact the regulatory process. The finding had greater than minor significance because deletion of conditions indicative of a site area emergency has the potential to impact safety. The finding was determined to be a noncited Severity Level IV violation because the finding involved a violation of a regulatory requirement and did not constitute a failure to meet an emergency planning standard as defined by 10 CFR 50.47(b). This finding has been entered into the licensee's corrective action program as Action Request A0618799.

Inspection Report# : [2004004\(pdf\)](#)

**Significance:**  Jun 30, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to take corrective actions for stuck open safety injection check valve**

A noncited violation of 10 CFR Part 50, Appendix B, Criterion XVI was identified by the NRC for failure to identify and correct a condition adverse to quality. Specifically, Pacific Gas and Electric Company failed to inspect and repair the corroded internals of Valve SI-1-8820 prior to changing operating modes. Safety injection check Valve SI-1-8820, listed in the Final Safety Analysis Report as the inboard containment isolation valve for the common high pressure injection header, was found stuck open during a back flow leak test. Pacific Gas and Electric Company mechanically agitated the valve to close it, but did not verify through testing that the valve would forward flow to meet its safety injection function or determine and correct the cause for the valve failing to close. A problem identification and resolution crosscutting aspect was identified for the failure to identify and correct the cause for the valve remaining open. Pacific Gas and Electric Company subsequently placed the unit into a condition that permitted repair of the valve and completed the back flow and forward testing.

This issue affects the barrier integrity cornerstone objective to ensure that systems penetrating the containment and are connected to the reactor coolant system have adequate isolation to protect the containment barrier. This issue is more than minor because it could have an actual impact on the ability to isolate a fault outside containment given a single failure. Using the Phase 1 Significance Determination Process screening worksheet the inspectors determined that the issue was of very low safety significance because the finding did not represent an actual open pathway in the physical containment.

Inspection Report# : [2004003\(pdf\)](#)

## Emergency Preparedness

**Significance:**  Dec 31, 2004

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Establish Compensatory Measures to Ensure the Implementation of the Diablo Canyon Emergency Plan**

The inspectors identified a violation of 10 CFR 50.54(q) and 50.47.b(4) for the failure to maintain the seismic force monitors during the periods, June 16-19, 1999, December 1-4, 2000, April 25-27, 2002, May 25-29, 2002, November 6-8, 2003, December 30-31, 2003, and August 9-10, 2004, such that the emergency plan designed to meet planning standard (4) in 10 CFR 50.47(b) could be promptly implemented.

Specifically, PG&E failed to provide a means for the emergency director to promptly classify seismic events at the notification of unusual event, alert or site area emergency levels, while the seismic force monitor utilized by the operators (emergency director) was out of service or being replaced. This finding had a human performance cross-cutting aspect associated with identifying compensatory measures to address the removal of the earthquake force monitors.

This performance deficiency impacted the emergency preparedness cornerstone because PG&E did not meet an emergency planning requirement and the cause was reasonably within PG&E 's control and should have been prevented. It is greater than minor because it has a potential to impact safety and because it was not a record keeping or administrative issue or an insignificant procedural error. This deficiency could have affected the EP Cornerstone objective of ensuring the capability to implement measures to protect the health and safety of the public during an emergency, and is associated with attributes of facilities and equipment, and offsite emergency preparedness. The finding is evaluated using the Emergency Preparedness "Failure to Comply" flowchart of the SDP and is a violation of 10 CFR 50.54(q) and planning standard 50.47(b)(4), which states, in part, that a standard emergency action level and classification system... is in use Utilizing the Failure to Comply Flow Chart in Manual Chapter 0609, the performance deficiency does not result in a failure of the risk significant planning standard (RSPS) or a degraded RSPS in that the unavailability of the seismic monitors would not prevent the declaration of a Site Area Emergency, Alert or Notification of Unusual Event .

Inspection Report# : [2004005\(pdf\)](#)

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## Occupational Radiation Safety

**Significance:**  Sep 30, 2004

Identified By: Self Disclosing

Item Type: NCV NonCited Violation

### **Two Examples of a Failure to Follow Radiation Work Permit Requirements**

The inspector reviewed two examples of a self-revealing noncited violation of Technical Specifications because Pacific Gas and Electric Company personnel failed to follow radiation work permit requirements. Specifically, all station radiation work permits required individuals to exit the area and return to access control when their personnel electronic dosimeter alarmed due to an accumulated dose. On April 8, 2004, a radiation worker failed to follow this requirement by not exiting containment and returning to access control when the radiation worker's personnel electronic dosimeter alarmed due to accumulated dose. A second example occurred on April 20, 2004, when a radiation protection technician responsible for controlling radiation exposure to a steam generator worker failed to instruct the worker to exit the area and return to access control when the worker's personnel electronic dosimeter alarmed on accumulated dose. In each case, the licensee returned to compliance when the workers exited the area and returned to access control. These two examples were entered into Pacific Gas and Electric Company's corrective action program as Action Request A0605254 and Action Request A0608007, respectively.

The failure to correctly respond to a personnel electronic dosimeter dose alarm as required by the radiation work permit is a violation of a Technical Specification 5.4.1. a. and is a performance deficiency. This finding is greater than minor because it affected the Occupational Radiation Safety cornerstone objective to ensure adequate protection of a worker's health and safety from exposure to radiation and is associated with the cornerstone attribute of Program and Process. When processed through the Occupational Radiation Safety Significance Determination Process, the finding was determined to be of very low safety significance because the finding was not associated with as low as is reasonably achievable planning or work controls, there was no overexposure or substantial potential for overexposure, and the ability to assess dose was not compromised. This finding also had crosscutting aspects associated with human performance.

Inspection Report# : [2004004\(pdf\)](#)

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## Public Radiation Safety

## Physical Protection

[Physical Protection](#) information not publicly available.

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## Miscellaneous

**Significance:** N/A Jun 25, 2004

Identified By: NRC

Item Type: FIN Finding

### **Problem Identification and Resolution**

The team concluded that the licensee was effective in identifying, evaluating, and correcting problems, although the team identified some examples where conditions adverse to quality were not properly entered into the Action Request system, allowing problem recurrence. The team found that the evaluation and prioritization of problems were mostly conducted properly, although some significant issues were identified as routine because the licensee's process assigned significance based on the actual consequences of problems, rather than considering the potential consequences under design basis conditions. Corrective actions were generally implemented in a timely manner. However, the team found weaknesses with the alignment of corrective actions with the cause, and with the quality of operability evaluations for issues assigned routine significance, because the licensee did not assign a probable cause statement to routine issues. Licensee audits and assessments were found to be responsive to plant performance issues and effective in identifying areas for improvement. During interviews, station personnel communicated a willingness to enter issues into the corrective action program. The team reviewed the licensee's improvement plans for significant cross-cutting issues in human performance and problem identification and resolution. Although it was too early to determine if these will be effective, the team noted that the Human Performance Improvement Plan did not address problems observed in coordinating and supervising operations during outages.

Inspection Report# : [2004006\(pdf\)](#)

Last modified : March 09, 2005