UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

February 6, 2009

John T. Conway
Senior Vice President and Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 3
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Avila Beach, California 93424

Subject: DIABLO CANYON POWER PLANT - NRC INTEGRATED INSPECTION REPORT 05000275/2008005, 05000323/2008005 AND 07200026/2008001

Dear Mr. Conway:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant. The enclosed integrated inspection report documents the inspection findings, which were discussed on January 5, 2009, with Mr. James Becker, Site Vice President and other members of your staff.

The inspections examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC-identified finding and two NRC-identified noncited violations of very low safety significance (Green). These findings were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they are entered into your corrective action program, the NRC is treating these findings as noncited violations, consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the violations or the significance of the noncited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd, Suite 400, Arlington, Texas, 76011-4125; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Diablo Canyon Power Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, and its enclosure, will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Vince G. Gaddy, Chief
Project Branch B
Division of Reactor Projects

Docket: 50-275
50-323
72-026

License: DPR-80
DPR-82
SNM-2511

Enclosure:

NRC Inspection Report 05000275/2008005, 0500323/2008005 and 07200026/2008001
w/Attachment: Supplemental Information

cc w/Enclosure:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000275, 05000323, 07200026
License:	DPR-80, DPR-82, SNM-2511
Report:	05000275/2008005 05000323/2008005 07200026/2008001
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, California
Dates:	October 1 through December 31, 2008
Inspectors:	M. Peck, Senior Resident Inspector M. Brown, Resident Inspector P. Elkmann, Senior Emergency Preparedness Inspector M. Runyan, Senior Reactor Analyst G. Guerra, Emergency Preparedness Inspector A. Fairbanks, Project Engineer, Branch D R. Kellar, ISFSI Inspector, Repository and Spent Fuel Safety Branch L. Ricketson, P.E., Senior Health Physics, Plant Support Branch 2
Approved By:	V. G Gaddy, Chief, Project Branch B Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000275/2008005, 05000323/2008005, 07200026/2008001; 10/1/2008 – 12/31/2008; Diablo Canyon Power Plant, Integrated Resident and Regional Report; Equipment Alignments; Identification and Resolution of Problems; Other Activities.

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by regional based inspectors. Two Green noncited violations and one Green finding of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criteria III, Design Control, after Pacific Gas and Electric failed to adequately translate the design basis for the 230 kV preferred offsite power system into specifications and procedures. Between November 3 and 7, 2008, the licensee operated with both units aligned to a single startup transformer. This created a situation where a dual unit trip or trip on one unit and accident on the other unit could result in loss of the preferred immediate offsite power source offsite power to both units.

  The finding is greater 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 used Inspection Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors concluded that the finding is a design deficiency that did result in loss of operability. However, the inspectors concluded the finding is of very low safety significance because the actual loss of safety function of the 230 kV offsite power system was less than the Technical Specification allowed outage time. The inspectors also concluded that the finding did not represent a loss of safety function for greater than 24 hours or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. The inspectors determined that 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 operability of the offsite power circuit prior to removing the Unit 2 startup transformer from service [P.1(c)]. (Section 4OA2.5.2)

- Green. The inspectors identified a finding after Pacific Gas and Electric was ineffective in addressing an adverse trend in missed quality control inspection

hold points. Licensee Procedure OM7, "Corrective Action Program," required that the licensee evaluate problems commensurate with their significance, determine the cause, and conduct a proper evaluation and resolution of repeat occurrences. The procedure further required that corrective actions are completed in a timely manner consistent with the problem significance. On May 19, 2007, Pacific Gas and Electric identified an adverse trend of missing quality control inspection hold points and requested that an apparent cause evaluation be performed. On July 11, 2007, this adverse trend was also evaluated by the Quality Verification Department as part of an assessment of Refueling Outage 14 maintenance. In March 2008, the licensee completed the evaluations and corrective actions. During the subsequent Unit 2 refueling outage, the Quality Verification Department identified over 11 additional missing quality inspection hold points. The inspectors identified that the licensee's corrective actions were ineffective to correct the adverse trend in missing quality control inspection hold points. Pacific Gas and Electric Company entered this finding into the corrective action program as Notification 50135175.

The finding was more than minor because, if left uncorrected, the failure to perform inspections has the potential to lead to a more significant safety concern. The inspectors used Inspection Manual Chapter 0609, Appendix A, "Determining the Significance of reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors concluded that this finding was of very low safety significance because the uncorrected adverse trend did not represent a loss of system safety function, the loss of safety function of a single train for greater than its Technical Specification allowed outage time, actual loss of safety function of one or more non-Technical Specification trains greater than 24 hours, or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating. The finding has a crosscutting aspect in the area of problem identification and resolution, associated with the corrective action program component, because the licensee failed to thoroughly evaluate the adverse trend and take corrective actions that addressed the cause and extent of condition [P.1(c)]. (Section 4OA2.5.1)

- Green. The inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after Pacific Gas and Electric failed to provide adequate design control measures for verifying the emergency diesel generators meet the design basis. The inspectors requested to review the design control measures that Pacific Gas and Electric maintained to demonstrate compliance with General Design Criteria 17, "Electric Power Systems," design basis. The licensee was not able to retrieve the requested design control measures for the onsite electrical power systems. The licensee provided unit specific diesel loading calculations. The inspectors identified that the licensee failed to include all design basis accidents, a single limiting failure, consider bus frequency and voltage fluctuations, motor starting currents, or manually initiated loads in the calculation. In response to the inspectors' observations, the licensee performed an operability evaluation. The inspectors reviewed the evaluation and concluded that the emergency diesel generators remained operable and capable of performing their intended safety function. The licensee has entered this issue into the corrective action program as Notification 50163396.

This finding is greater than minor because the design control attribute of the Mitigating Systems Cornerstone and the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences are affected. The inspectors used Inspection Manual Chapter 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors concluded the finding is of very low safety significance because the condition was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors did not assign a crosscutting aspect because the finding represented a latent design issue. Pacific Gas and Electric revised the calculations in September 2006 and did not have a recent opportunity to identify this issue. (Section 4OA5)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

At the beginning of the inspection period, Diablo Canyon Unit 1 and Unit 2 were operating at full power. On October 21, 2008, plant operators rapidly reduced Unit 2 power to 55 percent and manually tripped the reactor after the circulating water inlet screens became fouled with jellyfish. Plant operators also rapidly reduced Unit 1 from full to 50 percent power. On October 23, 2008, plant operators returned Unit 1 to full power. Plant operators restarted Unit 2 on October 23 and returned the unit to full power on October 25, 2008. The licensee operated both units at full power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness to Cope with External Flooding

a. Inspection Scope

On October 2, 2008, the inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood at the intake structure. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining, checked that the roofs did not contain obvious loose items that could clog drains in the event of heavy precipitation, and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site that would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. The inspectors also reviewed the abnormal operating procedure for mitigating the design basis flood to ensure it could be implemented as written. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one external flooding sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Partial Walkdowns

a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- Emergency Diesel Generator 2-3
- Turbine Drive Auxiliary Feedwater 2-1

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system; and therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, Updated Final Safety Analysis Report, Technical Specification requirements, administrative Technical Specifications, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two partial system walkdown samples as defined by Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 14, 2008, the inspectors performed a complete system alignment inspection of the 500 kV offsite electrical distribution system to verify the functional capability of the system. The inspectors selected this system because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one complete system walkdown sample as defined by Inspection Procedure 71111.04-05.

b. Findings

.1 Unresolved Item – 500 kilo-Volt Off-Site Power Source Compliance with General Design Criterion 17

Introduction. The inspectors identified an unresolved item related to the acceptability of the 500 kV offsite power source to meet General Design Criterion 17. Additional NRC review is needed to determine the acceptability of the assumed delay time needed to align the qualified off-site circuit to on-site safety related power distribution system.

Description. The 500 kV system provided the plant second Technical Specification required offsite power source. The 500 kV system is a delayed off-site source requiring the main generator disconnects to be removed before power can be back fed through the station service transformers to the safety related buses. During the initial NRC review of the system, PG&E stated that the 500 kV power source can be available by manual initiation in about 30 seconds. The NRC concluded (Safety Evaluation by The Directorate of Licensing U.S. Atomic Energy Commission in the Matter of Pacific Gas and Electric Company Diablo Canyon Nuclear Power Station, Units 1 And 2 San Luis Obispo County, California Docket Nos. 50-275 And 50-323) that the 500 kV off-site power source was acceptable because the circuits provided sufficient assurance that redundant and independent sources of offsite power are provided, as required by General Design Criterion 17. General Design Criterion 17 stated that the delayed power source must be available in sufficient time to assure that design conditions of the reactor coolant pressure boundary are not exceeded. In 1998, PG&E modified the Updated Final Safety Analysis Report to specify a 30-minute delay time before the 500 kV power source could be aligned to the safety related buses.

On July 31, 2008, the inspectors observed that licensed operators took about 40-minutes to complete the 500 kV back feed during plant simulator requalification training (Course R08, Lesson R082S2, “Loss of All Alternating Power and a Seismic Event”). A loss of reactor coolant pump seal injection and cooling is anticipated during the delay time. Based on information provided by NRC Information Notice 2005-14, “Fire Protection Findings on Loss of Seal Cooling to Westinghouse Reactor Coolant Pumps, “and Westinghouse Technical Bulletin, TB-04-22, “Reactor Coolant Pump Seal Performance, Appendix R Compliance and Loss of All Seal Cooling,” Revision 1, the inspectors estimated that about 12 gallons per minute of reactor coolant inventory would be lost through the reactor coolant pump seals during the first 8 minutes of the delay time. After 8 minutes reactor coolant leakage would increase to about 88 gallons per minute until seal injection could be reestablished. Based on the simulator response, the inspectors estimated that about 2,800 gallons of reactor coolant inventory would be lost through the reactor coolant pump seals, resulting in pressurizer level dropping below the indicating range during the delay time. The inspectors also anticipated a low pressurizer pressure safety injection accident signal to occur within the first 20 minutes due to the combination of the loss of reactor coolant and the inability to throttle turbine drive auxiliary feedwater flow to the steam generators.

On August 26, 2008, the inspectors requested the licensee provide the design measures demonstrating that the 500 kV power source met the General Design Criterion 17 design basis. On October 28, 2008 the licensee stated that the requested design basis was not retrievable. Plant engineers reevaluated the 500 kV off-site power system and concluded that General Design Criterion 17 compliance was demonstrated by a “road

map" of pre-existing analysis created to support other plant design basis. The "road map" included the assumption that no excessive loss of reactor coolant would occur due to reactor coolant pump seal leakage during the delay time. The inspectors determined that the licensee's assumption that the reactor coolant pump seals would remain intact during the delay time was incorrect. The licensee reevaluated the General Design Criterion 17 analyses with assumed reactor coolant pump leakage provided by the vendor. Pacific Gas and Electric again concluded that General Design Criterion 17 acceptance criteria were met because the reactor coolant system pressure and temperature would be maintained less than 110-percent of the of the design values during the delay time. The inspectors were unable to verify that the NRC had used 110-percent of the reactor coolant system design values as acceptance criteria for General Design Criterion 17 in the past.

This issue is unresolved pending NRC review of the General Design Criterion 17 acceptance criteria applied by PG&E and basis and verification of 30-minutes assumed for the delay time. Unresolved Item 05000275/2008005-01, 05000323/2008005-01, 500 kilo-Volt Off-Site Power Source Compliance with General Design Criterion 17.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

The inspectors conducted fire protection walkdowns that were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Fire Area 5-A-4, Unit 1 Auxiliary Building 100' Level, November 28, 2008
- Fire Area 5-B-4, Unit 2 Auxiliary Building 100' Level, November 28, 2008
- Fire Area 6-A-4, Unit 1 Auxiliary Building 115' Level, November 28, 2008
- Fire Area 6-B-4, Unit 2 Auxiliary Building 115' Level, November 28, 2008

The inspectors reviewed areas to assess if licensee personnel had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features, in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to affect equipment that could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of four quarterly fire-protection inspection samples as defined by Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, the flooding analysis, and plant procedures to assess seasonal susceptibilities involving internal flooding; reviewed the Updated Final Safety Analysis Report and corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; verified that operator actions in coping with flooding can reasonably achieve the desired outcomes; and walked down the one area listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers. Specific documents reviewed during this inspection are listed in the attachment.

- December 4, 2008, Unit 1, Residual heat removal pump rooms

These activities constitute completion of one internal flood protection measures inspection sample as defined by Inspection Procedure 71111.06-05.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

Annual Inspection

a. Inspection Scope

The inspectors used the annual inspection portion of this inspection procedure to review licensee programs, verified performance against industry standards, and reviewed critical operating parameters and maintenance records for the Unit 2 Component Cooling Water Heat Exchangers. The inspectors verified that performance tests were satisfactorily conducted for heat exchangers/heat sinks and reviewed for problems or errors; the licensee utilized the periodic maintenance method outlined in EPRI Report NP 7552, "Heat Exchanger Performance Monitoring Guidelines;" the licensee properly utilized biofouling controls; the licensee's heat exchanger inspections adequately assessed the state of cleanliness of their tubes; and the heat exchanger was correctly categorized under 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one annual heat sink inspection sample as defined by Inspection Procedure 71111.07-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

On November 4, 2008, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- Licensed operator performance
- Crew's clarity and formality of communications
- Crew's ability to take timely actions in the conservative direction
- Crew's prioritization, interpretation, and verification of annunciator alarms
- Crew's correct use and implementation of abnormal and emergency procedures
- Control board manipulations
- Oversight and direction from supervisors
- Crew's ability to identify and implement appropriate Technical Specification actions and emergency plan actions and notifications

The inspectors compared the crew's performance in these areas to pre-established operator action expectations and successful critical task completion requirements.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one quarterly licensed-operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk significant systems:

- Auxiliary feedwater, Notification 500034077
- Containment fan coolers, Notification 50044669

The inspectors independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- Implementing appropriate work practices
- Identifying and addressing common cause failures
- Scoping of systems in accordance with 10 CFR 50.65(b)
- Characterizing system reliability issues for performance
- Charging unavailability for performance
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or (a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed licensee personnel's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Technical Specification Tracking Sheet 2-TS-08-0053, Unit startup transformer and Diesel Generator 2-1 inoperable, October 21, 2008

- Risk Assessment No. 08-04, Revision 2, Risk evaluation for purging Unit 2 vent header with nitrogen to lower oxygen concentration, September 30, 2008

- Risk Assessment No. 08-05, Revision 0, Risk Evaluation for Scheduled Maintenance with Incomplete Surveillance Base Model Assumptions, October 2, 2008

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the Technical Specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three maintenance risk assessments and emergent work control inspection samples as defined by Inspection Procedure 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Notification 60009623, Unit 1, Residual Heat Removal Heat Exchanger Bypass Valve HCV-670 will not close, December 16, 2008

- Notification 50085862, Unit 2, 50083121, Unit 1 Startup Transformer, November 3, 2008

- Notification 50081758, Unit 1, Containment Atmosphere Particulate Radioactivity Monitor, October 26, 2008

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that Technical Specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the Technical Specifications and Updated Safety Analysis Report to the licensee’s evaluations, to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would

function as intended and were properly controlled. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of three operability evaluations inspection sample as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors reviewed the following temporary modifications to verify that the safety functions of important safety systems were not degraded:

- Alignment of Startup Bus-2-1 to Startup Transformer 1-1, November 3, 2008
- Installation of thermal wells in Component Cooling Heat Exchangers 1-1 and 1-2, December 16, 2008, A0603462

The inspectors reviewed the temporary modifications and the associated safety evaluation screenings against the system design bases documentation, including the Updated Final Safety Analysis Report and the Technical Specifications, and verified that the modification did not adversely affect the system operability/availability. The inspectors also verified that the installation and restoration was consistent with the modification documents and that configuration control was adequate. Additionally, the inspectors verified that the temporary modification was identified on control room drawings, appropriate tags were placed on the affected equipment, and licensee personnel evaluated the combined effects on mitigating systems and the integrity of radiological barriers.

These activities constitute completion of two samples for temporary plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the following postmaintenance activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- Safety Injection Pump 1-1, Order 64020660, November 26, 2008

- Auxiliary Building Ventilation Exhaust Fan E-1, Order 64008939, December 1, 2008

The inspectors selected these activities based upon the structure, system, or component's ability to affect risk. The inspectors evaluated these activities for the following:

- The effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed

- Acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate

The inspectors evaluated the activities against the Technical Specifications, the Updated Final Safety Analysis Report, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with postmaintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of two postmaintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities (71111.20)

a. Inspection Scope

The inspectors reviewed the outage safety plan and contingency plans for the October 21, 2008, Unit 2 forced outage. The inspectors confirmed that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

- Configuration management, including maintenance of defense-in-depth, is commensurate with the outage safety plan for key safety functions and compliance with the applicable Technical Specifications when taking equipment out of service.

- Clearance activities, including confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.

- Monitoring of decay heat removal processes, systems, and components.

- Controls over activities that could affect reactivity.
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the primary containment to verify that debris had not been left which could block emergency core cooling system suction strainers, and reactor physics testing.

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one refueling outage and other outage inspection sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the Updated Final Safety Analysis Report, procedure requirements, and Technical Specifications to ensure that the two surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to verify that the significant surveillance test attributes were adequate to address the following:

- Preconditioning
- Evaluation of testing impact on the plant
- Acceptance criteria
- Test equipment
- Procedures
- Jumper/lifted lead controls
- Test data
- Testing frequency and method demonstrated Technical Specification operability
- Test equipment removal
- Restoration of plant systems
- Fulfillment of ASME Code requirements
- Updating of performance indicator data
- Engineering evaluations, root causes, and bases for returning tested systems, structures, and components not meeting the test acceptance criteria were correct

- Reference setting data
- Annunciators and alarms setpoints.

The inspectors also verified that licensee personnel identified and implemented any needed corrective actions associated with the surveillance testing.

- October 21, 2008, Unit 2, Order 6400965, Routine surveillance of the 4kV vital Bus G Undervoltage Relay Calibration
- December 3, 2008, Unit 1, Order 64003350, Inservice test of motor-driven Auxiliary Feedwater Pump 1-2

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one routine surveillance and one in-service test samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2008 biennial emergency plan exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario simulated significant weather-related challenges within the emergency planning zone, physical damage to fuel rods from loose parts in the reactor, failures of an electrical bus and diesel generator, failure of an electrical cross-tie breaker, fission product barrier failures, core damage, and a radiological release to the environment from a steam generator tube rupture with open safety valve, to demonstrate the licensee's capabilities to implement the emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of event classification, offsite notification, recognition of offsite dose consequences, and development of protective action recommendations, in the simulator control room and the following dedicated emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility
- Joint Media Center

The inspectors also assessed recognition of, and response to, abnormal and emergency plant conditions, the transfer of decision making authority and emergency function responsibilities between facilities, onsite and offsite communications, protection of emergency workers, emergency repair evaluation and capability, and the overall implementation of the emergency plan to protect public health and safety and the

environment. The inspectors reviewed the current revision of the facility emergency plan, emergency plan implementing procedures associated with operation of the licensee's emergency response facilities, procedures for the performance of associated emergency functions, and other documents as listed in the attachment to this report.

The inspectors compared the observed exercise performance with the requirements in the facility emergency plan, 10 CFR 50.47(b), 10 CFR Part 50, Appendix E, and with the guidance in the emergency plan implementing procedures and other federal guidance.

The inspectors attended the post-exercise critiques in the Technical Support Center, Operations Support Center, and Emergency Operations Facility, to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended a subsequent formal presentation of the licensee's exercise critique to plant management. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.01-05.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational and Public Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess licensee personnel's performance in implementing physical and administrative controls for airborne radioactivity areas, radiation areas, high radiation areas, and worker adherence to these controls. The inspectors used the requirements in 10 CFR Part 20, the Technical Specifications, and the licensee's procedures required by Technical Specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed independent radiation dose rate measurements and reviewed the following items:

- Controls (surveys, posting, and barricades) of radiation, high radiation, or airborne radioactivity areas
- Barrier integrity and performance of engineering controls in airborne radioactivity areas
- Adequacy of the licensee's internal dose assessment for any actual internal exposure greater than 50 millirem committed effective dose equivalent
- Self-assessments, audits, licensee event reports, and special reports related to the access control program since the last inspection
- Corrective action documents related to access controls

- Dosimetry placement in high radiation work areas with significant dose rate gradients
- Posting and locking of entrances to all accessible high dose rate - high radiation areas and very high radiation areas

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of 7 of the required 21 samples as defined in Inspection Procedure 71121.01-05.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee personnel's performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable. The inspectors used the requirements in 10 CFR Part 20 and the licensee's procedures required by Technical Specifications as criteria for determining compliance. The inspectors interviewed licensee personnel and reviewed the following:

- Current 3-year rolling average collective exposure
- Site-specific trends in collective exposures, plant historical data, and source-term measurements
- Site-specific ALARA procedures
- Four work activities of highest exposure significance completed during the last outage
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Dose rate reduction activities in work planning
- Post-job (work activity) reviews
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Exposure tracking system
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding

- Records detailing the historical trends and current status of tracked plant source terms and contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Corrective action documents related to the ALARA program and follow-up activities, such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of 11 of the required 15 samples and 4 of the optional samples as defined in Inspection Procedure 71121.02.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the 3rd Quarter 2008 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, “Performance Indicator Program.”

This review was performed as part of the inspectors’ normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Specific Activity performance indicator for Diablo Canyon Units 1 and 2 for the period from the third quarter 2007 through the third quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, “Regulatory Assessment Performance Indicator Guideline,” Revision 5, was used. The inspectors reviewed the licensee’s reactor coolant system chemistry samples, Technical Specification

requirements, issue reports, event reports and NRC integrated inspection reports for the period of July 2007 through July 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two reactor coolant system specific activity samples as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Leakage performance indicator for Diablo Canyon Units 1 and 2 for the period from the third quarter 2007 through the third quarter 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator logs, reactor coolant system leakage tracking data, issue reports, event reports and NRC integrated inspection reports for the period of July 2007 through July 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two reactor coolant system leakage samples as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.4 Drill and Exercise Performance

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicator of Drill and Exercise Performance for the period from July 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee Procedure AWP EP-01, "Emergency Preparedness Performance Indicators," Revisions 9, 10 and 11, were used. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and

the Nuclear Energy Institute guidance. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during pre-designated control room simulator training sessions, performance during the 2008 biennial exercise, and performance during other designated drills. The inspectors also performed Temporary Instruction 2515\175, "Emergency Response Organization, Drill and Exercise Performance Indicator Program Review." The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of one drill and exercise performance sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.5 Emergency Response Organization Drill Participation

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period from July 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee procedure AWP EP-01, "Emergency Preparedness Performance Indicators," Revisions 9, 10 and 11, were used. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee training and qualification records, drill participation records, and revisions of the licensee's roster of personnel assigned to key emergency response organization positions.

These activities constitute completion of one emergency response organization drill participation sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.6 Alert and Notification System

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period from July 2007 through September 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revisions 4 and 5, and licensee procedures AWP EP-01, "Emergency Preparedness Performance Indicators," Revisions 9, 10 and 11, and EP MT-43, "Early Warning System

Testing and Maintenance," Revision 9, were used. The inspector reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and the Nuclear Energy Institute guidance. Specifically, the inspector reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic silent and limited-cycle alert notification system operability tests.

These activities constitute completion of one alert and notification system sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.7 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences performance indicator for the second quarter of 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's assessment of the performance indicator for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's performance indicator data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas.

These activities constitute completion of the occupational radiological occurrences sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

.8 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences performance indicator for the second quarter of 2008. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment

Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent Technical Specifications/offsite dose calculation manual radiological effluent occurrences sample as defined by Inspection Procedure 71151-05.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness, Public Radiation Safety, Occupational Radiation Safety, and Physical Protection

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's corrective action program at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. The inspectors reviewed attributes that included: the complete and accurate identification of the problem; the timely correction, commensurate with the safety significance; the evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews; and the classification, prioritization, focus, and timeliness of corrective actions. Minor issues entered into the licensee's corrective action program because of the inspectors' observations are included in the attached list of documents reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure, they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of

items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

The inspectors performed these daily reviews as part of their daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues, but also considered the results of daily corrective action item screening discussed in Section 4OA2.2, above, licensee trending efforts, and licensee human performance results. The inspectors nominally considered the 6-month period of March 2008 through September 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

The inspectors also included issues documented outside the normal corrective action program in major equipment problem lists, repetitive and/or rework maintenance lists, departmental problem/challenges lists, system health reports, quality assurance audit/surveillance reports, self-assessment reports, and maintenance rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's corrective action program trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

Adverse Trend in Problem Evaluation

The inspectors identified an adverse trend in the licensee's ability to evaluate problems. The inspectors concluded that PG&E used less than adequate thoroughness when evaluating problems resulting in the failure to identify the extent of conditions; and in some cases, adverse affects on the operability of Technical Specification required equipment. This adverse trend began during the fourth quarter 2007 and continued through the fourth quarter 2008. Examples include:

- Inadequate 50.59 Evaluation for Unit 1 Containment Sump Modification, noncited violation discussed in Section 4OA2.2 of Inspection Report 05000275/2007005 and Action Request A07145625 (December 2007)

- Failed to perform an evaluation of the radiological conditions and the potential hazards during fuel pool activities, noncited violation discussed in Inspection Report 05000323/2008002 (February 2008)

- Inadequate evaluation of radiation monitoring system maintenance rule scoping, noncited violation discussed in Section 1R12 of Inspection Report 05000323/2007003 (June 2008)

- Failure to adequately evaluate a Part 21 notification, noncited violation discussed in Section 4OA2 of Inspection Report 05000323/2007003 (June 2008)

- Inadequate operability evaluation of reactor coolant leakage detection system, noncited violation discussed in Section 1R15, of Inspection Report 05000323/2007004 and Action Request A0737958 (August 2008)

- Failure to perform a safety assessment of an explosive and flammable gas in the Unit 2 Containment and Auxiliary Buildings, noncited violation described in Section 1R05 of Inspection Report 05000323/2008004 and Action Requests A0741069 A0735759, A0741963, A0741069, A0736236, A0741838, and A0741841 (July 2008)

- Failure to thoroughly evaluate adverse trends in control of radioactive and potentially contaminated material problems, noncited violation discussed in Section 4OA2 of Inspection Report 05000275/2008008 and Notification 50085121 (November 2008)

- Less than adequate evaluation of particulate radiation monitor operability as described in Notification 50081758 (November 2008)

- Failure to adequately evaluate 230 kV operability, noncited violation described in Section 40A2 of this report (November 2008)

- Less than adequate 50.59 evaluation the loss of feed water transient for require for Revision 18 of Update Final Safety Analysis Report in Notification 50087051 (October 2007 and November 2008)

- Inadequate evaluation of the loss of design control for the 500 kV offsite power source, unresolved item described in Section 1R04 of this report (October 2008)

Adverse Trend in Design Margin and Capability of AC Power Systems

The inspectors identified an adverse trend related to the availability, reliability, and capability of station AC power systems. The examples are related to the loss of design margin/control or poor material condition of the systems. The inspectors concluded that this trend could indicate the existence of a more significant safety because all three of the plant AC power systems were affected:

- Loss of design control for the 500 kV offsite power source, unresolved item in Section 1R04 of this report (October 2008)

- Inadequate design control and operability evaluation of 230 kV offsite power source, noncited violation discussed as described in Section 40A2 of this report (November 2008)

- Inadequate design control for emergency diesel generator loading, noncited violation discussed as described in Section 40A5 of this report (November 2008)

- Catastrophic failure of a main (500 kV) transformer, as described in Section 40A3 of this report and Licensee Event Report 05000323/2008-001-00 (August 2008)

- Arcing on Startup Transformer 1-1 air switch, Notification 50041476 (September 2008)

- Failure of 12 kV startup bus feeder breaker, Notification 5003800 (November 2008)

- Failure of 12 kV startup bus feeder breaker, Notification 50167655 (January 2009)

- Auxiliary Transformer 2-2 Radiator Oil Leak, Action Request A0714727 (December 2007)

- Startup Transformer 1-1 Radiator Corrosion and Oil Leak, Action Request A0725374 (March 2008)

- Emergency Diesel Generator 1-1 Engine Oil Leakage, Action Request A0731511 (June 2008)

- Emergency Diesel Generator 2-1 Engine Oil Leakage, Action Request A0732161 (June 2008)

These activities constitute completion of one single semi-annual trend inspection sample as defined in Inspection Procedure 71152-05.

b. Findings

No findings of significance were identified.

.4 Annual Sample Review

a. Inspection Scope

The inspectors reviewed three previous drill and exercise scenarios, nine drill and exercise evaluation reports, and a summary of emergency response organization corrective actions (Action Requests) for the period from January 2007 through September 2008, to identify emergency response organization weakness and deficiencies and performance issues. The inspectors observed the October 29, 2008, Biennial Exercise to verify the effectiveness of corrective actions for previously-identified emergency response organization weaknesses and performance issues.

b. Findings and Observations

No findings of significance were identified.

.5 Selected Issue Follow-up Inspection

a. Inspection Scope

- During a review of items entered in the licensee's corrective action program, the inspectors recognized a corrective action item documenting missed quality control inspection hold points, Notification 50042222, ACTCMP Work Orders – Verify QV Sign-off, September 25, 2008

- Notifications 500083121and 5008680, Standby Start-Up Transformer 21

These activities constitute completion of two in-depth problem identification and resolution sample as defined in Inspection Procedure 71152-05.

b. Findings

.1 Failure to Implement Effective Actions to Correct an Adverse Trend

Introduction. The inspectors identified a Green finding after PG&E failed to implement effective actions to address an adverse trend in missed quality control inspection hold points.

Description. The inspectors identified that the licensee's actions to address an adverse trend to perform quality control inspections was not effective. Procedure OM7, "Corrective Action Program," required that the licensee evaluate problems commensurate with their significance, determine their cause, and conduct a proper evaluation and resolution of repeat occurrences. 10 CFR Part 50, Appendix B, Criteria X, "Inspection," required that "examinations, measurements, or tests of material or products processed be performed for each work operation where necessary to assure quality." On May 19, 2007, PG&E identified an adverse trend associated with missing quality control inspection hold points and requested that an apparent cause evaluation be performed (Action Request A0697535). On July 11, 2007, this issue was again addressed by the Quality Verification Department during an assessment of Refueling Outage 14 maintenance. In this assessment, Quality Verification identified over 22 missing quality control hold points associated with the Unit 1 Containment Recirculation Sump Modification project. During the third quarter of 2007, Quality Verification Department identified that the apparent cause evaluation had not been completed and requested that the apparent cause evaluation be completed. The evaluation and associated corrective actions were completed during March 2008. Subsequently, the Quality Verification Department identified over 11 new missing inspection hold points during the Unit 2 refueling outage during the first period 2008 quality performance assessment report.

The inspectors identified several deficiencies with licensee's evaluation of the problem. The problem statement addressed global missing hold points while the corrective actions focused on the containment sump project. As a result, the extent of condition did not address the affect on other modification projects. Also, the apparent cause evaluation did not include a historical search for earlier examples of missing inspection hold points and evaluate the effectiveness of past corrective actions. As a result, the extent of condition and corrective actions were limited. For example, the inspectors identified Action Request A0622011 dated October 29, 2004, which provides a description of a missing hold point associated with feedwater piping replacement.

Analysis. The inspectors concluded that the failure of PG&E to follow the requirements of its corrective action program was a performance deficiency. This finding affected the Mitigating Systems Cornerstone. The finding was more than minor because, if left uncorrected, the failure to perform inspections has the potential to lead to a more significant safety concern. The inspectors used Inspection Manual Chapter 0609, Appendix A, "Determining the Significance of reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors concluded that this finding was of very low safety significance because the uncorrected adverse trend did

not represent a loss of system safety function, the loss of safety function of a single train for greater than its Technical Specification allowed outage time, actual loss of safety function of one or more non-Technical Specification trains greater than 24 hours, or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating. The finding has a crosscutting aspect in the area of problem identification and resolution, associated with the corrective action program component, because the licensee failed to thoroughly evaluate the adverse trend and take corrective actions that addressed the cause and extent of condition [P.1(c)].

Enforcement. Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The licensee entered this finding into the corrective action program as Notification 50135175. Because the finding does not involve a violation of regulatory requirements and has very low safety significance, it is identified as: Finding (FIN) 05000275/2008005-02; 05000323/2008005-02, Failure to Implement Effective Actions to Correct an Identified Adverse Trend.

.2 Operation of the 230 kV Offsite Power System Outside the Design Basis

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criteria III, Design Control, after PG&E failed to adequately translate regulatory requirements and the design basis for the 230 kV preferred offsite power system into specifications and procedures. Between November 3 and 7, 2008, PG&E operated Unit 1 and Unit 2 in a condition that could have resulted in electrical loading in excess of the 230 kV preferred offsite source capability.

Description. The inspectors identified that PG&E operated both reactor units in a condition outside the 230 kV electrical system design basis. The Diablo Canyon preferred access offsite power circuit is supplied to each unit vital buses through a dedicated startup transformer and bus. The plant design basis, provided in Updated Final Safety Analysis Report Section 8.2, “Offsite Power Systems,” stated that the immediate access offsite power circuit conformed to IEEE Std 308-1971, “Class IE Electrical Systems.” IEEE 308-1971, Section 8, “Multi-Unit Station Considerations,” stated that the preferred capability must be sufficient to operate the engineering safety features for a design basis accident on one unit and concurrent safe shutdown on the remaining units. The type of accident and shutdown and the unit assumed to have the accident, shall be those which give the largest total preferred capability requirements. Also, Updated Final Safety Analysis report Section 3.1.2.4, “Criterion 4 - Sharing of Systems”, stated that reactor facilities shall not share systems or components unless it is shown safety is not impaired by the sharing.

On November 3, 2008 PG&E removed the Unit 2 startup transformer from service for planned maintenance. The licensee aligned power to the Unit 2 Startup Bus from the Unit 1 Startup Bus. In this configuration, both unit startup buses shared power through the Unit 1 startup transformer. PG&E translated the 230 kV offsite power design basis into plant specifications through a dynamic electrical analyses, Calculation 357AA-DC (September 24, 2007). The inspectors concluded that Calculation 357AA-DC did not evaluate the largest total preferred capability loading with both units sharing a startup transformer. The dynamic electrical analyses did not model the loading for either an accident on one unit coincident with a reactor trip on the other, or a reactor trip on both units. Pacific Gas and Electric subsequently analyzed the dynamic loading for the design cases and concluded that 4,160 Class 1E vital bus voltages would drop below

the degraded voltage set points and result in the loss of 230 kV offsite power in worst case conditions. Pacific Gas and Electric also analyzed cases based on actual available 230 kV switch yard voltages between November 3 and 7, 2008. For these cases, the licensee concluded that 4,160 Class 1E vital bus voltages would intermediately drop below the degraded voltage set points. The inspectors concluded that 230 kV offsite power would become inoperable when predicted dynamic voltages would drop below the degraded voltage set points.

The inspectors concluded that the most significant contributor to the finding was the failure of PG&E to adequately evaluate the operability of 230 kV offsite power source prior to removing Startup Transformer 2-1 from service. On November 3, 2008 plant operators questioned the operability of Startup Bus 2-1 after removing the startup transformer from service. Plant operators stated that the Basis for Technical Specification 3.8.1, "AC Sources – Operating," stated that the Unit 2 offsite circuit included Startup Transformer 2-1. The operators' concern was entered into the Corrective Action Program as Notification 50083121. PG&E evaluated the problem and concluded that Technical Speciation Basis should be revised to specify acceptability of sharing of startup transformers and buses between the units.

Analysis. The 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 licensee's failure to ensure offsite power operability before sharing the Unit 1 startup transformer between units for four days was a performance deficiency. This created a situation where a dual unit trip or trip on one unit and an accident on the other unit could result in loss of offsite power to both units from the preferred immediate offsite power source. The inspectors used Inspection Manual Chapter 0609, Appendix A, "Determining the Significance of reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors determined that the finding is a design deficiency that did result in loss of operability. The inspectors concluded the finding is of very low safety significance because the actual loss of safety function of the 230 kV offsite power was less than the Technical Specification allowed outage time. The inspectors also concluded that the finding did not represent a loss of safety function for greater than 24 hours or screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event. This finding had a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because PG&E did not thoroughly evaluate the operability of the offsite power circuit prior to removing the Startup Transformer 2-1 from service [P.1.(c)].

Enforcement. Title 10 CFR Part 50, Appendix B, Criteria III, Design Control, required that PG&E to establish measures to assure that applicable regulatory requirements and the design basis be correctly translated into specifications. The 230 kV design basis was provided in Updated Final Safety Analysis Report Section 8.2 and IEEE 308-1971. IEEE 308-1971, Section 8, stated that the preferred capability must be sufficient to operate the engineering safety features for a design basis accident on one unit and concurrent safe shutdown on the remaining units. The type of accident and shutdown and the unit assumed to have the accident, shall be those which give the largest total preferred capability requirements. Contrary to the above, the licensee did not ensure that the largest total preferred capability requirements could be met between November 3 and 7, 2008. Because this finding is of very low safety significance and was entered

into the corrective action program as Notification 50085862, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000275/2008005-03; 05000323/2008005-03, Operation of the 230 kV Offsite Power System Outside the Design Basis.

4OA3 Event Follow-up (71153)

.1 (Closed) Licensee Event Report 05000275/2008-001-00, Potential Accumulator Drain Line Actuation Following an SBLOCA Due to Solenoid Valve Failure

On June 11, 2008, PG&E identified a potential solenoid valve failure mechanism that could initiate draining of the safety injection system accumulators following a small break loss-of-coolant accident. The issue was discovered by plant engineers while reviewing the extent of condition following a solenoid valve failure in April 2008. The licensee took immediate corrective actions to close the manual isolation valves to the accumulator drain lines and restore Technical Specification. This Licensee Event Report was reviewed during the Biennial Problem Identification and Resolution inspection completed during this quarter and documented in Inspection Report 05000275/2008008; 05000323/2008008. No violation of NRC requirements was identified. This Licensee Event Report is closed.

.2 (Closed) Licensee Event Report 05000323/2008-001-00, Reactor Trip Due to Main Transformer Failure

On August 17, 2008, PG&E declared a Notice of Unusual Event following a fire in the Unit 2 main transformer and reactor trip. The inspectors reviewed operator actions taken in accordance with licensee procedures and reviewed unit and system indications to verify that actions and system responses were as expected. The licensee concluded the event was due to a catastrophic failure of the main electrical transformer "C" phase high voltage bushing. The inspectors reviewed the root cause analysis as well as industry and station operating experience regarding main transformer issues. The inspectors also reviewed the adequacy of the station's proposed corrective actions. No violation of NRC requirements was identified. This Licensee Event Report is closed.

.3 (Closed) Licensee Event Report 05000275/2008-002-00, Technical Specification 3.4.15 Violation Due to Lack of Bases Clarity

On August 13, 2008 the inspectors concluded that the Unit 1 containment atmosphere gaseous radioactivity monitor was not capable of performing the specified safety function to detect reactor coolant leakage. The licensee subsequently declared the leak detector inoperable and began using the alterative method to satisfy plant Technical Specification requirements. This issue was a disposition of a violation of Technical Specification 3.4.15 discussed in Section 1R15 of Inspection Report 05000275/2008004, "Inadequate Operability Evaluation of Reactor Coolant Leakage Detection System." No additional violations of NRC requirements were identified. This Licensee Event Report is closed.

.4 (Closed) Licensee Event Report 05000323/2008-002-00, Manual Reactor Trip Due to Pacific Ocean Circulating Water System Debris

On October 21, 2008, plant operators manually tripped the Unit 2 reactor from 55 percent power after a large influx of jellyfish blocked the plant condenser water inlet. PG&E is currently evaluating predictive methodologies and equipment changes to improve managing ocean debris. No violation of NRC requirements was identified. This Licensee Event Report is closed

.5 (Closed) Unresolved Item 05000323/2008004-04, Unit 2 Main Transformer Fire

On August 17, 2008, the inspectors responded to a declaration of a Notice of Unusual Event by PG&E following a fire in the Unit 2 main transformer. The inspectors reviewed operator actions taken in accordance with licensee procedures and reviewed unit and system indications to verify that actions and system responses were as expected. The licensee concluded the event was due to a catastrophic failure of the main electrical transformer "C" phase high voltage bushing. The inspectors reviewed the root cause analysis as well as industry and station operating experience regarding main transformer issues. The inspectors also reviewed the adequacy of the licensee's proposed corrective actions. No violation of NRC requirements was identified. This Unresolved Item is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors performed observations of security force personnel and activities to ensure that the activities were consistent with Diablo Canyon Power Plant security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 Preoperational Testing of Independent Spent Fuel Storage Facility Installations at Operating Plants (60854.1)

a. Inspection Scope

The inspectors observed installation activities associated with the new overhead crane trolley. The licensee was in the process of implementing design change packages for the new trolley and upgrades to the fuel handling building structure at the time of the inspection. Documentation associated with the new crane trolley and the fuel handling building upgrades were reviewed by the inspectors.

The new trolley was supplied by P&H, which contained a single-failure-proof main hoist rated at 125 tons and a non-single-failure-proof auxiliary hoist rated at 15 tons. The

crane vendor had prepared a Safety Analysis Report containing a matrix which detailed how the new trolley and overhead crane met the requirements specified in NUREG 0554, “Single Failure Proof Cranes for Nuclear Power Plants.”

The building modifications included removing two of the four building partitions, upgrading a portion of the bolted connections from A325 to A490 bolts, performing a reanalysis of selected bolted connections and utilizing torque limiters on the trolley/bridge to limit movement during seismic events.

Before returning the overhead crane to service, ASME B30.2, “Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist),” specified that a rated load test and a functional test be conducted for the modified auxiliary and main hoists. A rated load test of the auxiliary hoist using a test weight of 18.5 tons was conducted on October 7, 2008. A rated load test of the main hoist using a test weight of 154.3 tons was conducted on October 24, 2008. Following the rated load tests a functional test of the crane was performed. The weights used for the rated load tests were within the ASME B30.2 Code interpretation, which suggested a tolerance of plus 0 percent and minus 4 percent of the specified 125 percent test load. The licensee had verified the weights used to perform the load test using a calibrated load cell. The NRC resident inspectors witnessed the load tests of the auxiliary and main hoists.

The licensee had not completed all of the documentation associated with the new crane trolley and hoist at the time of the inspection. The remaining tests and crane documentation will be reviewed by the NRC prior to the use of the crane for movement of the casks containing spent fuel.

b. Findings

No findings of significance were identified.

.3 Implementation of Temporary Instruction 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

a. Inspection Scope

The objective of Temporary Instruction 2515/176 was to gather information to assess the adequacy of nuclear power plant emergency diesel generator endurance and margin testing as prescribed in plant-specific Technical Specifications. The inspectors reviewed the licensee's Technical Specifications, procedures, and calculations and interviewed licensee personnel to complete the TI. The information gathered while completing this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” after PG&E failed to provide adequate design control measures for verifying the adequacy of the emergency diesel generators to meet the design basis.

Description. The inspectors identified that PG&E failed to maintain adequate design control measures for the onsite emergency diesel generators. Updated Final Safety Analysis Report Section 3.1.8.3, “Criterion 39 - Emergency Power for Engineered Safety Features” stated that Diablo Canyon Power Plant conforms to 10 CFR Part 50, Appendix A, General Design Criteria 17, “Electric Power Systems.” General Design Criteria 17 required, in part, that the onsite electric power system shall provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. General Design Criteria 17 also stated, “The onsite electric power supplies, including the batteries, and the onsite electric distribution system, shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.”

The inspectors requested that PG&E provide documentation demonstrating that the emergency diesel generator design was in compliance with General Design Criteria 17. Pacific Gas and Electric provided Calculations 15-DC, “Diesel Generator Loading for 4160V Vital Bus Loads, U1” and 125-DC, “Diesel Generator Loading for 4160V Vital Bus Loads, U2,” which are referenced in Updated Final Safety Analysis Report Section 8.3.1.1.10, “Emergency Load Supplied by Diesel Generators.” The calculations summarized the steady state electrical loading following a loss of coolant accident with or without a safety injection signal. The inspectors identified Calculation 15-DC was inadequate because:

1. The licensee did not analyze for all postulated accidents as required by General Design Criteria 17.

2. The licensee did not assume a single limiting failure as required by General Design Criteria 17.

3. The licensee did not analyze the frequency and voltage variations allowed by Technical Specification 3.8.1.

4. The licensee did not incorporate momentary loads, consisting of transient inrush currents, relay and solenoid short-time currents, motor starting currents and loading for motor-operated valves. As stated in the Updated Final Safety Analysis Report, “These loads are within the short-time capability of the electric power systems and the engine generators.” When the inspectors requested the analyses to support that statement, it could not be provided.

5. The licensee did not include any manually initiated loads that may be required during accident response.

In response to the inspectors’ observations, the licensee performed an operability evaluation as documented in Notification 50179082. The inspectors reviewed the evaluation and concluded that the emergency diesel generators remained operable and capable of performing their intended safety function.

Analysis. The inspectors concluded that the failure of PG&E to implement adequate design control measures for verifying the adequacy of design of the emergency diesel generators was a performance deficiency. This finding is greater than minor because it was associated with the design control 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, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," to analyze the significance of this finding. The inspectors concluded the finding is of very low safety significance because the condition was a design or qualification deficiency confirmed not to result in loss of operability or functionality. The inspectors did not assign a crosscutting aspect because the finding represented a latent design issue. PG&E revised the calculations in September 2006 and did not have a recent opportunity to identify this issue.

Enforcement. Title of the Code of Federal Regulations, Part 50, Appendix B, Criteria III, "Design Control," required that PG&E establish measures to assure that applicable regulatory requirements and the design basis be correctly translated into specifications and that design control measures be provided for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program. Contrary to the above, PG&E did not establish measures to assure that applicable regulatory requirements and the design basis of the onsite emergency diesel generators were translated into specifications, and failed to ensure that the design was verified. Because this finding is of very low safety significance and was entered into the corrective action program as Notification 50163396, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000275/2008005-04; 05000323/2008005-04, Inadequate Design Control for the Emergency Diesel Generator.

4OA6 Meetings

Exit Meeting Summary

On October 31, 2008, the inspectors presented the results of the on-site inspection of the biennial Emergency Preparedness Exercise to Mr. J. Becker, Site Vice President, and other members of his staff, who acknowledged the findings. The inspectors confirmed that proprietary, sensitive, or personal information examined during the inspection had been returned to their identified custodians.

On November 6, 2008, the inspectors conducted a telephonic conference with Mr. M. Persky, Manager, Emergency Preparedness, to discuss the NRC's characterization of one drill evaluation issue.

On November 6, 2008, the inspectors presented the occupational and public radiation safety inspection results to Mr. J. Welsch, Director, Operation Services, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 5, 2009, the inspectors presented the inspection results to Mr. J. Becker, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Becker, Site Vice President
J. Fledderman, Director, Strategic Projects
J. Ferguson, ALARA Team Leader, Radiation Protection
R. Gray, Engineer, Radiation Protection
W. Gulemond, Director, Site Services
C. Harbor, Director, Maintenance
W. Hendy, Manager, Operations Training
R. Hite, Manager, Radiation Protection
S. Ketelsen, Manager, Regulatory Services
T. King, Director, Outage Management
M. McCoy, NRC Interface, Regulatory Services
M. Meko, Director, Site Services
M. Persky, Manager, Emergency Preparedness
K. Peters, Station Director
P. Resler, Director, Communications
M. Somerville, Manager, Radiation Protection
T. Swartzbaush, Manager, Operations
J. Welsch, Director, Operations Services

Federal Emergency Management Agency

H. Sherwood, Chairman, Regional Assistance Committee, Region IX
R. Echavarria, Senior Technical Specialist

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000275; 05000323/ 2008005-01	URI	500 kV Offsite Power Source Compliance With General Design Criterion 17

Opened and Closed

05000275; 05000323/ 2008005-03	NCV	Operation of 230 kV Offsite Power System Outside the Design Basis (Section 4OA2.5.2)
05000275; 05000323/ 2008005-02	FIN	Failure to Implement Effective Actions to Correct an Adverse Trend (Section 4OA2.5.1)

05000275; 05000323/ 2008005-04	NCV	Inadequate Design Control for the Emergency Diesel Generator (Section 4OA5.3)

Closed

05000275/2008-001-00	LER	Potential Accumulator Drain Line Actuation Following an SBLOCA Due to Solenoid Valve Failure
05000323/2008-001-00	LER	Reactor Trip Due to Main Transformer Failure
05000275/2008-002-00	LER	Technical Specification 3.4.15 Violation Due to Lack of Bases Clarity
05000323/2008-002-00	LER	Manual Reactor Trip Due to Pacific Ocean Circulating Water System Debris
05000323/2008004-04	URI	Unit 2 Main Transformer Fire

LIST OF DOCUMENTS REVIEWED

Section 1RO1: Adverse Weather Protection

PROCEDURES

NUMBER	TITLE	REVISION / DATE
OP O-28	Intake Management	10
CPM-5	Response to Tsunami Warning	14
OP O-28	Intake Management	10
STP M-90B	Annual Surveillance of Diablo Canyon Breakwaters	3

Section 1RO4: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION / DATE
TS3.ID2	Licensing Basis Impact Evaluations	22
PGE-94-526	Westinghouse Letter	
NSD-TB-93-01-R0	Westinghouse Technical Bulletin	R0
PGE-93-516	Westinghouse Letter	
A0639938	Evaluated NRC IN 05-14	June 2005
WCAP-10541	Reactor Coolant Pump Seal Performance Following a Loss of All AC Power	November 1986
CN-TA-87-59	Diablo Canyon – Vantage 5 – Loss of Flow and Locked Rotor	September 1987
CN-TA-94-209	Diablo Canyon Reduced AFW Flow	
WCAP 16638-P	Diablo Canyon Units 1 and 2 Replacement Steam Generator Program Licensing Report	R0

NOTIFICATIONS

NUMBER	TITLE	REVISION / DATE
50080640	NRC Question on RSG Loss of Feed Analysis	10/17/2008

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
LBIE 2007-013	RSG Component Modification	10/12/2007

Section 1RO5: Fire Protection

DRAWINGS

NUMBER	TITLE	REVISION / DATE
111906, Sheet 19	Auxiliary Building 100’	1
111906, Sheet 21	Auxiliary Building 115’	1

Section 1R06: Flood Protection Measures

ACTION REQUESTS

A0720403

Section 1RO7: Heat Sink Performance

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
PEP M-234	CCW Heat exchanger Performance Test	9
R0286060	Unit 2 CCW Heat Exchanger Performance Test	1/9/2008
Report 420DCC.08.10	Applied Technology Services, CCW 2-1 and 2-2 Heat Exchanger Test Pre-2R14	February 2008
R0314533	Clean and inspect CCW Heat Hx 2-1	11/25/2008

Section 1R11: Licensed Operator Requalification Program

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
Lesson FRS1-A	Simulator Event Sequence	17

Section 1R12: Maintenance Effectiveness

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
	Maintenance Rule Expert Panel Meeting 153 Minutes	10/15/2008
	Maintenance Rule Expert Meeting 154 Minutes	11/20/2008

PROCEDURES

NUMBER	TITLE	REVISION / DATE
MA1.1D17	Maintenance Rule Monitoring Program	27

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	REVISION / DATE
AD7	Work Control	3
AD7.1D4	Online Maintenance	13
MA1.DC11	Risk Assessment	8

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION / DATE
OM7.D12	Operability Determinations	12
MA1.DC11	Risk Assessment	8

Section 1R18: Plant Modifications

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
60003695	Work Order - Install Temporary Modifications to Support CCW Hx Performance Test	0
1C15-D-17-190	CCW Hx 1-1	0
CF4.ID7	Temporary Alteration	20

ACTION REQUEST

A0595660

Section 1R19: Postmaintenance Testing

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
STP P-SIP-11	Routine Surveillance Test of Safety Injection Pump 1-1	20
MP M-23.4	Preventive Maintenance of Plant Ventilation Fans, Associated Dampers and Filters	33

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

NUMBER	TITLE	REVISION / DATE
AD8.DC59	Forced Outage and Curtailment Readiness	2

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION / DATE
STP P-AFW-12	Routine Surveillance Test of Motor-Driven Auxiliary Feedwater Pump 1-2	16
STP M-75	4kV vital Bus G Undervoltage Relay Calibration	29A

ACTION REQUESTS

A0622011	A0697535	A0718705	A0720120	A0728389

Section 1EP1: Exercise Evaluation

DOCUMENTS

NUMBER	TITLE	REVISION / DATE
EP EF-1	Activation and Operation of the Technical Support Center	28
EP EF-2	Activation and Operation of the Operations Support Center	35
EP EF-3	Activation and Operation of the Emergency Operations Facility	31
EP G-1	Emergency Classification and Emergency Plan Activation	37
EP G-3	Emergency Notification of Off-Site Agencies	50
EP R-2	Release of Airborne Radioactive Materials, Initial Assessment	26
EP RB-2	Emergency Exposure Guides	5
EP RB-3	Stable Iodine Thyroid Blocking	5
EP RB-10	Protective Action Recommendations	13
OM10.DC1	Emergency Preparedness Drills and Exercises	4
	Drill Evaluation Report for March 7, 2007	
	Drill Evaluation Report for June 8, 2007	

Drill Evaluation Report for June 27 and July 25, 2007

Drill Evaluation Report for September 18, 2007

Drill Evaluation Report for May 7, 2008

Drill Evaluation Report for May 28, 2008

Drill Evaluation Report for August 13, 2008

Drill Evaluation Report for September 24, 2008

Event Summary Report for July 21, 2008

Event Summary Report for August 17, 2008

Narrative Summary for December 8, 2004 Exercise

Narrative Summary for October 25, 2006 Exercise

ACTION REQUESTS

A0688840	A0707917	A0730350	A0737022	A0741975
A0703887	A0708249	A0736861	A0737998	A0709932
A0706843	A0730300			

Section 2OS1: Access Controls to Radiologically Significant Areas

PROCEDURES

NUMBER	TITLE	REVISION / DATE
RCP D-220	Control of Access to High, Locked High, and Very High Radiation Areas	35
RCP D-240	Radiological Posting	18
RCP D-370	Evaluation of Internal Deposition of Radioactive Material	10

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

2008 Radiation Protection Program and Solid Radioactive Waste Management (Process Control) and Transportation Program

ACTION REQUESTS

A0706806	A0719215	A0721942	DN50038164	DN50042988
A0716272	A0720834	A0725156	DN50038282	
A0718724	A0721867	A0741068	DN50038649	

SAMPLE RESULTS AND SURVEYS

SURVEYS

Unit 1-01482

Unit 2-03690

MISCELLANEOUS

Assessment of Internal Dose 11/04/08 (two examples)

RADIATION WORK PERMITS, IN-PROGRESS REVIEWS, POST-JOB REVIEWS

NUMBER	TITLE
08-2020	2R14 Reactor Disassembly
08-2027	2R14 Reactor Reassembly
08-2102	2R14 SGR Scaffold Support
08-2145	2R14 SGRP Secondary Side Activities (non RCS)

PROCEDURES

NUMBER	TITLE	REVISION / DATE
RCP D-200	Writing Radiation Work Permits and ALARA Planning	42
RP1.ID1	Requirements for the ALARA Program	4
RP1.ID2	Use and Control of Temporary Radiation Shielding	8
RP1.ID9	Radiation Work Permits	9

MISCELLANEOUS

DCPP Unit 2 – 2R14 Steam Generator Replacement Report

DCPP Unit 2 2R14 Alpha Characterization Report

2R14 Dose Estimate by RWP

Section 4OA1: Performance Indicator Verification

PROCEDURES

NUMBER	TITLE	REVISION / DATE
EP G-1	Emergency Classification and Emergency Plan Activation	37
EP G-3	Emergency Notification of Off-Site Agencies	50
EP R-2	Release of Airborne Radioactive Materials, Initial Assessment	26
EP RB-10	Protective Action Recommendations	13

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Diablo Canyon Nuclear Generating Station Emergency Plan	4

Section 4OA2: Identification and Resolution of Problems

ACTION REQUESTS

A0622011	A0697535	A0718705	A0720120	A0728389
A0651651	A0713327	A0719159	A0725626	A0729253
A0695220	A0718675	A0719605	A0727669	A0738988
A0697493				

NOTIFICATIONS

50034201	50040387	50042222	50043855	50084093

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
	Nuclear Safety Oversight Committee Meeting Minutes	6/29/2007
	Quality Performance Assessment Report Second Period 2007	8/21/2007
	Quality Performance Assessment Report Third Period 2007	1/7/2008
	Quality Performance Assessment Report First Period 2008	5/15/2008
	Quality Performance Assessment Report Second Period 2008	10/6/2008
	Quality Verification Memorandum	7/11/2007
	Quality Verification Memorandum	9/26/2007
N0002222	Maintenance Work-Package Documentation Deficiencies	4/15/2008
OM7	Corrective Action Program	4
OM7.1D4	Apparent Cause Evaluations	13

Section 4OA3: Event Follow-Up

ACTION REQUESTS

A0565195 A0699348 A0738064 A0739025

Section 4OA5: Other Activities – Operations of an ISFSI

Design Change Packages

NUMBER	TITLE	REVISION
DCP M-49774	Fuel Handling Building Crane Single-Failure-Proof Upgrade	1
DCP M-49774	Attachment A, Safety Analysis Report for P&H SUPERSAFE^{TM} Single Failure Proof Diablo Canyon Fuel Handling Crane	1
DCP C-49916	Modifications to Fuel Handling Building Superstructure	0
	LBIE Screen for DCP M-49774	1

Licensing Basis Impact Evaluations

NUMBER	TITLE	REVISION
LBIE 2008-022	CDM T-3 & FSAR Change Request for FHBSS Bolts	5D

WORK ORDERS

NUMBER	TITLE	REVISION / DATE
WO 60005143	Perform ASME NOG Load Test	10/3/2008
WO R0276073	Perform load test and post-load test inspection	10/6/2008

Section 4OA5: Other Activities – TI 2515/176 – Emergency Diesel Generator Technical Specification Surveillance Requirements Regarding Endurance and Margin Testing

PROCEDURES

NUMBER	TITLE	REVISION
STP M-9G	Diesel Generator 24-Hour Load Test and Hot Restart Test	41
STP M-9M	Verification of Auto-Connected Loads Less Than 2750KW	16

CALCULATIONS

NUMBER	TITLE	REVISION / DATE
15-DC	Diesel Generator Loading for 4160V Vital Bus Loads, U1	19
125-DC	Diesel Generator Loading for 4160V Vital Bus Loads, U2	13

ACTION REQUESTS

A0263649	A0601794	A0604668	A0725552	A0739396
A0503812	A0601807	A0609799		