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NUCLEAR REGULATORY COMMISSION
REGION IV
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May 1, 2008

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SUBJECT: DIABLO CANYON POWER PLANT - NRC INTEGRATED INSPECTION
REPORT 05000275/2008002 AND 05000323/2008002

Dear Mr. Conway:

On March 31, 2008, the U.S. Nuclear Regulatory Commission completed an inspection at your Diablo Canyon Power Plant, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings that were discussed on April 1, 2008, with Mr. James Becker and members of your staff.

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

Based on the results of this inspection, three NRC-identified findings of very low safety significance (Green) were identified in this report. These findings involved violations of NRC requirements. However, because of their very low risk significance and because they are entered into your corrective action program, the NRC is treating these three findings as noncited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCV in this report, 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, DC 20555-0001; with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Diablo Canyon Power Plant.

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Sincerely,

/RA/

Vince G. Gaddy, Chief
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Dockets: 50-275

50-323

Licenses: DPR-80

DPR-82

Enclosure:

NRC Inspection Report 05000275/2008002

and 05000323/2008002

w/attachment: Supplemental Information

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SUNSI Review Completed: yes ADAMS: ☐ Yes ☐ No Initials: VGG
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Dockets: 50-275, 50-323

Licenses: DPR-80, DPR-82

Report: 05000275/2008002
05000323/2008002

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Power Plant, Units 1 and 2

Location: 7½ miles NW of Avila Beach
Avila Beach, California

Dates: January 1 through March 31, 2008

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Approved By: V. Gaddy, Chief, Projects Branch B
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SUMMARY OF FINDINGS

IR 05000275/2008002, 05000323/2008002; 1/1 - 3/31/08; Diablo Canyon Power Plant, Units 1 and 2; Fire Protection, Maintenance Effectiveness, and Occupational Radiation Safety.

This report covered a 13-week period of inspection by resident inspectors and announced inspections in radiation protection. Three NRC-identified, Green, noncited violations 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 and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. On February 17, 2008, the inspectors identified a noncited violation of Technical Specification 5.4.1.d, "Fire Protection Program," after Pacific Gas and Electric failed to maintain the integrity of an auxiliary building fire door. The inspectors identified that the latching mechanism on Fire Door 348 was degraded and not engaged. The unlatched fire door resulted in a reduction in fire confinement capability. The door was required to provide a 1½-hour fire barrier between two plant fire areas. The licensee had several prior opportunities to identify the degraded fire door. Security and operations personnel passed through the affected fire area several times each day.

This finding is greater than minor because the degraded fire barrier affected the mitigating systems cornerstone external factors attribute objective to prevent undesirable consequences due to fire. Using Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," the inspectors determined this finding is within the fire confinement category and the fire barrier was moderately degraded because the door latch was not functional. The inspectors concluded that this finding is of very low safety significance because a non-degraded automatic full area water based fire suppression system was in place in the exposing fire area. This finding was entered into the corrective action program as Action Request A0719774. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because plant personnel did not maintain a low threshold for identifying issues. [P.1(a)] (Section 1R05)

- Green. The inspectors identified a noncited violation of 10 CFR 50.65(a)(2), after Pacific Gas and Electric Company failed to effectively control performance monitoring of the Unit 2 containment atmosphere particulate radiation monitor through appropriate preventive maintenance. Eight functional failures of the radiation monitor occurred between November 2006 and January 2008. The

licensee did not categorize any of these failures as Maintenance Rule functional failures.

This finding is greater than minor because it is associated with the mitigating systems cornerstone attribute of equipment performance and it affects the cornerstone objective to ensure the availability, reliability, and capability of the systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1, Appendix A. The inspectors determined that this finding was of very low safety significance because this is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a crosscutting aspect in the area of human performance associated with the work practices component because engineering staff failed to follow the November 2006 revision to the licensee maintenance rule procedure that would have required each failure to be counted as a maintenance rule functional failure. Engineering staff incorrectly concluded that the revision was not applicable to the radiation monitors and therefore did not implement the change [H.4(b)] (Section 1R12).

Cornerstone: Occupational Radiation Safety

- Green. The inspectors identified a noncited violation of Technical Specification 5.4.1 for failure to follow a licensee procedure. Specifically, while touring the Unit 2 spent fuel pool on February 13, 2008, the inspectors observed workers performing fuel inspections on the fuel bridge. The inspectors noted that the physical location of a continuous air monitor, an AMS-4, was in the southeast corner of the floor. Ventilation flow in this area was north to south with negative ventilation centered on the spent fuel pool. Section 2.2 of Procedure RCP D-430 states, in part, the purpose of the continuous air monitors was to alert personnel to changes in radiological conditions and that locations are selected based on their potential as contributors to airborne activity. The location of the continuous air monitor was not appropriate to alert the workers of changing radiological conditions. During review of this occurrence, the inspectors were made aware of a similar issue. Specifically, Action Request A0666110 was opened on May 3, 2006, to evaluate the adequacy of AMS-4 placement in the fuel building during fuel moves. This action request was currently open with a resolution date of December 15, 2008.

This finding is greater than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, in that the failure to monitor for radioactive material in the air had the potential to increase personnel dose. This occurrence involves workers unplanned, unintended or potential for such dose; therefore, this finding was evaluated using the occupational radiation safety significance determination process. The inspectors determined that this finding was of very low safety significance because it did not involve: (1) an as low as is reasonably achievable planning or work control issue; (2) an overexposure; (3) a substantial potential for overexposure; or (4) an impaired ability to assess dose. This finding also has a crosscutting aspect in the area of problem identification and resolution, corrective

action component, because the licensee failed to take timely corrective actions to address safety issues. P.1(d)] (Section 2OS1)

REPORT DETAILS

Summary of Plant Status

Pacific Gas and Electric Company (PG&E) was operating Diablo Canyon Unit 1 and Unit 2 at full power at the beginning of the inspection period. On January 5, 2008, the licensee reduced both units to 55 percent power in response to condenser fouling resulting from high sea swells. On January 6, plant operators returned both units to full power and subsequently reduced Unit 1 to 50 percent power following high circulating water pump bearing temperature. On January 7, plant operators returned Unit 1 to full power after repairing a failed bearing temperature sensor. PG&E shut down Unit 2 on February 3 for refueling and steam generator replacement. Unit 2 remained down for the remainder of the inspection period.

1. REACTOR SAFETY

Initiating Events, Mitigating Systems, Barrier Integrity, and Emergency Preparedness

1R01 Adverse Weather (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of PG&E preparations for seasonal susceptibilities involving high wind and heavy rains on January 3, 2008. The inspectors completed this review to verify that the plant's design features and procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Final Safety Analysis Report (FSAR) and performance requirements for systems selected for inspection and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes one seasonal readiness preparations sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

.2 Readiness for Bio-fouling Concerns

a. Inspection Scope

During the week of January 1, 2008, the inspectors observed licensee activities associated with expected condenser and ultimate heat sink heat exchanger fouling resulting from high sea swells. The inspectors observed pre-job briefings, pre-shift briefings and control room briefings to determine whether the briefings met licensee standards. The inspectors reviewed Procedure OP O-28, "Intake Management," Revision 10, to verify reactor power reduction prerequisites were met. Finally, during the remainder of the inspection period, the inspectors periodically reviewed licensee activities and data collection as specified by licensee procedures to determine whether increasing condenser circulation water pressure was properly monitored. The inspectors also reviewed corrective action program items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures.

This inspection constitutes one readiness for imminent adverse weather condition sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- Unit 2, Spent fuel pool cooling system during core offload, February 14, 2008
- Unit 1, Component cooling water pump and heat Exchanger 1-1, March 21, 2008

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 impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, FSAR, 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 were 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 two partial system walkdown samples as defined by Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On January 22, 2008, the inspectors performed a complete system alignment inspection of the Unit 2 high head injection system to verify the functional capability of the system. This system was selected 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 alignment, 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. A review of a sample of past and outstanding work orders was performed 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. The documents used for the walkdown and issue review are listed in the attachment.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

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

- Fire Area 8-A, Unit 1, Computer room, January 15, 2008
- Fire Area 8-D, Unit 2, Computer room, January 15, 2008
- Fire Area 14-D, Unit 1, 140' Turbine deck, January 15, 2008
- Fire Area 19-D, Unit 2, 140' Turbine deck, January 15, 2008

- Fire Area 22-C, Unit 2, Diesel generator corridor, January 29, 2008
- Fire Area 24-D, Unit 2, Excitation switchgear room, January 29, 2008
- Fire Area 3-X, Auxiliary building 100 foot level, February 10, 2008
- Fire Area 3-T-2, Unit 2, Motor-driven auxiliary feed pump, February 10, 2008
- Fire Area 3-BB, Unit 1, Containment penetration room, February 17, 2008

The inspectors reviewed areas to assess if the licensee 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 impact equipment which 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 nine quarterly fire protection inspection samples as defined by Inspection Procedure 71111.05-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.4.1.d, "Fire Protection Program," after PG&E failed to maintain the integrity of an auxiliary building fire door.

Description. On February 17, 2008, the inspectors identified a noncited violation of Technical Specification 5.4.1.d, "Fire Protection Program," after PG&E failed to maintain the integrity of an auxiliary building fire door. The inspectors identified that the latching mechanism on Fire Door 348 was not engaged. The degraded door latch resulted in a reduction in the confinement capability of the fire barrier. The door was required to provide a 1½-hour fire barrier between Fire Areas 3-BB and 3-AA. The licensee had several opportunities to identify the degraded fire door. Security personnel passed into the affected fire area at least three times each day and operations personnel passed through the fire area at least once each shift. Procedure OM8.ID2, "Fire System Impairment," Revision 13, required plant personnel to notify the operations shift foreman and ensure an action request is generated after discovering a fire protection system impairment. The inspectors verified that licensee personnel had neither communicated to the operations shift foreman nor had an action request been generated for the degraded fire door. The inspectors previously identified that the latches on Fire Doors 258-2, 174-A, and 350-2 were degraded on February 10, 2008. The failure of licensee personnel to identify these degraded fire doors was entered into the corrective action program as Action Requests A0718944, A0718946, and A0718947.

Analysis. The failure of PG&E to maintain the integrity of Fire Door 348 is a performance deficiency. This finding is more than minor because the degraded fire barrier affected the mitigating systems cornerstone external factors attribute objective to prevent undesirable consequences due to fire. The inspectors used the Inspection Manual Chapter 0609, Appendix F, "Fire Protection Significance Determination Process," to analyze this finding. The inspectors determined this finding was a fire confinement category and that the fire barrier was moderately degraded because the door latch was not functional. The inspectors concluded that this finding is of very low safety significance because a non-degraded automatic full area water based fire suppression system was in place in the exposing fire area. This finding has a crosscutting aspect in the area of problem identification and resolution associated with the corrective action program component because plant personnel did not maintain a low threshold for identifying issues [P.1(a)].

Enforcement. Technical Specification 5.4.1.d required that PG&E implement a Fire Protection Program. The Fire Protection Program requirements, as described by FSAR Appendix 9.5a, Fire Hazards Analysis, required that Fire Door 348 be maintained as a fire area boundary. Contrary to the above, on February 17, 2008, the inspectors identified that plant personnel failed to maintain Fire Door 348 as a fire boundary. Because this finding is of very low safety significance and was entered into the corrective action program as Action Request A0719774, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000275/2008002-01, Failure to Identify a Degraded Fire Barrier.

1R08 Inservice Inspection Activities (71111.08)

02.01 Inspection Activities Other Than Steam Generator Tube Inspection, PWR Vessel Upper Head Penetration Inspections, Boric Acid Corrosion Control

a. Inspection Scope

The inspection procedure requires review of two or three types of nondestructive examination (NDE) activities and, if performed, one to three welds on the reactor coolant system pressure boundary. Also review one or two examinations with recordable indications that have been accepted by the licensee for continued service. In addition the inspectors also reviewed welding and NDE activities associated with the steam generator replacement to fulfill the inspection requirements of Inspection Procedure 50001, "Steam Generator Replacement Inspection."

The inspectors directly observed the following nondestructive examinations:

<u>System</u>	<u>Identification</u>	<u>Exam Type</u>	<u>Result</u>
Pressurizer Surge	WIB-438-439 O.L.	PT	No Relevant Indications
Pressurizer Spray	WIB-345-346 O.L.	UT	No Relevant Indications

Main Steam	2-K15-228-28V Hanger 2020-1V	VT-3	No Relevant Indications
Main Steam	2-K15-228-28 Attachment 2020-1V (6 lugs)	MT	No Relevant Indications
Reactor Pressure Vessel Upper Head	Vent line	ET	No relevant indications
Chemical & Volume Control System	Pipe Weld 2033-1	UT	No relevant indications

The inspectors reviewed records for the following nondestructive examinations:

<u>System</u>	<u>Identification</u>	<u>Exam Type</u>	<u>Result</u>
Pressurizer Safety B Nozzle (WOR)	WIB-422A-423 O.L.	UT and PT	No Relevant indications
Pressurizer Spray Line Nozzle	WIB-345-346 O.L.	PT	No Relevant Indications
Reactor Pressure Vessel Upper Head	CRDMs 6,10, 14, 15, 18, 22, 23, 30, 31, 32, 37, 38, 42, 43, 51, 54, 55, 56, 62	Bare Metal Visual Remote, robotic camera	No Relevant indications
Reactor Pressure Vessel Upper Head	CRDM 19,33,39,58	UT, ET	No relevant indications
Steam Generator 2-4 Feedwater Line	FW-4 and FW-4R1	RT	No Relevant Indications
Reactor Coolant System Hot Leg Outlet Nozzle	WIB-RC-2-1 (SE) Dissimilar Metal Weld	UT	No Relevant Indications
Reactor Coolant System Cold Leg Inlet Nozzle	WIB-RC-3-16 (SE) Dissimilar Metal Weld	UT	No Relevant Indications

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements and applicable procedures. Indications were compared with previous examinations and dispositioned in accordance with ASME Code and approved procedures. The qualifications of all nondestructive examination technicians performing the inspections were verified to be current.

No NDE examinations with relevant indications were accepted by the licensee for continued service.

Three examples of welding on the reactor coolant system pressure boundary and one example of welding on the chemical and volume control system were examined through direct observation and/or record review as follows:

<u>System</u>	<u>Component/Weld Identification</u>
Chemical & Volume Control System	Charging Pump 2-2, discharge line pipe-to-fitting Weld 7
Reactor Coolant System	Pressurizer Safety Valve "B" Nozzle WOL
Reactor Coolant System	Pressurizer Spray Line/WIB-345-346 WOL
Reactor Coolant System	Pressurizer Surge Line/WIB-438-439 WOL

Welding procedures and nondestructive examination of the welding repair conformed to ASME Code requirements and licensee requirements.

The inspectors verified, by review, that the welding procedure specifications and the welders had been properly qualified in accordance with ASME Code, Section IX, requirements. The inspectors also verified, through observation and record review, that essential variables for the gas tungsten arc welding process (machine and manual) and the shielded metal arc welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications.

The inspectors completed one sample under Section 02.01.

b. Findings

No findings of significance were identified.

02.02 Vessel Upper Head Penetration (VUHP) Inspection Activities

a. Inspection Scope

The licensee performed NDE of 100 percent of reactor vessel upper head penetrations. The inspector directly observed a sample consisting of the examinations listed below:

<u>System</u>	<u>Component ID</u>	<u>Examination Method</u>	<u>Result</u>
VUHP	Vent Line	ET	No relevant indications

The inspectors reviewed the following sample of examinations in which indications were observed, evaluated and determined not to be relevant indications using stored electronic data or review of printed records:

<u>System</u>	<u>Component ID</u>	<u>Examination Method</u>	<u>Result</u>
VUHP	CRDM 19,33,39,58	UT,ET	No relevant indications

The NDE inspections were performed in accordance with the requirements of NRC Order EA-03-009. Qualifications of NDE personnel were reviewed and verified to be current.

The inspectors completed one sample under Section 02.02.

b. Findings

No findings of significance were identified.

02.03 Boric Acid Corrosion Control Inspection Activities

a. Inspection Scope

The inspectors observed a sample of boric acid corrosion control inspection activities and verified that visual inspections emphasized locations where boric acid leaks can cause degradation of safety significant components.

The inspectors also reviewed one instance where boric acid deposits were found on reactor coolant system piping components:

<u>Component Number</u>	<u>Description</u>	<u>Action Request</u>
CVCS-2-8148	Boric acid deposits on 1 of 6 body-to-bonnet studs and nuts	A070014

The condition of all the components was appropriately entered into the licensee's corrective action program, and corrective actions taken were consistent with ASME code requirements. An engineering evaluation was conducted and the affected nut and stud were removed and examined. The bolting material is stainless steel and is not susceptible to corrosion from boric acid solution. No evidence of wastage, corrosion or damage was found, and the bolting was returned to service.

The inspectors completed one sample under Section 02.03.

b. Findings

No findings of significance were identified.

02.04 Steam Generator Tube Inspection Activities

a. Inspection Scope

Unit 2 steam generators were replaced during this outage and steam generator tubes were not inspected.

b. Findings

No findings of significance were identified.

02.05 Identification and Resolution of Problems

a. Inspection Scope

The inspection procedure requires review of a sample of problems associated with inservice inspections documented by the licensee in the corrective action program for appropriateness of the corrective actions.

The inspectors reviewed 17 corrective action reports which dealt with inservice inspection activities and found the corrective actions were appropriate. Action requests reviewed are listed in the documents reviewed section. From this review the inspectors concluded that the licensee has an appropriate threshold for entering issues into the corrective action program and has procedures that direct a root cause evaluation when necessary. The licensee also has an effective program for applying industry operating experience.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On January 3, 2008, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification training 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;
- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;

- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate Technical Specification actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed by the inspectors included Instructor Lesson Guide R075S2, "2007 Continuing Operator Training," dated November 29, 2007.

This inspection constitutes 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)

Routine Quarterly Evaluations 71111.12Q

a. Inspection Scope

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

- Unit 2, Containment atmosphere particulate Radioactivity Monitor RM-11 paper drive assembly failures, January 22, 2008
- Unit 2, Component cooling water Valve CCW-2-695 local leak rate test failure, February 27, 2008

The inspectors reviewed events where ineffective equipment maintenance has resulted in valid or invalid automatic actuations of engineered safeguards systems and 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) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;

- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (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.

This inspection constitutes two quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

Introduction. The inspectors identified a Green noncited violation of 10 CFR 50.65(a)(2), after PG&E failed to effectively monitor performance of the Unit 2, containment atmosphere particulate radioactivity monitor through appropriate preventive maintenance.

Description. Eight functional failures of the Unit 2, containment atmosphere particulate radiation monitor occurred between November 2006 and January 2008. Each failure required entry into Technical Specification Action 3.4.15, "Reactor Coolant System Leakage Detection Instrumentation." The licensee did not consider any of the radiation monitor failures as Maintenance Rule functional failures. Beginning in November 2006, Procedure MA1.ID17, "Maintenance Rule Monitoring Program," required that the licensee declare a maintenance rule functional failure for failed scoped components that also required an unplanned entry into a Technical Specification action.

Technical Specification bases for 3.4.15 stated that reactor coolant leakage detection systems met Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems." Regulatory Guide 1.45 stated that the particulate radiation monitor provides a separate and diverse method for detection, classification, and location of reactor leakage throughout the plant operating cycle. The inspectors concluded that the numerous failures of the particulate radiation monitor should have been evaluated against the licensee's performance criteria and resulted in placement of system into Maintenance Rule (a)(1) status.

Analysis. The failure of PG&E to effectively control performance monitoring of the Unit 2, containment particulate radioactivity monitor in accordance with 10 CFR 50.65(a)(2) was a performance deficiency. This finding is more than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the significance of this finding using Inspection Manual Chapter 0609, "Significance Determination Process," Phase 1, Appendix A. The inspectors determined that this finding was of very low safety

significance (Green) because this finding is not a design or qualification deficiency, does not represent a loss of a system safety function or safety function of a single train, and does not screen as potentially risk significant due to external events. The inspectors also determined that this finding has a crosscutting aspect in the area of human performance associated with the work practices component because engineering staff failed to follow the November 2006 revision to the licensee maintenance rule procedure that would have required each failure to be counted as a maintenance rule functional failure. Engineering staff inaccurately concluded that the revision was not applicable to the radiation monitors and therefore did not implement the change [H.4(b)].

Enforcement. 10 CFR 50.65(a)(1), requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, systems, and components within the scope of the rule as defined by 10 CFR 50.65(b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that structures, systems, and components are capable of fulfilling their functions.

Paragraph (a)(2) of 10 CFR 50.65 states, in part, that monitoring as specified in 10 CFR 50.65(a)(1) is not required where it has been demonstrated that the performance or condition of an structures, systems, and components is effectively controlled through the performance of appropriate preventive maintenance such that the systems, structures, and components remains capable of performing its intended function.

Contrary to the above, PG&E did not demonstrate that the performance or condition of the Unit 2 containment atmosphere particulate radioactivity monitor had been effectively controlled through the performance of appropriate preventive maintenance and did not monitor against licensee-established goals. Specifically, repetitive failures associated with Unit 2 containment atmosphere particulate radioactivity monitor from November 2006 to January 2008 demonstrated that the Unit 2 containment atmosphere particulate radioactivity monitor performance was not being effectively controlled per 10 CFR 50.65(a)(2). Because this issue is of very low safety significance (Green) and is entered into PG&E's corrective action program as Action Request A0717009, this violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000275, 05000323/2008002-02, Failure to Demonstrate a Containment Atmosphere Particulate Radiation Monitor Performance was Effectively Controlled.

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

a. Inspection Scope

The inspectors reviewed the licensee'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 Sheet T0061921, Unit 1, Residual Heat Removal Pump 1-2 planned maintenance, January 9, 2008
- TSS T0062026, Unit 2, Trip risk during scaffolding construction, January 15, 2008

- TSS T0062095, Unit 1, Surveillance testing of excore instrumentation, January 30, 2008
- TSS T0062365, Unit 1, Failure of generator seal oil pump, February 26, 2008
- TSS T0062438, Unit 1, Phase duct cooler out of service for corrective maintenance, March 11, 2008
- TSS T0062492, Unit 1, Removal of Vital Battery Charger 1-1 for planned maintenance, March 24, 2008

These activities were selected based on their potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. 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 Technical Specification requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted six 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:

- Action Request A0687787, Units 1 and 2, Degraded seismic qualification of the fuel handling building, January 8, 2008
- Action Request A0714564, Unit 2, Degraded auxiliary building supply Fan S-46, January 16, 2008
- Action Request A0717989, Unit 2, High reactor coolant system radioiodine due to failed fuel, January 17, 2008
- Action Request A0717034, Unit 2, High motor current on containment fan cooling units, January 28, 2008

- Action Request A0717677, Unit 1, Component cooling water Pump 1-2 motor oil leak, January 30, 2008
- Action Request A0720656, Units 1 and 2, Cyclic fatigue of the emergency diesel generator fuel lines, March 8, 2008
- Action Request A0722963, Units 1 and 2, Emergency diesel generator tachometer failed to reset during power transfer, March 10, 2008
- Action Request A0721019, Unit 1, Emergency Diesel Generator 1-01 primary fuel filter leak, February 27, 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 FSAR 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.

This inspection constitutes eight samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- Design Change Package C-49857, Replacement of the containment recirculation sump strainer, Revision 1

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors

observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The modification increases the emergency core cooling recirculation sump net positive suction head in response to Generic Letter 2004-02, Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes one permanent modification sample as defined in Inspection Procedure 71111.18.

b. Findings

No findings of significance were identified.

.2 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- Action Request A0709926, Unit 2, Temporary modification to separate loose parts monitoring system common power supply as part of Unit 2, steam generator replacement project, January 23, 2008
- Action Request A0710453, Unit 2, Temporary modification to store and use selected materials inside Unit 2 containment during Modes 1-4 prior to the Unit 2 Refueling Outage 14 steam generator replacement, January 24, 2008

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information against the design basis, the FSAR, and the Technical Specifications, as applicable, to verify that the modification did not affect the operability or availability of the affected systems. The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes two temporary modification samples as defined in Inspection Procedure 71111.18.

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:

- Postmaintenance Test R0307896, Unit 2, Residual heat removal Pump 2-2 preventive maintenance, January 7, 2008
- Postmaintenance Test R0299924, Unit 1, Component cooling water Pump 1-1 preventive maintenance, January 22, 2008
- Postmaintenance Test R0308581, Unit 1, Auxiliary Feedwater Pump 1-1 preventive maintenance, January 31, 2008
- Postmaintenance Test C0217599, Unit 2, Containment Penetration 22 and 23 following repair of Valve CCW-2-695, February 23, 2008
- Postmaintenance Test WO R0270299, Unit 2, Containment Penetration 30 following repair of Valve CS-2-9011B, February 27, 2008
- Postmaintenance Test C0214829, Unit 2, Containment Penetration 50 following corrective maintenance, February 27, 2008
- Postmaintenance Test R0285525, Unit 1, Vital Battery Charger 1-1 preventative maintenance, March 26, 2008
- Postmaintenance Test C0219100, Unit 2, Vital 4kV Bus H relay troubleshooting and corrective maintenance, March 29, 2008

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): 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; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against Technical Specifications, the FSAR, 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.

This inspection constitutes eight samples as defined in Inspection Procedure 71111.19.

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 Unit 2, refueling outage, between February 3 and March 31, 2008, to confirm that the licensee 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 refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below. The inspectors also reviewed activities associated with the steam generator replacement to fulfill the inspection requirements of Inspection Procedure 50001, "Steam Generator Replacement Inspection."

- Licensee configuration management, including maintenance of defense-in-depth commensurate with the outage safety plan for key safety functions and compliance with the applicable Technical Specifications when taking equipment out of service
- Implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error
- Controls over the status and configuration of electrical systems to ensure that Technical Specifications and Outage Safety Plan requirements were met, and controls over switchyard activities
- Monitoring of decay heat removal processes, systems, and components
- Controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss
- Controls over activities that could affect reactivity
- Maintenance of secondary containment as required by Technical Specifications
- Refueling activities, including fuel handling and sipping to detect fuel assembly leakage

- Licensee identification and resolution of problems related to refueling outage activities

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

This inspection constitutes one refueling outage sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Routine Surveillance Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and Technical Specification requirements:

- Surveillance R0284198-01, Unit 1, Phase A slave relays, February 4, 2008
- Surveillance R0289352, Unit 2, Low temperature overpressure protection system, February 4, 2008
- Routine Unit 2, Shift checks required by licenses, February 6, 2008
- Surveillance R0311207, Unit 1, Auxiliary saltwater flow monitoring, February 11, 2008
- Surveillance R031125-01, Unit 1, Diesel generator, February 19, 2008
- Surveillance R0288943, Unit 2, 4kV Bus F auto-transfer, March 19, 2008

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left setpoints were within required ranges; the calibration frequency was in accordance with Technical Specifications, the FSAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met Technical Specification requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other

applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of the safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes six routine surveillance testing samples as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.2 Inservice Testing Surveillance

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and Technical Specification requirements:

- Surveillance R0309435, Unit 1, Turbine-driven auxiliary feedwater steam stop Valve FCV-95, January 31, 2008
- Surveillance R0286556, Unit 1, Steam supply to turbine-driven auxiliary feedwater turbine Valves FCV-37 and FCV-38, January 31, 2008
- Surveillance R0309344, Unit 1, Auxiliary feedwater pump discharge Valves LCV-106, 107, 108, and 109, January 31, 2008
- Surveillance R0308743-01, Auxiliary saltwater Pump 1-2 crosstie Valve FCV-495, February 11, 2008

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left set-points were within required ranges; and the calibration frequency was in accordance with

Technical Specifications, the FSAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met Technical Specification requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers Code, and reference values were consistent with the system design basis; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes four inservice inspection samples as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Leak Detection Inspection Surveillance

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and Technical Specifications requirements:

- Routine daily checks required by licensees, Unit 1, March 24, 2008

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left set-points were within required ranges; and the calibration frequency was in accordance with Technical Specifications, the FSAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test

procedures were satisfied; test frequencies met Technical Specifications requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes one reactor coolant system leak detection inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.4 Containment Isolation Valve Testing

a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and Technical Specification requirements:

- Local Leak Rate Test R0286798, Unit 2, Containment Penetrations 22 and 23, February 10 through 22, 2008
- Local Leak Rate Test R0264996, Unit 2, Containment Penetration 50, February 19 through 24, 2008
- Local Leak Rate Test R0286800, Unit 2, Containment Penetration 30, February 27, 2008

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as left setpoints were within required ranges; and the calibration frequency was in accordance with Technical Specifications, the FSAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within

the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met Technical Specifications requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the corrective action program. Specific documents reviewed during this inspection are listed in the attachment.

This inspection constitutes three containment isolation valve inspection samples as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

1EP6 Emergency Preparedness Evaluation (71114.06)

Training Observation

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on January 3, 2008, which required emergency plan implementation by a licensee operations crew. This evolution was evaluated and included in performance indicator data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the corrective action program. As part of the inspection, the inspectors reviewed Emergency Plan Training Scenario, Session 07-5.

This inspection constitutes one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

2. **RADIATION SAFETY**

Cornerstone: Occupational Radiation Safety

2OS1 Access Control To Radiologically Significant Areas (71121.01)

a. Inspection Scope

This area was inspected to assess the licensee'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, Technical Specifications, and the licensee's procedures required by Technical Specifications as criteria for determining compliance. The inspectors also reviewed activities associated with the steam generator replacement to fulfill the inspection requirements of Inspection Procedure 50001, "Steam Generator Replacement Inspection." 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:

- Performance indicator events and associated documentation packages reported by the licensee in the occupational radiation safety cornerstone
- Controls (surveys, posting, and barricades) of three radiation, high radiation, or airborne radioactivity areas
- Radiation work permits, procedures, engineering controls, and air sampler locations
- Conformity of electronic personal dosimeter alarm setpoints with survey indications and plant policy; workers' knowledge of required actions when their electronic personnel dosimeter noticeably malfunctions or alarms
- 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
- Physical and programmatic controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools
- 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
- Licensee actions in cases of repetitive deficiencies or significant individual deficiencies
- Radiation work permit briefings and worker instructions

- Adequacy of radiological controls, such as required surveys, radiation protection job coverage, and contamination control during job performance
- Changes in licensee procedural controls of high dose rate - high radiation areas and very high radiation areas
- Controls for special areas that have the potential to become very high radiation areas during certain plant operations
- Posting and locking of entrances to all accessible high dose rates - high radiation areas and very high radiation areas
- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

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

This inspection constitutes 20 samples as defined in Inspection Procedure 71121.01.

b. Findings

Introduction. The inspectors identified a Green noncited violation of Technical Specification 5.4.1 for failure to follow a licensee procedure.

Description. While touring the Unit 2 spent fuel pool on February 13, 2008, the inspectors observed workers performing fuel inspections on the fuel bridge. Radiation Work Permit 08-2019-00 requires a continuous air monitor be operating in the fuel building, with an appropriate alarm setpoint to alert workers and provides actions for workers to take upon receiving an alarm. The inspectors noted that the physical location of the continuous air monitor, an AM-4, was in the southeast corner of the floor. The function of the continuous air monitor is to monitor for airborne radioactive materials while fuel inspection is performed. Furthermore, Site Procedure RCP D-430, "Plant Airborne Radioactivity Surveillance," Section 2.2.3 states, in part, the purpose of the continuous air monitors is to alert personnel to changes in radiological conditions. Ventilation flow in this area is from north to south with the exhaust intakes centered with the spent fuel pool. The continuous air monitor was approximately 18 feet away from the nearest exhaust intake and approximately 50 feet away from the workers' location. The permanently installed continuous air monitor was out of service; however, it was physically located beneath an exhaust intake. Personnel interviews indicated that the AMS-4 was originally placed on top of the permanently installed continuous air monitor, but then it was moved to get a better remote indication. However, the inspectors concluded, from discussions with radiation protection supervision, that no evaluation was made to determine if the new location was appropriate to alert workers of changing radiological conditions.

During review of this occurrence, the inspectors were made aware of a similar situation that was identified on May 3, 2006. Specifically, Action Request A0666110 was opened to evaluate the adequacy of AMS-4 placement in the fuel building during fuel moves. The corrective action was initiated in response to an NRC inspector's questions during a walkthrough. However, this action request remained open with a resolution date of December 15, 2008.

Analysis. This finding is more than minor because it is associated with the occupational radiation safety program and process attribute and affected the cornerstone objective, in that the failure to monitor for radioactive material in the air had the potential to increase personnel dose. This occurrence involves workers unplanned, unintended or potential for such dose; therefore, this finding was evaluated using the occupational radiation safety significance determination process. The inspectors determined that this finding was of very low safety significance because it did not involve: (1) an as low as is reasonably achievable (ALARA) planning or work control issue; (2) an overexposure; (3) a substantial potential for overexposure; or (4) an impaired ability to assess dose. This finding also has a crosscutting aspect in the area of problem identification and resolution, corrective action component, because the licensee failed to take timely corrective actions to address personnel safety issues. [P.1(d)]

This finding was identified by NRC because the NRC inspectors questioned the position of the AMS-4.

Enforcement. Technical Specification 5.4.1 requires procedures be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Appendix A. Section 7 of Appendix A recommends radiation protection procedures for airborne radioactivity monitoring. The licensee implementing Procedure RCP D-430, "Plant Airborne Radioactivity Surveillance", Section 2.2 states, in part, the purpose of the continuous air monitors is to alert personnel to changes in radiological conditions and that locations are selected based on their potential as contributors to airborne activity. Contrary to this requirement, the licensee failed to implement this procedure because the selected location of the continuous air monitor did not provide adequate coverage to alarm and alert the workers of changes in radiological conditions. Because this failure to follow a procedure is of very low safety significance and has been entered into the licensee's corrective action program, Action Request A0719338, this violation is being treated as a noncited violation, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000323/2008002-03, Failure to Follow Procedures.

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). 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 also reviewed activities associated with the steam generator replacement to fulfill the inspection requirements of Inspection Procedure 50001, "Steam Generator Replacement Inspection." The inspectors interviewed licensee personnel and reviewed:

- Five outage or online maintenance work activities scheduled during the inspection period and associated work activity exposure estimates which were likely to result in the highest personnel collective exposures
- Site specific ALARA procedures
- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and radiation work permit (or radiation exposure permit) documents
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- Workers' use of the low dose waiting areas
- First line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner
- Radiation worker and radiation protection technician performance during work activities in radiation areas, airborne radioactivity areas, or high radiation areas
- Self-assessments, audits, and special reports related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques
- Corrective action documents related to the ALARA program and followup 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.

This inspection constitutes 12 samples of ALARA planning and controls 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 Fourth Quarter 2008 performance indicators for any obvious inconsistencies prior to its public release in accordance with IMC 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 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7000 critical hours performance indicator for Units 1 and 2 for the first through fourth quarters of 2007. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Inspection reports for the period of first through fourth quarters of 2007 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.

This inspection constitutes one unplanned scrams per 7000 critical hours sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for Units 1 and 2 for the first through fourth quarters of 2007. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline,"

were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC integrated inspection reports for the period of first through fourth quarters of 2007 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.

This inspection constitutes one unplanned scrams with complications sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.4 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned transients per 7000 critical hours performance indicator for Units 1 and 2 for the first through fourth quarters of 2007. To determine the accuracy of the performance indicator data reported during those periods, performance indicator definitions and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports and NRC integrated inspection reports for the period of the first through fourth quarters of 2007 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.

This inspection constitutes one unplanned transients per 7000 critical hours sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.5 Occupational Radiation Safety

a. Inspection Scope

The inspectors reviewed licensee documents from October 1, 2007 through December 31, 2007. The review included corrective action documentation that identified occurrences in locked high radiation areas (as defined in the licensee's technical specifications), very high radiation areas (as defined in 10 CFR 20.1003), and unplanned personnel exposures (as defined in NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 5). Additional records reviewed included ALARA records and whole body counts of selected individual exposures. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. In addition, the inspectors toured plant areas to verify that high radiation, locked high radiation, and very high radiation areas were properly controlled. Performance

indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

This inspection constitutes one occupational radiation safety sample as defined by Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.6 Radiological Effluent Technical Specification/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

a. Inspection Scope

The inspectors reviewed licensee documents from October 1, 2007 through December 31, 2007. Licensee records reviewed included corrective action documentation that identified occurrences for liquid or gaseous effluent releases that exceeded performance indicator thresholds and those reported to the NRC. The inspectors interviewed licensee personnel that were accountable for collecting and evaluating the performance indicator data. Performance indicator definitions and guidance contained in NEI 99-02, Revision 5, were used to verify the basis in reporting for each data element.

This inspection constitutes one sample of radiological effluent technical specification/offsite dose calculation manual radiological effluent occurrences as defined by Inspection Procedure 71151.

b. Findings

No findings of significances 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 Items Entered into the Corrective Action Program

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspector 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. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation

and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's corrective action program as a result 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 are documented in Section 1 of this report.

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

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 followup, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

.3 Selected Issue Followup Inspection

a. Inspection Scope

During a review of items entered in the licensee's corrective action program, the inspectors completed an in-depth review of:

- Action Request A0716519, NRC problem identification adverse trend, January 15, 2008
- Action Request A0717510, Inattentive operator, January 29, 2008
- Identification and resolution of problems associated with the steam generator replacement project

The above constitutes completion of three in-depth problem identification and resolution samples.

b. Findings

No findings of significance were identified.

.4 Occupational Radiation Safety

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's problem identification and resolution process with respect to the following inspection areas:

- Access Control to Radiologically Significant Areas (Section 2OS1)
- ALARA Planning and Controls (Section 2OS2)

b. Findings

Section 2OS1 describes a finding with crosscutting aspects associated with problem identification and resolution.

4OA5 Other

A. Temporary Instruction 2515/166, "Pressurized Water Reactor Containment Sump Blockage", Diablo Canyon Units 1 and 2 (Closed)

Temporary Instruction 2515/166 was performed at Diablo Canyon Power Plant, Unit 1 during May 2007, and documented in Inspection Report 05000275/2007003. Subsequent inspection of Diablo Canyon Power Plant Unit 2 is documented in this report. The inspection phase of Temporary Instruction 2515/166 for Units 1 and 2 is complete.

03.01 Verify the implementation of the plant modifications and procedure changes committed to by the licensee in their Generic Letter 2004-02 responses. Listed below are the commitments and actions taken by Diablo Canyon Unit 1 and 2:

1. Install larger sump screens.

Actions Taken

Installed and documented in Diablo Canyon Procedure C-50844 and DCP C - 50857, Action Request 0701461

2. Modify reactor cavity door (Door 278-2)

Actions Taken

Work completed and documented in AR A0648630.

3. Add three 18-inch high perforated plate debris interceptors on doors 275-2, 276-2 and 277-2 in the crane wall.

Actions Taken

Work completed and documented in AR A0687983.

4. Install RMI and/or other approved encapsulated fibrous insulation on the replacement steam generators and the steam generator belly bands.

Actions Taken

Work completed and documented in DEP M-50754 and AR A0642989.

5. Remove cable tray fire stops inside the crane wall which are inside the pipe break zone of influence.

Actions Taken

Work completed and documented in AR A0676978 and WO C0213262-01 and C0214501-01.

6. Install multiple banding on cal-sil piping insulation inside the pipe break zone of influence.

Actions Taken

Work completed and documented in AR A0693591.

7. Install stainless steel jacketing on Temp-Mat piping insulation inside the pipe break zone of influence.

Actions Taken

Work completed and documented in AR A0693786.

8. Install tray covers to protect the pressurizer heater cable insulation in cable trays.

Actions Taken

Work completed and documented in AR A0688131.

9. Install encapsulated Temp-Mat insulation on the inlet to Pressurizer Safety Valves 8010A, 8010B and 8010C.

Actions Taken

Work completed and documented in AR A0693786.

10. Conduct an evaluation of downstream debris ingestion effects.

Actions Taken

Evaluation completed and documented in AR A0703421-05.

11. Conduct downstream effects evaluation for erosive wear on ECCS and CSS valves.

Actions Taken

Evaluation completed with satisfactory results and documented in AR A0703421-06.

12. Conduct a downstream effects evaluation of auxiliary equipment.

Actions Taken
Evaluation completed with satisfactory results and documented in AR A0703421-07.
13. Conduct an evaluation of the ECCS pumps disaster bushing leakage.

Actions Taken
Evaluation completed with satisfactory results and documented in Calculation M-1113 R0
14. Conduct a fuel blockage evaluation.

Actions Taken
Evaluation completed with satisfactory results and documented in AR A0703421-04.
15. Conduct a LOCA deposition model fuel evaluation.

Actions Taken
Evaluation completed with satisfactory results and documented in AR A0703421-70.
16. Change procedure EOP E-1.3, "Transfer to Cold-leg Recirculation."

Actions Taken
Change implemented and documented in AR A0701461.48.
17. Change procedure EOP E-1. "Loss of Reactor or Secondary Coolant."

Actions Taken
Change implemented and documented in AR A0701461.48.
18. Change procedure EOP ECA-1.3, "Sump Blockage Guideline."

Actions Taken
Change implemented and documented in AR A0701461.48.
19. Change procedure PEP EN-1, "Post Accident Mitigation Diagnostic Aids and Guidelines."

Actions Taken
Change implemented and documented in AR A0720403-03.
20. Change procedure STP R-20, "Boric Acid Inventory."

Action Taken
Change implemented and documented in AR A0690337-10.

21. Change procedure STP M-45A, "Containment Inspection Prior to Establishing Containment Integrity."

Action Taken

Change implemented and documented in AR A0701461-75.

22. Change procedure STP M-45B, "Containment Inspection When Containment Integrity is Established."

Action Taken

Change implemented and documented in AR A0718227-03.

23. Change procedure STP M-45C, "Outage Management Containment Inspection."

Action Taken

Change implemented and documented in AR A0718227-04.

24. Change Procedure CF3.ID9, "Design Change Development."

Action Taken

Change implemented and documented in CF3.ID9 R32.

25. Change Procedure MIP C-4.0, "Thermal Insulation."

Action Taken

Change implemented and documented in MIP C-4.0 R4.

26. Change Procedure AD7.DC8, "Work Control."

Action Taken

Change implemented and documented in AD7.DC8 R27.

29. Change Procedure AD4.ID9, "Containment Housekeeping and Material Controls."

Action Taken

Change implemented and documented in AR A0718227-05.

30. Change Technical Specification 3.5.4, "Refueling Water Storage Tank" and Surveillance Requirement 3.5.4.2, to increase the minimum required borated water volume from equal to or greater than 400,000 gallons (81.5 percent indicated level) to equal to or greater than 455,300 gallons.

Action Taken

Technical specification amendment submitted and approved by NRC on March 26, 2008.

- B. Temporary Instruction 2515-172, "Reactor Coolant System Dissimilar Metal Butt Welds"

Temporary Instruction TI 2515/172, "Reactor Coolant System Dissimilar Metal Butt Welds" was performed at Diablo Canyon during Refueling Outage 2R14 in February and March 2008.

03.01 Licensee's Implementation of the MRP-139 Baseline Inspections

a. MRP-139 baseline inspections:

The inspectors observed performance and reviewed records of structural weld overlays and nondestructive examination activities associated with the Diablo Canyon Unit 2 pressurizer structural weld overlay mitigation effort. The baseline inspections of the pressurizer dissimilar metal butt welds (DMBW) were completed during the spring 2008 refueling outage.

b. At the present time, the licensee is not planning to take any deviations from the baseline inspection requirements of MRP-139, and all other applicable DMBWs are scheduled in accordance with MRP-139 guidelines.

03.02 Volumetric Examinations

a. There were no inspections of unmitigated pressurizer DMBWs performed during this outage. The inspectors reviewed the ultrasonic examination records of the unmitigated hot leg and cold leg DMBWs (Welds WIB-RC-2-1[SE] and WIB-RC-3-16[SE]), respectively, performed on April 29, 2006. These examinations were conducted in accordance with the MRP-139 guidelines (i.e., personnel, procedures, and equipment qualified in accordance with ASME Code, Section XI, Supplement VIII [PDI] requirements).

No relevant conditions or deficiencies were identified during the examinations of the hot and cold leg unmitigated DMBWs, or the mitigated pressurizer DMBWs.

b. Inspectors directly observed and/or reviewed records of NDE performed on pressurizer weld overlays. This effort is documented in Section 1R08 of this inspection report.

For each weld overlay inspected the licensee submitted and received NRC approval by letter dated February 6, 2008, for the use of Relief Request REP-1 U2, "The Application of Weld Overlay on Dissimilar Metal Welds of Pressurizer Nozzles," Revision 1.

Inspection coverage met requirements of MRP-139.

No relevant conditions were identified.

c. The certification records of ultrasonic examination personnel used in the examination of the unmitigated hot and cold legs DMBWs, and the mitigated pressurizer DMBWs were reviewed. All personnel records showed that they were qualified under the EPRI Performance Demonstration Initiative.

d. No deficiencies were identified during the NDE.

03.03 Weld Overlays

- a. The inspectors observed structural weld overlay welding and reviewed records pertaining to the pressurizer nozzles and determined that welding was performed in accordance with ASME Code Section IX requirements. Welding inspections are documented in section 1R08 of this inspection report.
- b. The licensee submitted and received NRC approval by letter dated February 6, 2008, for the use of Relief Request REP-1 U2, "The Application of Weld Overlay on Dissimilar Metal Welds of Pressurizer Nozzles," Revision 1.
- c. The qualification records of welders were reviewed and all qualifications were current.
- d. No relevant conditions were identified.

03.04 Mechanical Stress Improvement

This item is not applicable because the licensee did not employ a mechanical stress improvement process.

03.05 Inservice inspection program

The licensee MRP-139 inservice inspection program has basically been controlled through the Action Request Program to assure that requirements identified in the MRP-139 guidelines are not inadvertently missed. As such, the MRP-139 inservice inspection program is in-process, although it was recognized that this may not be the most appropriate way to control DMBW locations and scheduling requirements. The licensee initiated Action Request AR A0725407 to update MRP-139 tracking and planning documents, and to create an appropriate scheduling mechanism. This item will receive further in-office inspection at a later date.

The inspectors' review determined that the hot leg and cold leg DMBWs are appropriately categorized in accordance with MRP-139 requirements. Categorization of all other DMBWs will receive further in-office inspection at a later date.

With the exception of the pressurizer nozzle DMBWs, which were categorized as "H," no other DMBWs were categorized as either "H" or "I." The structural weld overlay mitigation effort removed the pressurizer nozzles from Category H.

The licensee's MRP-139 Inservice Inspection Program will receive additional in-office review at a later date.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On March 28, 2008, the inspectors presented the results of this inservice inspection to Mr. Jim Becker, Site Vice President, and other members of licensee management. Licensee management acknowledged the inspection findings. The inspectors returned proprietary material examined during the inspection.

On April 1, 2008, the inspectors presented the inspection results to Mr. J. Becker, and other members of your 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 February 15, 2008, the inspectors presented the occupational radiation safety inspection results to Mr. M. Somerville, Radiation Protection Manager, and other members of your staff who acknowledged the findings. On March 14, 2008, the inspectors presented the inspection results to Mr. L. Parker, Acting Regulatory Services Manager, and other members of your staff who acknowledged the findings by teleconference. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

PG&E Personnel

J. Becker, Vice President - Diablo Canyon Operations and Station Director
R. Brown
W. Cote
C. Dougherty
R. Hite, Manager, Radiation Protection
D. Gonzalez
S. Ketelsen, Manager, Regulatory Services
K. Langdon, Director, Operations Services
M. Meko, Director, Site Services
K. Peters, Director, Engineering Services
K. Shatell
M. Somerville, Manager, Radiation Protection
S. Zawalick

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000275; 05000323/2008002-01	NCV	Failure to Maintain the Integrity of an Auxiliary Building Fire Door (Section 1R05)
05000275; 05000323/2008002-02	NCV	Failure to Demonstrate that the Unit 2 Containment Atmosphere Particulate Radioactivity Monitor Performance was Being Effectively Controlled per 10 CFR 50.65(a)(2) (Section 1R12)
05000275; 05000323/2008002-03	NCV	Failure to Follow Procedures, per Technical Specification 5.4.1 (Section 2OS1)

LIST OF DOCUMENTS REVIEWED

1R01: Adverse Weather

Procedures

CP M-12, Stranded Plant, Revision 3A

Action Requests

A0700848 A0713166 A0713716 A0714757 A0715124

Other Documents

Meeting notes, Operational Decision Making Meeting, January 3, 2008

1R04: Equipment Alignment

Procedures

OP F-2:1, Component Cooling Water System, Make Available, Revision 29

Action Requests

A0581569 A0709594 A0661827

Drawings

106714, Unit 1 Component Cooling Water System, Sheet 1, Revision 59
106714, Unit 1 Component Cooling Water System, Sheet 2, Revision 56
106714, Unit 1 Component Cooling Water System, Sheet 3, Revision 49
108008, Unit 2 Chemical & Volume Control System, Sheet 1, Revision 83
108008, Unit 2 Chemical & Volume Control System, Sheet 2, Revision 11
108008, Unit 2 Chemical & Volume Control System, Sheet 3, Revision 89
108008, Unit 2 Chemical & Volume Control System, Sheet 4, Revision 80
108008, Unit 2 Chemical & Volume Control System, Sheet 4A, Revision 78
108008, Unit 2 Chemical & Volume Control System, Sheet 4B, Revision 93
108008, Unit 2 Chemical & Volume Control System, Sheet 4C, Revision 0
108008, Unit 2 Chemical & Volume Control System, Sheet 5, Revision 67
108008, Unit 2 Chemical & Volume Control System, Sheet 5A, Revision 54
108008, Unit 2 Chemical & Volume Control System, Sheet 5B, Revision 85
108008, Unit 2 Chemical & Volume Control System, Sheet 5C, Revision 72
108008, Unit 2 Chemical & Volume Control System, Sheet 6, Revision 44
108008, Unit 2 Chemical & Volume Control System, Sheet 7, Revision 84
108008, Unit 2 Chemical & Volume Control System, Sheet 8, Revision 84
108008, Unit 2 Chemical & Volume Control System, Sheet 9, Revision 77
108008, Unit 2 Chemical & Volume Control System, Sheet 10, Revision 6
108008, Unit 2 Chemical & Volume Control System, Sheet 11, Revision 7
108008, Unit 2 Chemical & Volume Control System, Sheet 12, Revision 17
108008, Unit 2 Chemical & Volume Control System, Sheet 13, Revision 38
108008, Unit 2 Chemical & Volume Control System, Sheet 14, Revision 55
108008, Unit 2 Chemical & Volume Control System, Sheet 15, Revision 73
108008, Unit 2 Chemical & Volume Control System, Sheet 16, Revision 83

Other Documents

Diablo Canyon Nuclear Power Plant Units 1 and 2, Design Criteria Memorandum, S-8 and Volume Control System, Revision 30B

1R05: Fire Protection

Procedure

OM8.ID2, Fire System Impairment, Revision 13

Work Order

Roving Fire Watch Check Lists completed for February 9, 10, 16, and 17, 2008

Action Request

A0718292

1R08: Inservice Inspection Activities

Procedures

WDI-ET-008, IntraSpect Eddy Current Inspection of Vessel Head Penetration J-Welds and Tube OD Surfaces, Revision 8

WDI-ET-013, IntraSpect UT Analysis Guidelines, Revision 12

ISI X-CRDM, Reactor Vessel Top and Bottom Head Visual Inspections, Revision 4A

CF5-DC2, Welding Filler Material Control, Revision 10

NDE PDI-UT-2, Ultrasonic Examinations of Austenitic Piping

54-ISI-838-09, Manual Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds, Revision 3

PDI-UT-8, Generic Procedure for the Ultrasonic Examination of Weld Overlaid Similar and Dissimilar Metal Welds, Revision F

54-PT-200-07, Color Contrast Solvent Removable Liquid Penetrant Examinations of Components, Revision 7

PDI-ISI-254-SE, Ultrasonic Examination of Dissimilar Welds, Revision 2

Calculation

CN-NCE-DCPPRSG-12, Feedwater Nozzle and Thermal Sleeve Analysis, Revision 1

Corrective Action Documents

A0717850	A0719528	A0718124	A0674071
A0718292	A0719824	A0719065	A0725407
A0718661	A0720014	A0719829	
A0719033	A0716746	A0712487	
A0719321	A0717199	A0712484	

Drawings

2-2-48, Charging Injection – Out, Revision 2

8019491D, Diablo Canyon Unit 2 Pressurizer Spray Nozzle Overlay Implementation, Revision 2

8019493D, Diablo Canyon Unit 2 Pressurizer Safety and Relief Nozzle Overlay Implementation. Revision 2

8023646B, Diablo Canyon Unit 2 Pressurizer Spray Nozzle SWOL Contour Template, Revision 0

8023647B, Diablo Canyon Unit 2 Pressurizer Surge Nozzle SWOL Contour Template, Revision 0

8019492D, Diablo Canyon Unit 2 Pressurizer Surge Nozzle Overlay Implementation, Revision 2

Miscellaneous

Relief Request RR REP-1 U2, Application of Weld Overlay on Dissimilar and Similar Metal Welds of the Pressurizer Relief Valve, Safety Vaves, Spray Line, and Surge Line Nozzles for the Third 10-year ISI Interval at DCPD Unit 2, Revision 1

ESH-102, Safety Evaluation by the Office of Nuclear Reactor Regulation Request for relief from the AMSE Boiler and Pressure Vessel Code, Section XI, ISI Program Pacific Gas & Electric Co. Diablo Canyon Power Plant, Unit 2, Docket 50-323, Revision 0

Alloy 600 Program Review, 9/5/06

Welding Procedure Specifications and their Supporting Procedure Qualification Records

Welding Procedure Specification 11, Welding of P8 Materials with GTAW and/or SMAW, ASME I, ASME III, ANSI B31.1, and AWS D5.2, Procedure Qualification Records 201, 235, and 499, Revision 8

Welding Procedure Specification 3/8/F43OLTBSCa3, Machine Temper Bead Overlay GTAW, Procedure Qualification Records 7164, 7213, 7280, and 7281, Revision 3

1R12: Maintenance Effectiveness

Issue Report

RPE Number P-7401 Rev 00 RC-2: C&S Design Class I Duo Check Valve Parts

Procedure

MA1.ID17, Maintenance Rule Monitoring Program, Revision 18

Work Order

C0217599

Action Requests

A0718996	A0584087	A0584097	A0671226	A0697363	A0709074
A0709405	A0712454	A0712518	A0717009	A0717151	A0716671

1R15: Operability Evaluations

Procedures

STP M-51, Routine Surveillance Test of Containment Fan Cooler Units, Revision 15A

STP M-93A, Refueling Interval Surveillance - Containment Fan Cooler System, Revision 20

AR PK01-16, Annunciator Response - Containment Environment PPC, Revision 4

OM7.ID12, Operability Determination, Revision 11

STP-86, Leak Reduction of Systems Outside Containment Likely to Contain Radioactive Materials Following an Accident, Revision 19

STP M-21-ENG.1, Diesel Generator Inspection, Revision 8

MP M-54.1, Bolt Fabrication and Tensioning, Revision 20

Action Requests

A0407497	A0411426	A0709301	A0709957	A0714266	A0718586
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Calculation

Fuel Handling Building Steel Superstructure, Revision 4

Other Document

USNRC Information Notice 2007-27 dated August 6, 2007, Recurring Events Involving Emergency Diesel Generator Operability

1R18: Plant Modifications

Procedures

CF4.ID7, Temporary Modifications, Revision 19
STP M-45B, Containment Inspection When Containment Integrity is Established, Revision 12

Action Request

A0643070

Work Order

C0216374-1, Build Frames/Stage Scaff Mat'l IAW EM-TMOD, January 7, 2008
C0216374-2, Stage Cables, El. Panels, Transfmrs, IAW EM-TMOD, January 23, 2008
C0216374-3, Stage Jobbox's, Harnesses & A-Frame IAW EM-TMOD, January 8, 2008
C0216374-4, Stage Lead Shielding in Boxes IAW EM-TMOD, January 18, 2008
C0216374-5, Stage Machining Equipment IAW EM-TMOD, January 24, 2008
C0216405-1, Stage Sump Material in Containment IAW EM-TMOD, January 28, 2008

Drawing

452418, Rear View Loose Parts Monitoring Rack, Revision 14

Calculations

Unit 2 Design Calculation, N-217, Containment Coatings Tracking, Revision 8

SGRP Project Letter, SGRP-07-1057, Temporary Modification A0710453 Installation Instructions and Applicability Determination, November 20, 2007

Calculation ALION-REP-DCPP-2830-001, Diablo Canyon Characterization of Events that May Lead to ECCS Recirculation, Revision 0

Calculation GE-NE-0000-0064-1369-P-R2, May 2007, Residual Heat Removal Pump ECCS Trainer System S0100 Hydraulic Sizing Report

Calculation M-580, Determination of Post LOCA Flood Water Levels Inside Containment Units 1 and 2, Revision 4

Calculation M-591, Determination of the Head Loss Across the Recirculation Sump Screen Structure, Revision 28

Calculation N-100, Maximum Flow From ECCS Pumps an Minimum Flow to Containment Spray Header, Revision 2

Calculation N-22b7, Post-LOCA Minimum Containment Sump Level, Revision 3

Containment Recirculation Sump Strainer Diablo Canyon Power Plant Units 1 and 2, Contract 3500736064, September 29, 2006

Specification 10070-M-NPG, Diablo Canyon Power Plant Units 1 and 2,,Containment Recirculation Sump Strainer Specification, September 29, 2006

1R19: Post Maintenance Testing

Procedures

STP P-RHR-22, Routine Surveillance Test of RHR Pump 2-2, Revision 19

STP P-AFW-11, Routine Surveillance Test of Turbine-Driven Auxiliary Feedwater Pump 1-1, Revision 24

OP F-2:II, Component Cooling Water System Changing Over Pumps and Common Components, Revision10

STP M-16, Integrated Test of Engineered Safeguards and Diesel Generators, Revision 40

STP-650, Penetration 50 Containment Isolation Valve Leak Test, Revision 11

CF3.ID13, Replacement or New Part Evaluation, AT-RPE AR and CITE, Revision 19A

STP-623, Penetration 22 and 23 Containment Isolation Valve Leak Test, Revision 7

Action Requests

A0715884 A0725117 A0718341 A0718996 A0720488

Drawings

Dual Plate Check Valve Assembly Drawing, Revision 2

8"- 130" Swing Check Valve Cast Stain STL- Butt Weld Ends Stellite Trim, Revision 6

Miscellaneous

Valve 9011B Leak Rate History

Generic Check Valve Inspection As Found for CS-2-9011B (MP M-51.14)

Generic Check Valve Inspection As Left for CS-2-9011B (MP M-51.14)

Generic Check Valve Inspection for CCW-2-695 (MP M-51.14)

RPE Number: P-7401 Revised August 11, 2002

1R20: Outage Activities

Procedures

OP O-32, Unit Attachment 3, Charging pump 2-1, Revision 0

AP SD-0, Loss of, or Inadequate Decay Heat Removal, Revision 11A

AD8.DC55, Unit 2 Outage Safety Checklist – Core Offloaded, Revision 27

AD8.DC51, Outage Safety Management Control of Off-Site Power Supplies to Vital Buses, Revision 12A

Other Documents

Unit 2, Fuel Assemble NN66 Movement History March 3, 2008

Diablo Canyon Power Plant 2R14 Outage Safety Plan, Revision 1

Nuclear Management and Resource Council, NUMARC Guidelines for Industry Actions to Assess Shutdown Management, December 1991

Action Requests

A0719298 A0719285 A0719294

1R22: Surveillance Testing

Procedures

STP V-3R5, Exercising Steam Supply to Auxiliary Feedwater Pump Turbine Stop Valve, FCV-95, Revision 19

STP V-3R6, Exercising Steam Supply to Auxiliary Feedwater Pump Turbine Isolation Valves, FCV-37 and FCV-38, Revision 10

STP V-3P5, Exercising Valves LCV-106, 107, 108, and 109 Auxiliary Feedwater Pump Discharge, Revision 20

STP V-623, Penetration 22 and 23 Containment Isolation Valve Leak Test, Revision 7

STP V-650, Penetration 50 Containment Isolation Valve Leak Testing, Revision 11

CF3.ID13, Replacement or New Part Evaluation (RPE), AT-RPE AR and CITE, Revision 19A

STP I-1A, Routine Shift Checks required by Licenses, Revision 109

STP V-3F1, Exercising Valve FCV-495, ASW Pump 2 Crosstie Valve, Revision 23

STP M-26, Auxiliary Saltwater Flow System Monitoring, Revision 2

STP M-9A, Diesel Generator Routine Surveillance Test, Revision 76A

STP M-13F, 4kV Bus F Non-SI Auto-Transfer Test, Revision 36

STP M-16U, Slave Relay Test of Trains A and B, K605, Revision 6

2OS1: Access Controls to Radiologically Significant Areas and 2OS2: ALARA Planning and Controls

Procedures

RCP D-200, Writing Radiation Work Permits and ALARA Planning, Revision 41

RCP D-220, Control of Access to High, Locked High, and Very High Radiation Areas, Revision 35

RCP D-240, Radiological Posting, Revision 18

RCP D-420, Sampling and Measuring of Airborne Radioactivity, Revision 20B

RCP D-430, Plant Airborne Radioactivity Surveillance, Revision 18

RCP D-500, Routine and Job Coverage Surveys, Revision 23

RP1, Radiation Protection, Revision 4A

RP1.ID9, Radiation Work Permits, Revision 9

AWPO-002, NRC Performance Indicator: RETS/ODCM Radiological Effluent Occurrences, Revision 9

AWPO-003, NRC Performance Indicators: Occupational Exposure Control Effectiveness, Revision 5

Action Requests

A0666110	A0714302	A0711672	A0713281	A0713540	A0703336
A0703351	A0706806	A0081493	A0716527	A0714302	A0649226
A0711318	A0711502	A0719338	A0716506	A0716528	A0713703
A0716120	A0716272	A0716535	A0716640	A0716656	

Audits and Self-Assessment

Diablo Canyon Power Plant Quality Performance Assessment Report, 3rd Period 2007

Radiation Work Permits

08-2015-00	08-0007-00	08-2140-00	08-2041-00	08-2104-00	08-2106-00
08-2001-00	08-2066-00	08-2019-00			

4OA2: Problem Identification and Resolution

Miscellaneous

Quality Verification Observation Report, January 31-February 7, 2008

Quality Verification 2R14 Short Form Assessment 080380014, February 7, 2008,

Quality Verification Department Bi-Weekly Observation Report EDMS 080030003, February 11, 2008

Generation Nuclear Quality Verification Diablo Canyon Power Plant, Short Form Assessment 080660004

Quality Verification, 2R14 Mid-Outage Human Performance Assessment, Short Form Assessment 080660003

Quality Verification Department, Bi-weekly Observation Report, February 12-28, 2008, EDMS 080030004

Quality Verification Real Time Report, February 21, 2008

Plant Performance Improvement Report, December 2007

Quality Verification, Real Time Report February 28, 2008

DCPP Observation Program Report, FileNet: 080660012, March 6, 2008

DCPP Observation Program Report, FileNet: 080730027, March 13, 2008

DCPP Observation Program Report, FileNet: 080790015, March 20, 2008

DCPP Observation Program Report, FileNet: 080860006, March 27, 2008

Section 4OA5: TI 2515/166, PWR Containment Sump

Amendment 200, License DPR-82, Pacific Gas and Electric Company, Docket 50-323, Diablo Canyon Nuclear Power Plant, Unit 2, Amendment to Facility Operating License, Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment 199 to Facility Operating License DPR-80, and Amendment 200 to Facility Operating License DPR-82, Pacific Gas and Electric Company, Diablo Canyon Nuclear Power Plant, Units 1 and 2.

PG&E Letter, DCL-08-002, U.S. Nuclear Regulatory Commission, Supplemental response to Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors."

LIST OF ACRONYMS

ALARA	as low as is reasonably achievable
ASME	American Society of Mechanical Engineers
CFR	<i>Code of Federal Regulation</i>
FSAR	Final Safety Analysis Report
NCV	noncited violation
NDE	nondestructive examination
NEI	Nuclear Energy Institute
PG&E	Pacific Gas and Electric
VUHP	vessel upper head penetration