UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BLVD
ARLINGTON, TEXAS 76011-4511

May 2, 2013

Mr. Edward D. Halpin
Senior Vice President and
Chief Nuclear Officer
Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT – NRC INTEGRATED INSPECTION REPORT 05000275/2013002 and 05000323/2013002

Dear Mr. Halpin:

On March 23, 2013 the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant. The enclosed inspection report documents the inspection results which were discussed on April 9, 2013, with you and members of your staff.

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

Two NRC identified and one self-revealing finding of very low safety significance (Green) were identified during this inspection. Two of these findings were determined to involve violations of NRC requirements. Further, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations consistent with Section 2.3.2a of the Enforcement Policy.

If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Diablo Canyon Power Plant.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV; and the NRC Resident Inspector at the Diablo Canyon Power Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's

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Sincerely,

/RA/

Neil F. O'Keefe, Chief
Project Branch B
Division of Reactor Projects

Docket Nos.: 05000275, 05000323
License Nos: DPR-80, DPR-82

Enclosure: Inspection Report 05000275/2013002 and 05000323/2013002
w/ Attachments: Supplemental Information

cc w/ Enclosure: Electronic Distribution

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Acting DRS Deputy Director (Jeff.Clark@nrc.gov)
Senior Resident Inspector (Thomas.Hipschman@nrc.gov)
Resident Inspector (Laura.Micewski@nrc.gov)
Branch Chief, DRP/B (Neil.OKeefe@nrc.gov)
Senior Project Engineer, DRP/B (Michael.Bloodgood@nrc.gov)
Project Engineer, DRP/B (David.You@nrc.gov)
DC Administrative Assistant (Madeleine.Arel-Davis@nrc.gov)
Public Affairs Officer (Victor.Dricks@nrc.gov)
Public Affairs Officer (Lara.Uselding@nrc.gov)
Project Manager (Jim.Polickoski@nrc.gov)
Branch Chief, DRS/TSB (Ray.Kellar@nrc.gov)
RITS Coordinator (Marisa.Herrera@nrc.gov)
ACES (R4Enforcement.Resource@nrc.gov)
Regional Counsel (Karla.Fuller@nrc.gov)
Technical Support Assistant (Loretta.Williams@nrc.gov)
Congressional Affairs Officer (Jenny.Weil@nrc.gov)
OEMail Resource
ROPreports
RIV/ETA: OEDO (Doug.Huyck@nrc.gov)

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/RA/E-OKeefe	/RA/E-Okeefe	/RA/GGeorge for	/RA/SGraves for	/RA/	/RA/
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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	05000275, 05000323
License:	DPR-80, DPR-82
Report:	05000275/2013002 05000323/2013002
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, California
Dates:	January 1 through March 23, 2013
Inspectors:	T. Hipschman, Senior Resident Inspector L. Micewski, Resident Inspector I. Anchondo, Reactor Inspector P. Jayroe, Reactor Inspector J. Laughlin, Emergency Preparedness Inspector, NSIR J. O'Donnell, Health Physicist L. Ricketson, P.E., Senior Health Physicist D. You, Project Engineer
Approved By:	N. O'Keefe, Chief Project Branch B Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000275/2013002, 05000323/2013002; 01/01/2013 – 03/23/2013; Diablo Canyon Power Plant, Integrated Resident and Regional Report; Inservice Inspection Activities, Problem Identification and Resolution

The report covered a 3-month period of inspection by resident inspectors and announced baseline inspections by region-based inspectors. Two Green non-cited violations and one Green finding of significance were identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, "Significance Determination Process." The cross-cutting aspect is determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Findings for which the significance determination process does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified Findings and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. The inspectors reviewed a Green self-revealing finding for failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications. Specifically, design engineering staff was not effective in using applicable station design documents, in conjunction with industry standards to determine minimum creepage distance for high voltage insulators when replacing ceramic bushings with polymer bushings on the main bank transformer. As a result, the licensee approved installation of an insulator stack that did not provide adequate ground protection, which caused a plant trip on October 11, 2012. The licensee entered the condition in their corrective action program as Notification 50518473.

  Failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during power operations, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 4, "Initial Characterization of Findings," and Appendix A, Exhibit 1, "Initiating Events Screening Questions," this finding was determined to be of very low safety significance (Green) because, although it resulted in a reactor trip, it did not result in the loss of mitigating equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. This finding had a cross-cutting aspect in the area of human performance, associated with the decision making component, because the licensee did not use conservative assumptions in decision making when considering the suitability of the design for the environment [H.1(b)] (Section 1R18).

- Green. On February 14, 2013, the inspectors observed field welders add a partial circumferential weld on one side of the pipe in efforts to repair the pipe misalignment prior to the completion of the final visual inspection. This action represents a violation of 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," because the licensee's procedure established special controls for critical distortions but failed to adequately define what situations fit that category. The licensee reviewed the stress calculation for the piping in question and concluded that the addition of the weld filler material did not affect the fatigue resistance of the weld, but acknowledged that a definition and additional guidance for the term "critical" was missing in the procedure and could have adverse effects on future final welds. The licensee entered the finding into their corrective action program as Notification 50542347.

  The inspectors determined that the failure of the site's welding standard to provide adequate guidance to identify what constitutes a weld distortion during welding activities was a performance deficiency. The finding was more than minor because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, Procedure GSW-ASME did not provide the necessary guidance for welders and quality assurance personnel to identify and understand what constitutes critical distortion of a weld. The welding process can introduce effects of weld shrinkage (stresses) and distortion that could adversely affect the final condition of the weld, potentially leading to a service induced failure. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. The inspectors determined the finding had a cross-cutting aspect in the human performance area associated with work practices and procedural compliance, because the licensee did not adequately define or train welders to know what constituted a critical distortion, and did not effectively communicate the expectation of questioning the procedure if the welding activity required skill of the craft [H.4(b)] (Section 1R08).

- Green. The inspectors identified a Green non-cited violation of 10 CFR 50.55a(a)(3)(i), which requires that proposed alternatives to industry codes and standards provide an acceptable level of quality and safety. The NRC staff approved relief request REP-1 U2 dated March 28, 2007, for installing six structural weld overlays on the pressurizer safety, relief, spray and surge nozzles. The request established acceptance criteria of laminar flaws during weld acceptance examinations limited to only the third 10-year inservice inspection interval. Contrary to the above, the licensee failed to identify unacceptable flaws as defined by the approved request following completion of these welds in 2008. The licensee entered the finding into their corrective action program as Notification 50540188.

  The inspectors determined that the licensee's failure to identify indications that exceeded the acceptable linear dimension of laminar flaws prior to placing the system in service is a performance deficiency. The performance deficiency was more than minor because it is associated with the Initiating Events Cornerstone attribute of equipment performance,

and adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, during the months of February and March 2013, the licensee identified that three out of the six pressurizer structural weld overlays exhibited laminar flaws that exceeded the linear dimensions approved by the safety evaluation. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the reactor coolant system leak rate for a small loss-of-coolant accident and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This issue did not have a cross-cutting aspect associated with it because it is not indicative of current performance (Section 1R08).

B. Licensee-Identified Violations

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers (condition report numbers) are listed in Section 4OA7.

REPORT DETAILS

Summary of Plant Status

At the beginning of the inspection period, Pacific Gas and Electric (PG&E) Company was operating both units at full power.

Unit 1 operated at full power for the remainder of the inspection period.

On February 3, 2013, plant operators shut down Unit 2 for a scheduled refueling and maintenance outage. On March 21, 2013, the licensee restarted the unit. The licensee then performed low power physics testing and began a gradual ascension in power. Unit 2 was operating at 28% power at the completion of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of the adverse weather procedures for seasonal extremes (e.g., extreme high temperatures, extreme low temperatures, or hurricane season preparations). The inspectors verified that weather-related equipment deficiencies identified during the previous year were corrected prior to the onset of seasonal extremes and evaluated the implementation of the adverse weather preparation procedures and compensatory measures for the affected conditions before the onset of, and during, the adverse weather conditions.

During the inspection, the inspectors focused on plant-specific design features and the procedures used by plant personnel to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Final Safety Analysis Report Update (FSARU) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant-specific procedures. Specific documents reviewed during this inspection are listed in the attachment. The inspectors also reviewed corrective action program items to verify that plant personnel were identifying adverse weather issues at an appropriate threshold and entering them into their corrective action program in accordance with station corrective action procedures. The inspectors' reviews focused specifically on the following plant systems:

- January 14-16, 2013, emergency diesel generators, reactor refueling water system, and 125v DC battery rooms during periods of freezing temperatures

These activities constitute completion of one readiness for seasonal adverse weather sample as defined in Inspection Procedure 71111.01-05.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- January 2, 2013, Unit 2, Safety injection pump 2-2
- February 4, 2013, Unit 2, Startup power distribution to vital buses during planned maintenance outage of auxiliary and main bank transformer
- March 1, 2013, Unit 1, Power distribution to vital buses during planned site 230 kV outage for breaker testing

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could affect the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, FSARU, 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 inspected accessible portions of the systems to verify system components and support equipment were aligned correctly and operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program with the appropriate significance characterization. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On February 6, 2013, the inspectors performed a complete system alignment inspection of the Reactor Vessel Refueling Level Indication System (RVRLIS) to verify the functional capability of the system. The inspectors selected this system because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors inspected the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. The inspectors reviewed a sample of past and outstanding work orders to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that system equipment-alignment problems were being identified and appropriately resolved. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Inspection Tours

a. Inspection Scope

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

- January 2, 2013, Unit 2, Plant Process Computer (PPC) inverter area, Fire Area 6B-5
- January 30, 2013,Unit 2, Boron injection tank room, Fire Zone 3-D-3
- February 4, 2013, Unit 2, Component cooling water heat exchanger room, Fire Zone 19-E
- March 5, 2013, Unit 2, Containment building, Fire Area 9

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

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

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors reviewed the FSARU, the flooding analysis, and plant procedures to assess susceptibilities involving internal flooding; reviewed the corrective action program to determine if licensee personnel identified and corrected flooding problems; inspected underground bunkers/manholes to verify the adequacy of sump pumps, level alarm circuits, cable splices subject to submergence, and drainage for bunkers/manholes; and verified that operator actions for coping with flooding can reasonably achieve the desired outcomes. The inspectors also inspected the areas listed below to verify the adequacy of equipment seals located below the flood line, floor and wall penetration seals, watertight door seals, common drain lines and sumps, sump pumps, level alarms, and control circuits, and temporary or removable flood barriers.

- February 14, 2013, Unit 2, underground bunker BZ42 cabling for auxiliary saltwater pump 2-1

- February 15, 2013, Unit 2, underground bunker BPO34/BPO34A cabling for auxiliary saltwater pump 2-1

These activities constitute completion of two bunker/manhole samples as defined in Inspection Procedure 71111.06-05.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08)

Completion of Sections .1 through .5, below, constitutes completion of one sample as defined in Inspection Procedure 71111.08-05.

.1 Inspection Activities Other Than Steam Generator Tube Inspection, Pressurized Water Reactor Vessel Upper Head Penetration Inspections, and Boric Acid Corrosion Control (71111.08-02.01)

a. Inspection Scope

The inspectors observed seven nondestructive examinations and reviewed five nondestructive examination activities that included three types of examinations. The inspectors also reviewed four examinations with relevant indications that had been accepted by licensee personnel for continued service.

The inspectors directly observed the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Steam Generator	RSG 2-1 FW Nozzle to Vessel	Ultrasonic
Pressurizer	Pressurizer “B” Safety Nozzle Weld No. WIB-423 OL	Ultrasonic Phased Array
Chemical Volume Control System	FE-158, Weld No. 1 through 5	Liquid Penetrant

The inspectors reviewed records for the following nondestructive examinations:

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Pressurizer	Pressurizer “A” Safety Nozzle Weld No. WIB-369 OL	Ultrasonic Phased Array
Pressurizer	Pressurizer “C” Safety Nozzle Weld No. WIB-359 OL	Ultrasonic Phased Array
Pressurizer	Pressurizer Spray Nozzle Weld No. WIB-345 OL	Ultrasonic Phased Array
Pressurizer	Pressurizer Surge Nozzle Weld No. WIB-358 OL	Ultrasonic Phased Array

SYSTEM	WELD IDENTIFICATION	EXAMINATION TYPE
Pressurizer	Pressurizer PORV Nozzle Weld No. WIB-380 OL	Ultrasonic Phased Array

During the review and observation of each examination, the inspectors verified that activities were performed in accordance with the ASME Code requirements and applicable procedures. The inspector reviewed indications that were previously examined and verified that licensee personnel dispositioned the indications in accordance with the ASME Code and approved procedures. The inspectors also verified the qualifications of all nondestructive examination technicians performing the inspections were current.

The inspectors observed two welds on the reactor coolant system pressure boundary.

The inspectors directly observed a portion of the following welding activities:

SYSTEM	WELD IDENTIFICATION	WELD TYPE
Chemical Volume Control System	RCP-2 Seal Flow Instrument FE-158 Weld No. 4	Gas Tungsten Arc Welding
Chemical Volume Control System	Discharge Check Valve CVCS-2-8487B Weld No. 1	Gas Tungsten Arc Welding

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 welding process were identified, recorded in the procedure qualification record, and formed the bases for qualification of the welding procedure specifications. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.01.

b. Findings

(1) Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion IX, “Control of Special Processes,” for failing to provide adequate guidance during welding activities.

Description. On February 14, 2013, welders were performing replacement activities that included five socket welds on the Chemical Volume and Control System.

The modification changed the piping configuration and installed a flow meter on the reactor coolant pump 2-2 seal return line. As required by a hold point in the work order,

the welders notified the quality control personnel of their completion of all welding activities. Prior to the final visual inspection, it became apparent that a section of the vertical run of ¾ inch replacement piping that flanged to the new flow meter was not aligned in accordance with design requirements. The work order specifically required that the flanges be parallel such that no stresses would be applied to the new flow instrument to avoid adversely affecting its function. Subsequent to a short discussion with the quality control personnel, the welders proceeded to add a partial circumferential filler weld to one side of the pipe with the intent to use weld shrinkage forces to bring the section of pipe back to the desired alignment.

Inspectors noted that licensee procedure GWS-ASME, "ASME General Welding Standard," Revision 12, stated,

> All welding shall be performed so as to minimize the effects of weld shrinkage and distortion caused by the welding process. In cases where control of weld shrinkage and distortion is critical, the Plant Welding Engineer or Applied Technology Services (ATS), shall be contacted to evaluate the specific application and develop methods for shrinkage and distortion control.

This procedure is one of multiple procedures covered under the plant's Nuclear Welding Control Manual. The welding procedure specifications, which referenced Procedure GWS-ASME, requires welding activities be performed per these standards. Furthermore, Procedure GWS-ASME requires, in part,

> The welder and welding operator is responsible for performing welding in accordance with this standard. He should be trained in the requirements of this standard and equipped with the necessary tools to comply with this standard.

The inspectors questioned if the method used to realign the pipe was considered critical, and whether the partial addition of filler metal on one side of the pipe minimized stress effects. The licensee consulted ATS group responsible for the Nuclear Welding Control Manual, and after further review of applicable procedures, acknowledged the need for further guidance and clarification on what is considered critical distortion. The licensee entered the finding into their corrective action program as Notification 50542347.

Analysis. The failure to provide adequate guidance to identify what constitutes a case where control of weld shrinkage and distortion is critical and requires the attention of the welding engineer or ATS is a performance deficiency. The performance deficiency affects the barrier integrity cornerstone and is more than minor, because if left uncorrected, it has the potential to lead to a more significant safety concern. Specifically, Procedure GWS-ASME does not provide the necessary guidance for welders and quality assurance personnel to identify and understand what constitutes critical distortion of a weld. The welding process can introduce effects of weld shrinkage (stresses) and distortion that could adversely affect the final condition of the weld potentially leading to a service-induced failure. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the RCS leak rate for a small loss-of-coolant accident

and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. The inspectors determined the finding had a cross-cutting aspect in the human performance area associated with work practices, procedural compliance, because the licensee did not adequately define or train welders to know what constituted a critical distortion, and did not effectively communicate the expectation of questioning the procedure if the welding activity required skill of the craft [H.4(b)] (Section 1R08).

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion IX, "Control of Special Processes," requires that measures shall be established to assure that special processes, including welding, heat treating, and nondestructive testing, are controlled and accomplished by qualified personnel using qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements. Procedure GWS-ASME, "ASME General Welding Standards," Revision 12, Step 5.18, states, in part, "In cases where control of weld shrinkage and distortion is critical, the Plant Welding Engineer or ATS shall be contacted to evaluate the specific application and develop methods for shrinkage and distortion control."

Contrary to the above, on February 14, 2013, the inspectors identified that the licensee failed to establish measures to assure that special processes specifically welding, was controlled and accomplished by qualified personnel using qualified procedures. Specifically, the licensee failed to provide a definition and additional guidance for the term "critical" was missing in the procedure and could have adverse effects on future final welds. In addition, the welder and QA inspector could not explain what the term "critical" meant in relation to the welding process and the licensee's training program did not address this term. The licensee reviewed the stress calculation for the piping in question and concluded that the addition of the weld filler material did not affect the fatigue resistance of the weld. Because the finding is of very low safety significance and has been entered into licensee's corrective action program as Notification 50542347, this violation is being treated as a non-cited violation, consistent with Section 2.3.2a of the NRC Enforcement Policy: NCV 05000323/2013002-01 "Failure to Provide Adequate Guidance to Address General Welding Standard Requirements."

(2) Introduction. The inspectors identified a Green non-cited violation of 10 CFR 50.55a(a)(3)(i), for failing to identify multiple rejectable indications in the structural weld overlays of pressurizer dissimilar metal welds prior to placing the system in service.

Description. On February 13, 2013, the inspector witnessed the nondestructive examination of Pressurizer Safety Nozzle B structural weld overlay using the ultrasonic phased array method. The examination, which was completed as a part of the licensee's inservice inspection program, recorded three narrowly aligned indications that had not been previously recorded. Due to ASME code flaw proximity requirements, the indication had a combined length of 4.7 inches. The pressurizer structural weld overlays were first inspected in 2008 (refueling outage 2R14) during weld acceptance and preservice examinations upon installation using conventional ultrasound methods. No unacceptable indications were recorded. Subsequent inservice examinations were performed in October 2009 (2R15) per the required periodicity using conventional

ultrasonic method and, again, no unacceptable indications were recorded. These two inspections were performed using a performance demonstration initiative (PDI) qualified conventional ultrasonic methodology of the required preservice and inservice inspection examination volume. The licensee, per relief request REP-1 U2, dated March 28, 2007, and supplemental responses on October 22, 2007, and November 29, 2007, had received NRC approval on February 6, 2008, (ML080110001**)** to install preemptive full structural weld overlays to mitigate the potential for primary water stress-corrosion cracking of dissimilar metal welds of the pressurizer nozzles. The safety evaluation approved by the NRC staff in February 6, 2008, states, in part,

> The acceptance standards in paragraph 3(a)(3) of Attachment 1, Enclosure 2 of the October 22, 2007, submittal are identical to paragraph Q-4100(c)(1) of the ASME Code, Section XI, Appendix Q, except that paragraph 3(a)(3) includes the additional limitation that the total laminar flaw shall not exceed 10 percent of the weld surface area and that no linear dimension of the laminar flaw area exceeds 3.0 inches or 10 percent of the nominal pipe circumference, whichever is greater.

The indication found in Safety Nozzle B exceeded the linear dimension approved by the safety evaluation. The licensee proceeded to inspect the remaining safety nozzles. Because additional laminar flaws exceeding the dimensional limits were detected, the licensee completed the examination of the remaining pressurizer (surge, relief, and spray) nozzles. After the completion of all inspection activities, the licensee identified laminar flaws in Safety Nozzle B, Safety Nozzle A, and the Spray Nozzle that exceeded the linear dimension limits for laminar flaws as approved by the safety evaluation. Also, an acceptable but recordable indication was identified in Safety Nozzle C that had not been previously identified.

Analysis. The failure to identify indications during the weld acceptance ultrasonic examination that exceeded acceptable linear dimension of laminar flaws is a performance deficiency. The performance deficiency is more than minor because it is associated with the initiating events cornerstone attribute of equipment performance, and adversely affects the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, during the months of February and March 2013, the licensee identified that three out of the six pressurizer structural weld overlays exhibited laminar flaws that exceeded the linear dimension area allowed by the safety evaluation that granted relief to the licensee's request. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At-Power," the finding was determined to be of very low safety significance (Green) because the finding did not result in exceeding the Reactor Cooling System leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function. This issue did not have a cross-cutting aspect associated with it because it is not indicative of current performance (Section 1R08).

Enforcement. Title 10 CFR 50.55a(a)(3)(i) requires that an applicant shall demonstrate an acceptable level of quality and safety if they propose alternatives to the requirements of Part 50.55a, subsections (c), (d), (e), (f), (g), an (h). In a letter dated February 6, 2008, (ML080110001**)** the NRC staff approved the licensee's inservice inspection

program relief request REP-1 U2 dated March 28, 2007, (ML070990060). The approved request established acceptance criteria for laminar flaws during acceptance examinations during the third 10-year inservice inspection interval. The safety evaluation states in part, "the total laminar flaw shall not exceed 10 percent of the weld surface area and that no linear dimension of the laminar flaw area exceeds 3.0 inches or 10 percent of the nominal pipe circumference, whichever is greater."

Contrary to the above, between the initial acceptance testing in 2008 and the inservice inspection in February 2013, the licensee failed to demonstrate an acceptable level of quality and safety in the weld overlays because they operated with unacceptable flaws as defined by the approved safety evaluation without adequate evaluation or NRC authorization. On March 8, 2013, the licensee received verbal approval for continued operation until the next refueling outage. Because the finding is of very low safety significance and has been entered into licensee's corrective action program as Notification 50540188, this violation is being treated as a non-cited violation, consistent with Section 2.3.2a of the NRC Enforcement Policy: NCV 05000323/2013002-02 "Failure to identify existing indications during prior ultrasonic examinations of pressurizer structural weld overlays."

.2 Vessel Upper Head Penetration Inspection Activities (71111.08-02.02)

a. Inspection Scope

There were no inspections during refueling outage 2R17. The next visual inspection is scheduled for 2R18 in spring of 2014. The next volumetric inspection is scheduled for 2R21 in fall of 2018.

These actions constitute completion of the requirements for Section 02.02.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control Inspection Activities (71111.08-02.03)

a. Inspection Scope

The inspectors evaluated the implementation of the licensee's boric acid corrosion control program for monitoring degradation of those systems that could be adversely affected by boric acid corrosion. The inspectors reviewed the documentation associated with the licensee's boric acid corrosion control walkdown as specified in Procedure STP R-8C, "Containment Walkdown for Evidence of Boric Acid," Revision 10. The inspectors also reviewed the visual records of the components and equipment. The inspectors verified that the visual inspections emphasized locations where boric acid leaks could cause degradation of safety-significant components. The inspectors also verified that the engineering evaluations for those components where boric acid was identified gave assurance that the ASME Code wall thickness limits were properly maintained. The inspectors confirmed that the corrective actions performed for evidence

of boric acid leaks were consistent with requirements of the ASME Code. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements for Section 02.03.

b. Findings

No findings were identified.

.4 Steam Generator Tube Inspection Activities (71111.08-02.04)

a. Inspection Scope

There were no inspections during refueling outage 2R17. The next steam generator inspections are scheduled for 2R18 in the spring of 2014.

These actions constitute completion of the requirements of Section 02.04.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems (71111.08-02.05)

a. Inspection Scope

The inspectors reviewed 35 condition reports, which dealt with inservice inspection activities and found the corrective actions for inservice inspection issues were appropriate. The specific condition reports reviewed are listed in the documents reviewed section. From this review the inspectors concluded that the licensee has an appropriate threshold for entering inservice inspection 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 inservice inspection operating experience. Specific documents reviewed during this inspection are listed in the attachment.

These actions constitute completion of the requirements of Section 02.05.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

.1 Quarterly Review of Licensed Operator Requalification Program

a. Inspection Scope

On January 24, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during training. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations and the quality of the training provided
- The quality of post-scenario critiques

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

b. Findings

No findings were identified.

.2 Quarterly Observation of Licensed Operator Performance

a. Inspection Scope

The inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity due to Unit 2 reactor shutdown for a scheduled refueling outage and subsequent restart. The inspectors observed the operators' performance of the following activities:

- February 2, 2013, Unit 2 power reduction from 50% power to 60 MWe, including the pre-job brief
- February 3, 2013, Unit 2 planned reactor trip for refueling outage and reactor trip response, including the pre-job brief
- February 4, 2013, Unit 2 surveillance test of vital bus automatic transfer capabilities, including the pre-job brief
- March 21, 2013, Unit 2 reactor startup

In addition, the inspectors assessed the operators' adherence to plant procedures, including Procedure OP1.DC10, "Conduct of Operations," and other operations department policies.

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- February 21, 2013, Units 1 and 2, Main steam system safety valves, Notification 50274627
- February 21, 2013, Units 1 and 2, Containment isolation valve pipe supports, Notification 50408740

The inspectors reviewed events such as 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)
- Characterizing system reliability issues for performance monitoring
- Charging unavailability for performance monitoring
- Trending key parameters for condition monitoring
- Ensuring proper classification in accordance with 10 CFR 50.65(a)(1) or -(a)(2)
- Verifying appropriate performance criteria for structures, systems, and components classified as having an adequate demonstration of performance through preventive maintenance, as described in 10 CFR 50.65(a)(2), or as requiring the establishment of appropriate and adequate goals and corrective actions for systems classified as not having adequate performance, as described in 10 CFR 50.65(a)(1)

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

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

b. Findings

No findings were identified.

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

a. Inspection Scope

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

- January 29, 2013, Outage Safety Plan for 2R17 (Unit 2)
- January 30, 2013, Integrated safeguards and associated bus transfer testing (Unit 2)
- March 1, 2013, Planned site outage of 230 kV offsite power during testing of breaker CB 212 (both units)
- March 12, 2013, Risk ranking model and calculation for the buried piping and tanks program (both units)
- March 13, 2013, Transition to Mode 5 with N-31 and N-32 source range nuclear instruments inoperable (Unit 2)
- March 14, 2013, Operation with reduced inventory (Unit 2)
- March 21, 2013, Transition to Mode 2 with auxiliary building exhaust fan E-1 inoperable (Unit 2)

The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that licensee personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When licensee personnel performed emergent work, the inspectors verified that the licensee personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance

work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed the following assessments:

- January 2, 2013, Unit 2 Notification 50530828, Foreign material found in safety injection pump 2-2 oil reservoir
- January 31, 2013, Units 1 and 2, Notification 50526159, Assessment of fuel handling accident to demonstrate acceptable control room dose
- February 28, 2013, Units 1 and 2, Notification 50526287, Prompt Operability Assessment for non-conservative assumptions in the non-loss of coolant accident dose consequence analyses
- March 12, 2013, Unit 2, Notification 50547324, Source range nuclear instrument N-32 unexpected increase in count rate
- March 20, 2013, Unit 2, Notification 5054991, Auxiliary building ventilation trouble alarms

The inspectors selected these operability and functionality assessments based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure technical specification operability was properly justified and to verify 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 FSARU 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. Additionally, the inspectors reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting

any deficiencies associated with operability evaluations. Specific documents reviewed during this inspection are listed in the attachment.

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

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Modifications

a. Inspection Scope

To verify that the safety functions of important safety systems were not degraded, the inspectors reviewed the following temporary modification:

- Prop U1 process control system (PCS) door panels partially open

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

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

b. Findings

No findings were identified.

.2 Permanent Modifications

a. Inspection Scope

The inspectors reviewed key parameters associated with materials, replacement components, equipment protection from hazards, operations, flow, structural, process medium properties, licensing basis, and failure modes for the permanent modification identified as replacement of porcelain 500kV capacitance coupled voltage transformers (CCVT) with polymer insulators.

The inspectors verified that modification preparation and implementation did not impair emergency/abnormal operating procedure actions, key safety functions, or operator response to loss of key safety functions; systems, structures and components' performance characteristics still meet the design basis; the modification design assumptions were appropriate; and licensee personnel identified and implemented appropriate corrective actions associated with permanent plant modifications. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample for permanent plant modifications as defined in Inspection Procedure 71111.18-05.

b. Findings - Failure to Effectively Evaluate Design Change for High Voltage Bushing

Introduction. The inspectors reviewed a Green self-revealing finding for failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications. Specifically, design engineering staff was not effective in using applicable station design documents, in conjunction with industry standards to determine minimum creepage distance for high voltage insulators when replacing ceramic bushings with polymer bushings on the main bank transformer.

Description. On October 11, 2012, during light precipitation from the first rainstorm of the season, a high voltage insulator on the Unit 2 Main Bank Transformer arced to ground. When protective relays sensed this line-to-ground fault, they automatically tripped the main generator, which in turn signaled safety features to automatically trip the Unit 2 reactor as designed.

Subsequent chemical analysis of the failed insulator, as well as several other silicon polymer insulators in the vicinity, showed a high level of salt and hydrocarbon contamination on the surfaces, likely due to sea air, diesel exhaust in the vicinity of the insulators, and dust from nearby construction activities. These surface contaminants became more conductive when moistened by a light rain, greatly increasing local leakage currents, which caused localized arcing that ultimately resulted in a power arc to ground. The key design factors for an insulator to withstand these environmental effects are the material properties of the insulator and the creepage distance. Silicon polymer material is hydrophobic – it repels water – which encourages the formation of water beads and thus minimizes the formation of continuous films of water that can dissolve surface contaminants and become a conductive path. Creepage distance is the total distance along the insulator surface between the energized portion and ground. The Institute of Electrical and Electronics Engineers (IEEE) sets the industry standard by providing recommendations for minimum creepage distance, which are based in part on the local operating environment.

The high voltage insulator that arced had been installed in May 2011, as part of a design change intending to increase personnel safety in and around the switchyards. Following the catastrophic failure of a high voltage porcelain bushing in August 2008, the licensee concluded that catastrophic failure of high voltage porcelain bushings is not uncommon in the utility industry. To mitigate this danger, many utilities have switched from

porcelain with an advanced polymer material, which splits open when it fails, but does not energetically splinter into dangerous projectiles. Therefore, in 2010, the licensee developed design changes to replace the porcelain insulators with silicon polymer insulators on various components on and around the Main Bank Transformer, including phase bushings, lightning arrestors, and CCVTs.

Engineers performing the replacement part evaluation first referred to Design Criteria Memorandum (DCM) S-61B "500 kV and 230 kV Systems," for guidance. The DCM S-61B contained detailed information about the design bases and system descriptions for the 500 kV and 230 kV offsite power sources. Although it contains very little relevant information specific to the design of CCVTs, it did contain factual information that could have resulted in the appropriate classification of environmental contamination. The lead engineer determined that it was necessary to also use guidance from the industry standard reference document published by the IEEE, entitled C57.19.100-1995 "IEEE Guide for Application of Power Apparatus Bushings." The staff also used the Pacific Gas & Electric corporate standard entitled "Substation Design Standard 073141", as well as vendor recommendations and input from corporate engineers knowledgeable in insulator design.

As part of their review, the inspectors considered that the following errors were made by the design engineering staff:

- While most of the information in DCM S-61B was irrelevant to CCVT design, it did contain a general discussion about insulator requirements, including an explicit statement giving quantitative values of environmental contamination, measured onsite at Diablo Canyon in 1968, that equated to a classification of "Heavy" environmental contamination using Table 1 in the IEEE standard C57.19.100-1995. The staff missed this opportunity to classify the environment as "Heavy".

- Table 1 in the IEEE standard C57.19.100-1995 gave a qualitative description of typical environments with a "Heavy" classification as "Areas close to the sea or exposed to strong sea winds." The staff also missed this opportunity to classify the environment as "Heavy".

- The IEEE standard further recommended that in a heavily contaminated environment, a minimum creepage distance of 502 inches should be used. The staff overlooked this information.

A contributing factor to this assessment was the information in Substation Design Standard 073141, which stated that the Pacific Gas & Electric standard for all sites in the corporation was a minimum of 400 inches of creepage distance. The staff non-conservatively interpreted the corporate standard as a statement of adequacy, rather than as a minimum that may need to be exceeded in a unique operating environment.

Another factor in the selection of a replacement insulator was that it was required to be seismically qualified. The only commercially available seismically-qualified insulator model using the desired material was sized at 400 inches of creepage distance. The

design engineer attempted to justify that a 400 inch insulator would be adequate, despite the minimum IEEE recommendation of 502 inches, by performing a comparison between the proposed new product and the porcelain insulators already in place.

The design engineering staff made the following errors in evaluating this comparison:

- The staff failed to properly use applicable station design documents. The design engineer referred to DC 6015585-11, "Instruction Manual for Coupling Capacitor Voltage Transformers," to determine that the creepage length of the porcelain insulators on the CCVT was 435 inches, when in fact the length was 521 inches. The engineer failed to note that the introductory paragraph to DC 6015585-11 stated that because the vendor manufactures a comprehensive range of CCVTs, "the information detailed in this manual is applicable in general, except where noted otherwise."

- An additional document, 6015585-1, "Capacitor Voltage Transformer Type Temp 500A", listed the actual length specific to the model installed at Diablo Canyon as 521 inches, but the staff overlooked this information.

- The staff also used non-conservative assumptions to compare the relative margin afforded by other factors. The IEEE standard C57.19.100-1995 lists several options for countermeasures that can be used when the available creepage length is not long enough for the environmental situation. Options include the use of composite bushings instead of ceramic, periodic cleaning or the application of a silicone grease protective coating. When the staff attempted to make a quantitative comparison of old length versus new length, they credited the use of polymer material for the proposed new insulator, but did not account for additional margin that cleaning and greasing had given to the old insulator. This resulted in a non-conservative comparison.

- The staff attempted to quantify the amount of margin gained by using the new material, with no approved, documented basis to do so. The staff accepted a verbal vendor estimate of 15% creepage gain, and assigned a quantitative value of 50 inches gained. This resulted in an erroneous numeric comparison that predicted the new insulator would have a relative gain of effective creepage distance, and concluded that the 400 inch polymer was adequate to satisfy both seismic and creepage requirements.

Analysis. Failure to effectively and accurately evaluate all available resources to procure appropriate equipment for plant modifications was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenged critical safety functions during power operations, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 1, "Initiating Events Screening Questions," this finding was determined to be of very low safety significance (Green) because, although it

resulted in a reactor trip, it did not result in the loss of mitigating equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

This finding had a cross-cutting aspect in the area of human performance, associated with the decision making component, because the licensee did not use conservative assumptions in decision making. Specifically, giving more weight to the generic standard in the corporate design criteria that did not consider the unique environment experienced by sites located directly on the coast, while overlooking information in the industry IEEE standard concerning environmental contamination, as well as making a margin comparison that did not account for all relevant factors, resulted in acceptance of an insufficient creepage length for high voltage bushings [H.1(b)].

Enforcement. This finding does not involve enforcement action because no regulatory requirement was identified. This finding was placed in the licensee's corrective action program as Notification 50518473. Because this finding does not involve a violation and is of very low safety significance (Green), it is identified as a finding: FIN 05000323/2013002-01, "Failure to Effectively Evaluate Design Change for High Voltage Bushing."

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- January 29, 2013, Unit 1, post-repair testing of control room ventilation system backdraft damper, Work Orders 60053921 and 60053966
- February 14, 2013, Unit 2, post-maintenance testing of penetration 68 containment isolation check valve, Work Orders 64048132 and 64048134
- February 25, 2013, Unit 2, post-maintenance testing of penetration 30 containment isolation check valve, Work Orders 64093931, 64014206, and 60038026
- March 7, 2013, Unit 2, post-maintenance testing of startup transformer 2-1, Work Order 68022126
- March 8, 2013, Unit 2, post-maintenance testing of centrifugal charging pump 2-3, Work Order 60003405
- March 15, 2013, Unit 2, post-maintenance testing of containment fan cooler unit 2-3, Work Order 64079261

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

The inspectors evaluated the activities against the technical specifications, the FSARU, 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 post-maintenance tests to determine whether the licensee was identifying problems and entering them in the corrective action program and that the problems were being corrected commensurate with their importance to safety. Specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of six post-maintenance testing inspection samples as defined in Inspection Procedure 71111.19-05.

b. Findings

No findings 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, conducted February 3 to March 23, 2013, to confirm that licensee personnel had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense in depth. During the refueling outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below.

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

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

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.

- 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.

- Verification 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 the technical specifications.

- Refueling activities, including fuel handling to detect fuel assembly leakage.

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

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

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the FSARU, procedure requirements, and technical specifications to ensure that the surveillance activities listed below demonstrated that the systems, structures, and/or components tested were capable of performing their intended safety functions. The inspectors either witnessed or reviewed test data to

verify that the significant surveillance test attributes were adequate to address the following:

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

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

- February 4, 2013, Unit 2, 4KV Bus H Non-safety injection auto-transfer test
- February 4, 2013, Unit 2, EDG 2-2 partial load rejection test
- February 5, 2013, Unit 2, inservice test of containment spray additive tank check valves
- February 5, 2013, Unit 2, integrated test of engineered safeguards and diesel generators

- February 14, 2013, Unit 2, local leak rate test of containment penetration 68
- February 14, 2013, Unit 2, local leak rate test of containment penetration 69
- February 20, 2013, Unit 1, inservice test of turbine driven auxiliary feedwater pump 1-1
- February 20, 2013, Unit 1, inservice test of stop valve for steam supply to turbine driven auxiliary feedwater pump 1-1
- February 27, 2013, Unit 1, routine surveillance test of safety injection pump 1-2
- March 7, 2013, Unit 2, routine surveillance test of containment ventilation isolation system

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

These activities constitute completion of ten surveillance testing inspection samples as defined in Inspection Procedure 71111.22-05.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (IP 71114.04)

a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession numbers ML12340A490, ML13042A098 and ML123630335 as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, this revision is subject to future inspection. The specific documents reviewed during this inspection are listed in the Attachment.

These activities constitute completion of six samples as defined in Inspection Procedure 71114.04-05.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

a. Inspection Scope

This area was inspected to: (1) review and assess licensee's performance in assessing the radiological hazards in the workplace associated with licensed activities and the implementation of appropriate radiation monitoring and exposure control measures for both individual and collective exposures, (2) verify the licensee is properly identifying and reporting Occupational Radiation Safety Cornerstone performance indicators, and (3) identify those performance deficiencies that were reportable as a performance indicator and which may have represented a substantial potential for overexposure of the worker.

The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed the radiation protection manager, radiation protection supervisors, and radiation workers. The inspectors performed walkdowns of various portions of the plant, performed independent radiation dose rate measurements, and reviewed the following items:

- Performance indicator events and associated documentation reported by the licensee in the Occupational Radiation Safety Cornerstone
- The hazard assessment program, including a review of the licensee's evaluations of changes in plant operations and radiological surveys to detect dose rates, airborne radioactivity, and surface contamination levels
- Instructions and notices to workers, including labeling or marking containers of radioactive material, radiation work permits, actions for electronic dosimeter alarms, and changes to radiological conditions
- Programs and processes for control of sealed sources and release of potentially contaminated material from the radiologically controlled area, including survey performance, instrument sensitivity, release criteria, procedural guidance, and sealed source accountability
- Radiological hazards control and work coverage, including the adequacy of surveys, radiation protection job coverage, and contamination controls; the use of electronic dosimeters in high noise areas; dosimetry placement; airborne radioactivity monitoring; controls for highly activated or contaminated materials (non-fuel) stored within spent fuel and other storage pools; and posting and physical controls for high radiation areas and very high radiation areas

- Radiation worker and radiation protection technician performance with respect to radiation protection work requirements

- Audits, self-assessments, and corrective action documents related to radiological hazard assessment and exposure controls since the last inspection

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

These activities constitute completion of the one required sample as defined in Inspection Procedure 71124.01-05.

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

a. Inspection Scope

This area was inspected to verify in-plant airborne concentrations are being controlled consistent with ALARA principles and the use of respiratory protection devices on-site do not pose an undue risk to the wearer. The inspectors used the requirements in 10 CFR Part 20, the technical specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance. During the inspection, the inspectors interviewed licensee personnel, performed walkdowns of various portions of the plant, and reviewed the following items:

- The licensee's use, when applicable, of ventilation systems as part of its engineering controls

- The licensee's respiratory protection program for use, storage, maintenance, and quality assurance of NIOSH certified equipment, qualification and training of personnel, and user performance

- The licensee=s capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions, status of SCBA staged and ready for use in the plant and associated surveillance records, and personnel qualification and training

- Audits, self-assessments, and corrective action documents related to in-plant airborne radioactivity control and mitigation since the last inspection

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

These activities constitute completion of the one sample as defined in Inspection Procedure 71124.03-05.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the performance indicator data submitted by the licensee for the fourth quarter 2012 performance indicators for any obvious inconsistencies prior to its public release in accordance with Inspection Manual Chapter 0608, "Performance Indicator Program."

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

b. Findings

No findings were identified.

.2 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams per 7,000 critical hours performance indicator for Units 1 and 2 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned scrams per 7,000 critical hours samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.3 Unplanned Power Changes per 7000 Critical Hours (IE03)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned power changes per 7,000 critical hours performance indicator for Units 1 and 2 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. 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 January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned transients per 7,000 critical hours samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.4 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors sampled licensee submittals for the unplanned scrams with complications performance indicator for Units 1 and 2 for the period from the first quarter 2012 through the fourth quarter 2012. To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, and NRC integrated inspection reports for the period of January 2012 through December 2012, to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the performance indicator data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the attachment to this report.

These activities constitute completion of two unplanned scrams with complications samples as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.5 Occupational Exposure Control Effectiveness (OR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the second quarter 2012 through the fourth quarter 2012. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed corrective action program records associated with high radiation area (greater than 1 rem/hr) and very high radiation area non-conformances. The inspectors reviewed radiological, controlled area exit transactions greater than 100 mrem. The inspectors also conducted walkdowns of high radiation areas (greater than 1 rem/hr) and very high radiation area entrances to determine the adequacy of the controls of these areas.

These activities constitute completion of the occupational exposure control effectiveness sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

.6 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (PR01)

a. Inspection Scope

The inspectors reviewed performance indicator data for the second quarter 2012 through the fourth quarter 2012. The objective of the inspection was to determine the accuracy and completeness of the performance indicator data reported during these periods. The inspectors used the definitions and clarifying notes contained in NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, as criteria for determining whether the licensee was in compliance.

The inspectors reviewed the licensee's corrective action program records and selected individual annual or special reports to identify potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose.

These activities constitute completion of the radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences sample as defined in Inspection Procedure 71151-05.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

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

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. The inspectors accomplished this through review of the station's daily corrective action documents.

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

b. Findings

No findings were identified.

4OA3 Followup of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000275/1-2012-002-00: Failure to Comply with Technical Specification 3.0.3 Time Requirement

In March 2012, the licensee was notified by Rosemount Nuclear Instruments, Inc. that eight differential pressure transmitters installed in the plant may not perform within the published steam pressure and temperature accuracy specification. To address the additional uncertainty in instrument accuracy, the licensee took immediate corrective action to perform a modification that adjusted the instrument setpoints to re-establish margin. Two of the eight transmitters were on steam generator 1-1, which meant that the Limiting Condition for Operation 3.0.3 (LCO 3.0.3) was applicable. LCO 3.0.3 required action to be initiated in one hour to place Unit 1 in a Mode in which the limiting condition does not exist. Although the setpoint adjustment took 63 minutes to complete, the inspectors noted that control room operators took action within one hour to align the plant in preparation to shut down Unit 1, which satisfies the expectation of LCO 3.0.3. The licensee conservatively determined this was reportable in accordance with 10 CFR 50.73. No findings or violations of NRC requirements were identified.

This LER is closed.

.2 (Closed) LER 05000323/2-2012-001-00: Failure to Meet Emergency Diesel Generator Technical Specifications

On August 18, 2012, the licensee staff discovered that the belt that drives the fuel oil booster pump for Emergency Diesel Generator (EDG) 2-3 was broken. Additional investigation showed that the fuel oil booster pump had seized, which presumably caused the belt to snap. The time of failure was determined to be August 3, 2012, when the EDG was coasting down after successful completion of a surveillance test. The licensee replaced the fuel oil booster pump and belt, restoring the EDG to service on August 21, 2012. Therefore, the licensee failed to meet Technical Specification 3.8.1, because the EDG had not been returned to operable status within the required 7-day completion time.

The inspectors reviewed the LER, as well as the circumstances surrounding the failure of the fuel oil booster pump, the adequacy of operator response, and the station procedure for verifying the engine is properly placed in standby following maintenance. The inspectors dispositioned this issue as a licensee-identified violation in Section 4OA7 of this NRC Integrated Inspection Report (see below). No additional findings were identified during this review.

This LER is closed.

4OA5 Other Activities

.1 Temporary Instruction 2515/182 - Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks

a. Inspection Scope

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, Nuclear Energy Institute (NEI) 09-14, "Guideline for the Management of Buried Piping Integrity," (ADAMS Accession No. ML1030901420) to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122), with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued TI-2515/182 "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks" to gather information related to the industry's implementation of this initiative.

The inspectors reviewed the licensee's programs for buried pipe, underground piping and tanks in accordance with TI-2515/182 to determine if the program attributes and completion dates identified in Sections 3.3 A and 3.3 B of NEI 09-14 Revision 1 were contained in the licensee's program and implementing procedures. For the buried pipe and underground piping program attributes with completion dates that had passed, the inspectors reviewed records to determine if the attribute was in fact complete and to determine if the attribute was accomplished in a manner which reflected good or poor practices in program management.

Based upon the scope described above, Phase I was found to meet all applicable aspects of NEI 09-14, Revision 1, as set forth in Table 1 of TI-2515/182.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On February 14, 2013, the inspectors presented the results of the radiation safety inspections to Mr. B. Allen, Site Vice President, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On March 21, 2013, the inspectors held a telephonic exit meeting to present the results of the inservice inspection activities to Mr. B. Allen, Site Vice President, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On April 9, 2013, the resident inspectors presented the inspection results to Mr. E. Halpin, Senior Vice President and Chief Nuclear Officer, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

1. A violation of 10 CFR 50.55a(g)(4) was identified involving the failure to perform a system pressure test of the reactor vessel flange leak-off line of Units 1 and 2 in accordance with the applicable edition of Section XI of the ASME Code. The identified violation was entered into the corrective action program as Notifications 50524370 and 50524575.

   The violation was more than minor because it is associated with the Barrier Integrity Cornerstone attribute of systems, structures, components and barrier performance, and adversely affects the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Using Manual Chapter 0609, Attachment A, "The Significance Determination Process (SDP) for Findings At-Power," the violation was determined to be of very low safety significance (Green) because the finding did not result in exceeding the RCS leak rate for a small loss-of-coolant accident, and did not affect other systems used to mitigate a loss-of-coolant accident resulting in a total loss of their function.

2. The licensee identified a violation of Technical Specification 3.8.1 because EDG 2-3 was inoperable for greater than 7 days. On August 18, 2012, an operator discovered that the fuel oil booster pump belt on EDG 2-3 was broken. The licensee subsequently determined that during the engine shutdown on August 3, 2012, the fuel oil booster pump had seized, which then caused the belt to snap. On August 20, 2012, the licensee completed replacement of the pump and drive belt. This violation has no associated performance deficiency because the licensee had set the drive belt tension in accordance with the manufacturer's recommendation, and there was no internal or industry operating experience that indicated the drive belt tension level was inappropriate. In accordance with IMC 0609 Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," this violation required a detailed risk evaluation because it represented an actual loss of diesel generator function for greater than the Technical Specification allowed outage time. Using the Diablo Canyon Units 1 and 2 Standardized Plant Analysis Risk model, Version 8.20, modified to account for offsite power recovery and the licensee's procedures for intertrain crosstie, the senior reactor analyst determined that the incremental conditional core damage probability from internal initiators was 1.9×10^{-7}. As best available information, the analyst utilized the results from the licensee's fire and seismic models as the external initiators contributor. The final change in core damage frequency was calculated to be 6.5×10^{-7}. Therefore, this violation was of very low safety significance (Green). The licensee entered the issue into the corrective action program as Notification 50507816. Corrective actions include lowering

the drive belt tension specification to minimize side deflection force and modifying the procedure for placing a diesel generator to standby to specifically include a visual check of fuel oil booster pump drive belt integrity.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Site Vice President
T. Baldwin, Manager, Regulatory Services
M. Barnby, Health Physicist, Radiation Protection
A. Bates, Director, Engineering Services
S. Brasfield, Maintenance Manager
T. Cuddy, Senior Manager, Communications
R. Gagne, Supervisor, Radiation Protection
Y. Gagne, Supervisor, Radiation Protection
J. Gardner, Supervising Engineer, Chemistry
D. Gonzalez, Inservice Inspection Supervisor
E. Halpin, Chief Nuclear Officer
J. Hill, Inservice Inspection Engineer
J. Hinds, Director, Quality Verification
K. Hinrichsen, Instrument Foreman, Radiation Protection
T. Hook, Environmental Services Technician, Radiation Protection
T. Irving, Manager, Radiation Protection
J. Knemeyer, Engineer, Chemistry
P. Lawrence, System Engineer, Engineering Services
R. Martin, Design Engineer, Engineering Services
C. Miller, Radwaste Engineer, Radiation Protection
L. Million, Operations and Decontamination Leader, Radiation Protection
M. McCoy, NRC Interface, Regulatory Services
C. Neary, Welding Manager
E. Nelson, Senior Manager, License Basis Verification Project
J. Nimick, Operations Services Director
K. O'Neil, Systems Engineer, Engineering Services
R. Rogers, Outage ALARA Foreman, Radiation Protection
O. Sabi, Environmental Services Technician, Radiation Protection
J. Schmid, Quality Verification Auditor
L. Sewell, Lead Engineer, Radiation Protection
M. Wright, REMP Engineering, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000275; 323/2013002	NCV	Failure To Provide Adequate Guidance To Address General Welding Standard Requirements (Section 1R08.1)
05000323/2013002	NCV	Failure To Identify Existing Indications During Prior Ultrasonic Examinations Of Pressurizer Structural Weld Overlays (Section 1R08.2)
05000323/2013002	FIN	Failure to Effectively Evaluate Design Change for High Voltage Bushing (Section 1R18)

Closed

05000275/1-2012-002-00	LER	Failure to Comply with Technical Specification 3.0.3 Time Requirement (4OA3.1)
05000323/2-2012-001-00	LER	Failure to Meet Emergency Diesel Generator Technical Specifications (4OA3.2)
2515/182	TI	Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks (4OA5.1)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

NOTIFICATIONS

50534909

Section 1R04: Equipment Alignment

PROCEDURES

NUMBER	TITLE	REVISION
AD8.DC51	Outage Safety Management Control of Off-Site Power Supplies to Vital Buses	15
OP A-2:X	RVRLIS Alignments for Refueling Outages, Att. 4	6
OP O-36	Protected Equipment Postings	6
OP J-3:III	230 kV Maintenance Window – Unit 2 Shutdown	4

DRAWINGS

NUMBER	TITLE	REVISION
107707	Unit 2 OVIDS: RVLIS, RVRLIS, & Vessel Venting System, Sheet 6	57

MISCELLANEOUS

NUMBER	TITLE	REVISION
DCM S-9	Safety Injection System	27

Section 1R05: Fire Protection

PROCEDURES

NUMBER	TITLE	REVISION
OM8	Fire Protection Program	3

DRAWINGS

NUMBER	TITLE	REVISION
111906	Containment Building Elev. 140', 117', 91'	2

Section 1R08: Inservice Inspection Activities

PROCEDURES

NUMBER	TITLE	REVISION
STP R-8C	Containment Walkdown for Evidence of Boric Acid Leakage	10
STP R-8A	Reactor Coolant System Leakage Test	16
AD4.ID2	Plant leakage Evaluation	10
ER1.ID2	Boric Acid Corrosion Control Program	6
GWS-ASME	ASME General Welding Standards (Nuclear Welding Control Manual)	12
WI-1	Visual Inspection of Welds (Nuclear Welding Control Manual)	8
CF5.DC2	Welding Filler Material Control	12
NDE-UT-4	Ultrasonic Examination of Pressure Vessel Welds Other than Reactor Vessel	3
NDE-PT-1	Visible Dye Liquid Penetrant Examination Procedure	4
NDE-UT-WOL-PA1	Manual Phased Array Ultrasonic Examination of Welds Overlaid Similar and Dissimilar Metal Welds	0
NDE PDI-UT 11	Ultrasonic Detection and Sizing of Reactor Pressure Vessel Nozzle to Shell Welds and Nozzle Inner Radius	0

Section 1R08: Inservice Inspection Activities

PROCEDURES

NUMBER	TITLE	REVISION
U1&2 MP M-56.10	Piping Fabrication, Installation, Repair or System Alteration	16

CALCULATIONS

NUMBER	TITLE	REVISION
2MP-1739	Pipe Support 2217-57, ISO No-H-8-564 ANAL No. 8-548	1
S-2852	Pipe Support 78-8751SL, ISO No-H-8-565 ANAL No. 8-548	1

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	REVISION / DATE
RIS 2003-13	NRC Review of Responses to Bulletin 2002-01, "Reactor Pressure Vessel Head Degradation and Reactor Coolant Pressure Boundary Integrity	July 29, 2003
GL 88-05	Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants	March 17, 1988
EPRI Technical Report 1000975	Boric Acid Corrosion Guidebook	1

WORK ORDERS

68022173	60054100	60049108	68015523

NOTIFICATIONS

50476468	50406191	50476466	50042077	50504557
50503061	50282955	50518045	50518025	50476557
50448332	50406195	50397464	50384593	50384636
50384660	50271697	50232412	50038988	50037861
50038998	50038997	50037866	50538538	50524370
50540523	50538473	50540188	50401852	50474154
50541347	50542249	50542273	50538201	

Section 1R11: Licensed Operator Requalification Program

PROCEDURES

NUMBER	TITLE	REVISION
STP M-9A	Manual and Auto Transfer of 4 kV Vital BusesOff-Site Power Sources	13
STP R-19	Shutdown Margin Determination	25
L-4	U2, Normal Operation at Power	68
L-5	U2, Plant Cooldown from Minimum Load to Cold Shutdown	76
EOP E-0	U2, Reactor Trip of Safety Injection	34
EOP E-0.1	U2, Reactor Trip Response	29
STP M-13H	4 kV Bus H Non-SI Auto-Transfer Test	40
STP M-9D2	Diesel Generator Partial Load Rejection Test	19
OP1.DC10	Conduct of Operations	36

Section 1R12: Maintenance Effectiveness

NOTIFICATIONS

50274627 50408740

Section 1R13: Maintenance Risk Assessment and Emergent Work Controls

PROCEDURES

NUMBER	TITLE	DATE
MA1.DC11 Attachment 5	Risk Management Plan for OCB 212 Breaker Testing	April 28, 2012
S10	Switching Resource Request for Diablo CB 212 Test Program	January 18, 2011

DRAWINGS

NUMBER	TITLE	REVISION
502110	Single Line Diagram 500/230/25/12/4.16KV Systems	18

MISCELLANEOUS

NUMBER	TITLE	DATE
	Risk Challenge Board meeting minutes	February 28, 2013
2013-008	Plant Safety Review Committee Meeting Minutes	March 31, 2013
	Environmental Report Summary	February 28, 2013

MISCELLANEOUS

NUMBER	TITLE	DATE
Calculation No. 9000041219	Buried Piping and Tanks Program, Inspection Plan Development, Units 1 and 2	December 4, 2012
	2R17 Outage Safety Plan	December 31, 2012
Calculation No. M-911, R4	Evaluation of Safe-shutdown Equipment Operability during loss of HVAC	July 13, 2006
Vendor Analysis DC6023266-1-1	Site Specific Risk Report: Diablo Canyon Power Plant	December 8, 2010

NOTIFICATIONS

5054991

Section 1R15: Operability Evaluations

PROCEDURES

NUMBER	TITLE	REVISION
OP: B-8D	Refueling Prerequisites	56
OP: B-8H	Spent Fuel Work Instructions	42

NOTIFICATIONS

50526459	50526287	50540606	50530828	50547324
5054991	50547396			

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
14078101-RADR-003-0	Vendor Technical Report: “Control Room Doses Following a Fuel Handling Accident, Support of a Prompt Operability Assessment to address Changes in Atmospheric Dispersion Factors”	0
L-SHW-PGE-000115	Vendor Technical Report: “Assessment of Control Room Habitability for Non-LOCA Events Diablo Canyon Power Plant (DCPP)”	February 26, 2013
Emerging Issue Summary	Extent of Condition from SD-21: Seismic Mounting	March 7, 2013
EN 48819	Event Notification	March 12, 2013

Section 1R18: Plant Modifications

DRAWINGS

NUMBER	TITLE	REVISION / DATE
507612	T-Mod: Prop U1 PCS Door Panels Open	14
6015585-11	Instruction Manual for Coupling Capacitor Voltage Transformers	01
6015585-8-1	Capacitor Voltage Transformer Type Temp 500A	October 16, 1997

NOTIFICATIONS

50504060 50518473

MISCELLANEOUS

NUMBER	TITLE	REVISION / DATE
DCPP Form 69-21097	10 CFR 50.59/72.48 Screen	November 19, 2011
CF3.ID13, Attachment 8.1	Replacement Part Evaluation # 8000004621 for 500kV Capacitance-Coupled Voltage Transformers (CCVTs)	August 26, 2010
IEEE Std. C57.19.100-1995	IEEE Guide for Application of Power Apparatus Bushings	March 16, 1995
PG&E Substation Design Standard 073141	Instrument Transformers	March 19, 2009
Design Criteria Memorandum S-61B	500 and 230 kV Systems	13
RCE 50518473	Root Cause Evaluation Report, Unit 2 “A” Phase CCVT Flashover Results in U2 Trip	1
RCE 50518473, Attachment 17.12	Hydrophobicity Testing of DCPP Main Bank #2 A phase CCVT	1
RCE 50518473, Attachment 17.12	Project Report, “Evaluating Housing Materials from CCVT and Surge Arrestor at Diablo Canyon Power Plant”	March 2013

Section 1R19: Post-Maintenance Testing

PROCEDURES

NUMBER	TITLE	REVISION
STP M-6A	Routine Surveillance Testing of Control Room Ventilation System	52

PROCEDURES

NUMBER	TITLE	REVISION
STP V-668	Penetrations 68 and 69 Containment Isolation Valve Leak Testing	17
STP V-630	Penetration 30 Containment Isolation Valve Leak testing	24
MP E-70	Draining and Filling of Oil in Auxiliary and Start-up Transformers (section 7.10)	9
STP P-CCP-A23	Preservice Testing of Charging Pump 2-3	6
STP M-93A	U1 &2, Refueling Interval Surveillance – Containment Fan Cooler System	27

DRAWINGS

NUMBER	TITLE	REVISION
108012	Unit 2 Containment Spray System	27
DC663278-808-1	Vendor drawing “CBS8 Heavy Duty Counterbalanced Backdraft Damper”	
502110	Electrical Single Line Diagram 500/230/25/12/4,16 kV	16
107708, Sheet 5	Unit 2 Charging System	122

NOTIFICATIONS

50515967 50530336 50517363 50517418

WORK ORDERS

68022126

MISCELLANEOUS

NUMBER	TITLE
101094-CW1	Vendor procedure – “Counterweight field adjustment procedure”

Section 1R20: Refueling and Other Outage Activities

PROCEDURES

NUMBER	TITLE	REVISION / DATE
OP O-36	Protected Equipment Postings, U2, Att. 9, 10, 11	6
OP L-0	Mode Transition Checklists	73
OP L-0, Attachment 9.8	Core Offload to Mode 6/ Core Alteration Transition Checklist	September 14, 2011

PROCEDURES

NUMBER	TITLE	REVISION / DATE
OP B-8D, Attachment 9.2	Core Loading Prerequisites Checklist	January 14, 2013

Section 1R22: Surveillance Testing

PROCEDURES

NUMBER	TITLE	REVISION
STP M-13H	4KV bus H Non-SI Auto-Transfer Test	40
STP M-9 D2	Diesel Generator Partial Load Rejection Test	19
STP V-21	Leak Test of Spray Additive Tank Outlet Line Check Valves CS-2-8998A and CS-2-8998B	5
STP V-668	Penetrations 68 and 69 Containment Isolation Valve Leak Testing	17
STP P-AFW-11	Routine Surveillance Test of Turbine-Driven Auxiliary Feedwater Pump 1-1	32
STP V-3R5	Exercising Steam Supply to Auxiliary Feedwater Pump Turbine Stop Valve, FCV-95	20
OP1.DC10 Attachment 3	Pre-Job Brief Guidance	36
OP1.ID3	Planned Plant Evolution Reactivity Brief	10
STP P-SIP-12	Routine Surveillance Test of Safety Injection Pump 1-2	23
STP V-9	Refueling CVI System Operability Determination	19
STP M-15	Integrated Test of Engineered Safeguards and Diesel Generators	55

DRAWINGS

NUMBER	TITLE	REVISION
108012	Unit 2 Containment Spray System	27

1EP4: Emergency Action Level and Emergency Plan Changes

NUMBER	TITLE	REVISION
EP G-3	Emergency Notification of Off-Site Agencies	54B
EP RB-10	Protective Action Recommendations	16
	Emergency Plan, Section 4, Emergency Conditions	4, Change 13

Emergency Plan, Section 5, “Organizational Control of Emergencies	4, Change 14
Emergency Plan, Section 6, “Emergency Measures	4, Change 12
Evacuation Time Estimate Study Update	

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

PROCEDURES

NUMBER	TITLE	REVISION
RCP D-202	RWP Work Instructions	6
RCP D-220	Control of Access to High, Locked High, and Very High Radiation Areas	39
RCP D-240	Radiological Posting	21
RCP D-310	RCA Access Control	24
RCP D-500	Routine and Job Coverage Surveys	36
RCP D-620	Radioactive Source Control Program	8

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
120330015	2012 Radiation Protection Programs Audit	May 17, 2012
Notification 50535350	Pre-inspection Assessment on Radiological Hazard Assessment and Exposure Control	January 28, 2013

NOTIFICATIONS

50481861	50482734	50483851	50484914	50501332
50507885	50512142	50516093	50517277	50523468
50509739	50522139	50527569	50529972	50486488
50526333	50527570	50531128	50509832	

RADIATION WORK PERMITS

NUMBER	TITLE
13-2019	2R17 Fuel Handling at the Spent Fuel Pool
13-2025	2R17 Reactor Head Maintenance
13-2026	2R17 Lower Cavity and Transfer Canal Work
13-2028B	2R17 RVLIS and RVRLIS
13-2031	2R17 Regenerative Heat Exchanger Room Work

RADIATION SURVEYS

NUMBER	TITLE	DATE
14725	Unit 2 Regenerative Heat Exchanger Room – Forced Outage	March 27, 2011
15942	Unit 2 Regenerative Heat Exchanger Room – Initial Entry 2R16	May 5, 2011
26153	Unit 2 Regenerative Heat Exchanger Room – 2R17	February 13, 2013
26059	Unit 2 Containment Sump Work	January 12, 2013
11999	Unit 1 Fuel Handling Building	October 9, 2010
22082	Unit 1 Fuel Handling Building - Boundary Verification	May 18, 2012

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	DATE
Quarter 12-4	Radioactive Source Inventory Guide	December 4, 2012
Quarter 12-4	Radioactive Source Leak Test Guide	November 5, 2012

Section 2RS3: In-plant Airborne Radioactivity Control and Mitigation

PROCEDURES

NUMBER	TITLE	REVISION
OM6.ID10	Respiratory Protection Program	7
RCP D-410	Issuing Respiratory Protective Equipment	17
RCP D-420	Sampling and Measuring Airborne Radioactivity	29
RCP D-612	Sorting Potentially Contaminated Trash Generated in the RCA	6
RCP D-645	HEPA Integrity Testing	1
RCP D-646	Portable HEPA Ventilation	0
RCP D-712	MAXAIR Powered Air Purifying Respirator	1
RCP D-821	Use and Operation of the Eberline AMS-4 Continuous Air Monitor	7

AUDITS, SELF-ASSESSMENTS, AND SURVEILLANCES

NUMBER	TITLE	DATE
STP M-53-U2	Control Room Ventilation System – DOP and Halide Penetration Tests	April 25, 2011
STP M-53-U2	Control Room Ventilation System – DOP and Halide Penetration Tests	May 6, 2009
STP G-10-U2	General Charcoal Filter Bank Penetration Test	April 27, 2011
STP G-10-U2	General Charcoal Filter Bank Penetration Test	May 6, 2009
STP G-9-U2	General HEPA Filter Bank Penetration Test	April 26, 2011
STP G-9-U2	General HEPA Filter Bank Penetration Test	May 6, 2009
STP G-11-U2	Obtaining Charcoal Filter Media for Laboratory Testing (Methyl Iodide)	April 25, 2011
STP G-11-U2	Obtaining Charcoal Filter Media for Laboratory Testing (Methyl Iodide)	May 6, 2009
69-21601	HEPA Filter Integrity Test Results	February 12, 2013
69-21575	Monthly E-Plan Minimum Quantity SCBA Inventory	January 10, 2013
25880	Radiation and Contamination Survey	February 9, 2013
25962	Radiation and Contamination Survey	February 10, 2013
26173	Radiation and Contamination Survey	February 14, 2013
26178	Radiation and Contamination Survey	February 14, 2013
26408	Radiation and Contamination Survey	February 12, 2013
60043747	Integrity Testing HEPAs	May 13, 2012
120330015	2012 Radiation Protection Programs Audit	May 17, 2012

NOTIFICATIONS

50480895 50485816 50496142 50538420

MISCELLANEOUS DOCUMENTS

NUMBER	TITLE	DATE
516109	Mechanical – HVAC Drawing Solid Radwaste Storage Facility Workstation	April 10, 1991
	SCBA Hydro Testing Report	October 26, 2012
	SCBA Hydro Testing Report	June 27, 2012
	Diablo Canyon Personnel SCBA Qualified	January 15, 2013
	Respirator Justification Guideline	February 3, 2013

Section 4OA5: Other Activities

PROCEDURES

NUMBER	TITLE	REVISION
TS5.ID3	Buried Piping and Tanks Program	4
TS1.ID4	U1 &2, Saltwater Systems Aging Management Program	3
AD7.ID11	Fluid Leak Management Program	1
AWP E-016	Inspection Guide – Maintenance Rule & License Renewal Structural Monitoring Programs – Civil	6

NOTIFICATIONS

50469438 50286561 50532241

MISCELLANEOUS

NUMBER	TITLE	DATE
ASMP SAQH	Buried Piping and Tanks Program Quick Hit Self-Assessment	April 26, 2012
Calculation No. 9000041219	Buried Piping and Tanks Program, Inspection Plan Development, Units 1 and 2	December 4, 2012
Vendor Analysis DC6023266-1-1	Site Specific Risk Report: Diablo Canyon Power Plant	December 8, 2010
Program Health Report (Q4-2012)	Buried Pipe Program Health Report	December 19, 2012
	Engineering Program: Buried Piping Program Owner Position-Specific Requirements	March 22, 2012

Section 4OA7: Licensee-Identified Violations

PROCEDURES

NUMBER	TITLE	REVISION
OP J-6B:VI	Diesel Generators: Manual Operation of DG 2-3	27
OP J-2:V	U2, Backfeeding the Unit from the 500kV System	14
EOP E-0	U2, Reactor Trip or Safety Injection	34
EOP ECA-0.3	Restore 4kV Buses	14
STP M-9A	U1 & 2, Diesel Engine Generator Routine Surveillance Test	93
STP M-9I	U1 & 2, Diesel Generator Start and Load Tracking	24
MP M-21.7A	Diesel Engine Fuel Oil Booster Pump	4

PROCEDURES

NUMBER	TITLE	REVISION
MP M-21.7B	Diesel Engine 2-3 Fuel Oil Booster Pump	3
STP M-21-ENG.1	U1 &2, Diesel Engine Generator Inspection (Every Refueling Outage)	17

DRAWINGS

NUMBER	TITLE	REVISION
502110, Sheet 1	Single Line Diagram 500/230/25/12/4.16 kV Systems	19

NOTIFICATIONS

50509141	50509142	50509143	50509144	50509145
50509146	50507580	50507710	50509134	50507816

LIST OF ACRONYMS

ADAMS	Agencywide Document Access and Management System
ALARA	as low as reasonably achievable
ASME	American Society of Mechanical Engineers
CCW	Component Cooling Water
CCVT	Capacitance Coupled Voltage Transformer
CFR	Code of Federal Regulations
DCM	Design Criteria Memorandum
EDG	Emergency Diesel Generator
FHA	Fuel Handling Accident
FSARU	Final Safety Analysis Report Update
GSW	General Welding Standard
LCO	Limiting Condition for Operation
LER	Licensee Event Report
NCV	Non-cited Violation
NDE	nondestructive examination
NEI	Nuclear Energy Institute
NIOSH	National Institute for Occupational Safety and Health (U.S. Public Health Service)

NRC	Nuclear Regulatory Commission
NUPIC	Nuclear Procurement Issues Committee
OSC	Operational Support Center
PDI	Performance Demonstration Iniative
PG&E	Pacific Gas and Electric
PPC	Plant Process Computer
RCE	Root Cause Evaluation
RCS	reactor coolant system
RVRLIS	Reactor Vessel Refueling Level Indication System
SCBA	Self-Contained Breathing Apparatus
STA	shift technical advisor

The following items are requested for the
Occupational/Public Radiation Safety Inspection
at Diablo Canyon
February 11 – 15, 2013
Integrated Report 2013002

Inspection areas are listed in the attachments below.

Please provide the requested information on or before January 28, 2013.

Please submit this information using the same lettering system as below. For example, all contacts and phone numbers for Inspection Procedure 71124.01 should be in a file/folder titled "1- A," applicable organization charts in file/folder "1- B," etc.

If information is placed on *ims.certrec.com*, please ensure the inspection exit date entered is at least 30 days later than the onsite inspection dates, so the inspectors will have access to the information while writing the report.

In addition to the corrective action document lists provided for each inspection procedure listed below, please provide updated lists of corrective action documents at the entrance meeting. The dates for these lists should range from the end dates of the original lists to the day of the entrance meeting.

If more than one inspection procedure is to be conducted and the information requests appear to be redundant, there is no need to provide duplicate copies. Enter a note explaining in which file the information can be found.

If you have any questions or comments, please contact Larry Ricketson at (817) 200-1165 or Larry.Ricketson@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011.

1. Radiological Hazard Assessment and Exposure Controls (71124.01)
Date of Last Inspection: May 7, 2012

A. List of contacts and telephone numbers for the Radiation Protection Organization Staff and Technicians

B. Applicable organization charts

C. Audits, self-assessments, and LERs written since date of last inspection, related to this inspection area

D. Procedure indexes for the radiation protection procedures

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
1. Radiation Protection Program Description
2. Radiation Protection Conduct of Operations
3. Personnel Dosimetry Program
4. Posting of Radiological Areas
5. High Radiation Area Controls
6. RCA Access Controls and Radworker Instructions
7. Conduct of Radiological Surveys
8. Radioactive Source Inventory and Control
9. Declared Pregnant Worker Program

F. List of corrective action documents (including corporate and subtiered systems) since date of last inspection
1. Initiated by the radiation protection organization
2. Assigned to the radiation protection organization

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable" so the inspector can perform word searches.

If not covered above, a summary of corrective action documents since date of last inspection involving unmonitored releases, unplanned releases, or releases in which any dose limit or administrative dose limit was exceeded (for Public Radiation Safety Performance Indicator verification in accordance with IP 71151)

G. List of radiologically significant work activities scheduled to be conducted during the inspection period (If the inspection is scheduled during an outage, please also include a list of work activities greater than 1 rem, scheduled during the outage with the dose estimate for the work activity.)

H. List of active radiation work permits

I. Radioactive source inventory list

3. In-Plant Airborne Radioactivity Control and Mitigation (71124.03)
Date of Last Inspection: May 9, 2011

A. List of contacts and telephone numbers for the following areas:
1. Respiratory Protection Program
2. Self-contained breathing apparatus

B. Applicable organization charts

C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support (SCBA), and LERs, written since date of last inspection related to:
1. Installed air filtration systems
2. Self-contained breathing apparatuses

D. Procedure index for:
1. use and operation of continuous air monitors
2. use and operation of temporary air filtration units
3. Respiratory protection

E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
1. Respiratory protection program
2. Use of self-contained breathing apparatuses
3. Air quality testing for SCBAs

F. A summary list of corrective action documents (including corporate and subtiered systems) written since date of last inspection, related to the Airborne Monitoring program including:
1. continuous air monitors
2. Self-contained breathing apparatuses
3. respiratory protection program

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide documents which are "searchable."

G. List of SCBA qualified personnel - reactor operators and emergency response personnel

H. Inspection records for self-contained breathing apparatuses (SCBAs) staged in the plant for use since date of last inspection.

I. SCBA training and qualification records for control room operators, shift supervisors, STAs, and OSC personnel for the last year.

A selection of personnel may be asked to demonstrate proficiency in donning, doffing, and performance of functionality check for respiratory devices.

PAPERWORK REDUCTION ACT STATEMENT

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, Control Number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

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

Information Request

January 3, 2013

Notification of Inspection and Request for Information

Diablo Canyon Nuclear Power Plant

NRC Inspection Report 05000323/2013002

On February 11, 2013, reactor inspectors from the Nuclear Regulatory Commission's (NRC) Region IV office will perform the baseline inservice inspection at Diablo Canyon, Unit 2, using NRC Inspection Procedure 71111.08, "Inservice Inspection Activities." Experience has shown that this inspection is a resource intensive inspection both for the NRC inspectors and for your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this inspection. These documents have been divided into two groups. The first group (Section A of the enclosure) identified information to be provided prior to the inspection to ensure that the inspectors are adequately prepared. The second group (Section B of the enclosure) identifies the information the inspectors will need upon arrival at the site. It is important that all of these documents are up-to-date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

We have discussed the schedule for these inspection activities with your staff and understand that our regulatory contact for this inspection will be Mr. Michael McCoy of your licensing organization. The tentative inspection schedule is as follows:

Preparation week: February 4, 2013

Onsite weeks: February 11 through February 22, 2013

Our inspection dates are subject to change based on your updated schedule of outage activities. If there are any questions about this inspection or the material requested, please contact the lead inspector Isaac Anchondo at (817) 200-1152 (Isaac.Anchondo@nrc.gov).

A.1 ISI/Welding Programs and Schedule Information

a) A detailed schedule (including preliminary dates) of:

i. Nondestructive examinations planned for ASME Code Class Components performed as part of your ASME Section XI, risk informed (if applicable), and augmented inservice inspection programs during the upcoming outage.

ii. Examinations planned for Alloy 82/182/600 components that are not included in the Section XI scope (If applicable)

iii. Examinations planned as part of your boric acid corrosion control program (Mode 3 walkdowns, bolted connection walkdowns, etc.)

iv. Welding activities that are scheduled to be completed during the upcoming outage (ASME Class 1, 2, or 3 structures, systems, or components)

b) A copy of ASME Section XI Code Relief Requests and associated NRC safety evaluations applicable to the examinations identified above.

A list of ASME Code Cases currently being used to include the system and/or component the Code Case to which they are applied.

c) A list of nondestructive examination reports which have identified recordable or rejectable indications on any ASME Code Class components since the beginning of the last refueling outage. This should include the previous Section XI pressure test(s) conducted during start up and any evaluations associated with the results of the pressure tests.

d) A list including a brief description (e.g., system, code class, weld category, nondestructive examination performed) associated with the repair/replacement activities of any ASME Code Class component since the beginning of the last outage and/or planned this refueling outage.

e) If reactor vessel weld examinations required by the ASME Code are scheduled to occur during the upcoming outage, provide a detailed description of the welds to be examined and the extent of the planned examination. Please also provide reference numbers for applicable procedures that will be used to conduct these examinations.

f) Copy of any 10 CFR Part 21 reports applicable to structures, systems, or components within the scope of Section XI of the ASME Code that have been identified since the beginning of the last refueling outage.

g) A list of any temporary noncode repairs in service (e.g., pinhole leaks).

h) Please provide copies of the most recent self-assessments for the inservice inspection, welding, and Alloy 600 programs

A.2 Boric Acid Corrosion Control Program

a) Copy of the procedures that govern the scope, equipment and implementation of the inspections required to identify boric acid leakage and the procedures for boric acid leakage/corrosion evaluation.

b) Please provide a list of leaks (including code class of the components) that have been identified since the last refueling outage and associated corrective action documentation. If during the last cycle, the unit was shut down, please provide documentation of containment walkdown inspections performed as part of the boric acid corrosion control program.

A.3 Additional Information Related to all Inservice Inspection Activities

a) A list with a brief description of inservice inspection, and boric acid corrosion control program related issues (e.g., PVAR) entered into your corrective action program since the beginning of the last refueling outage. For example, a list based upon data base searches using key words related to piping, such as inservice inspection, ASME Code, Section XI, NDE, cracks, wear, thinning, leakage, rust, corrosion, boric acid, or errors in piping examinations.

b) Provide training (e.g., Scaffolding, Fall Protection, FME, Confined Space) if they are required for the activities described in A.1 through A.4.

c) Please provide names and phone numbers for the following program leads:

Inservice inspection (examination, planning)

Containment exams

Reactor pressure vessel head exams

Snubbers and supports

Repair and replacement program

Licensing

Site welding engineer

Boric acid corrosion control program

Steam generator inspection activities (site lead and vendor contact)

B. Information to be Provided Onsite to the Inspector(s) at the Entrance Meeting (February 11, 2013):

B.1 Inservice Inspection / Welding Programs and Schedule Information

a) Updated schedules for inservice inspection/nondestructive examination activities, including planned welding activities, and schedule showing contingency repair plans, if available.

b) For ASME Code Class welds selected by the inspector from the lists provided from section A of this enclosure, please provide copies of the following documentation for each subject weld:

   i. Weld data sheet (traveler).

   ii. Weld configuration and system location.

   iii. Applicable Code Edition and Addenda for weldment.

   iv. Applicable Code Edition and Addenda for welding procedures.

   v. Applicable welding procedures used to fabricate the welds.

   vi. Copies of procedure qualification records (PQRs) supporting the weld procedures from B.1.b.v.

   vii. Copies of welder's performance qualification records (WPQ).

   viii. Copies of the nonconformance reports for the selected welds (If applicable).

   ix. Radiographs of the selected welds and access to equipment to allow viewing radiographs (if radiographic testing was performed).

   x. Copies of the preservice examination records for the selected welds.

   xi. Readily accessible copies of nondestructive examination personnel qualifications records for reviewing.

c) For the inservice inspection related corrective action issues selected by the inspectors from section A of this enclosure, provide a copy of the corrective actions and supporting documentation.

d) For the nondestructive examination reports with relevant conditions on ASME Code Class components selected by the inspectors from Section A above, provide a copy of the examination records, examiner qualification records, and associated corrective action documents.

e) A copy of (or ready access to) most current revision of the inservice inspection program manual and plan for the current interval.

f) For the nondestructive examinations selected by the inspectors from section A of this enclosure, provide a copy of the nondestructive examination procedures used to perform the examinations (including calibration and flaw characterization/sizing procedures). For ultrasonic examination procedures qualified in accordance with ASME Code, Section XI, Appendix VIII, provide documentation supporting the procedure qualification (e.g. the EPRI performance demonstration qualification summary sheets). Also, include qualification documentation of the specific equipment

to be used (e.g., ultrasonic unit, cables, and transducers including serial numbers) and nondestructive examination personnel qualification records.

B.2 Boric Acid Corrosion Control Program

a) Please provide boric acid walk down inspection results, an updated list of boric acid leaks identified so far this outage, associated corrective action documentation, and overall status of planned boric acid inspections.

b) Please provide any engineering evaluations completed for boric acid leaks identified since the end of the last refueling outage. Please include a status of corrective actions to repair and/or clean these boric acid leaks. Please identify specifically which known leaks, if any, have remained in service or will remain in service as active leaks.

B.3 Codes and Standards

a) Ready access to (i.e., copies provided to the inspector(s) for use during the inspection at the onsite inspection location, or room number and location where available):

    i. Applicable Editions of the ASME Code (Sections V, IX, and XI) for the inservice inspection program and the repair/replacement program.

b) Copy of the performance demonstration initiative (PDI) generic procedures with the latest applicable revisions that support site qualified ultrasonic examinations of piping welds and components (e.g., PDI-UT-1, PDI-UT-2, PDI-UT-3, PDI-UT-10, etc.).

c) Boric Acid Corrosion Guidebook Revision 1 – EPRI Technical Report 1000975.