



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 E. LAMAR BLVD.
ARLINGTON, TX 76011-4511

February 11, 2014

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 05000275/2013005 and 05000323/2013005**

Dear Mr. Halpin:

On December 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant. On January 16 and February 7, 2014, the NRC inspectors discussed the results of this inspection with you and members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented three findings of very low safety significance (Green) in this report. Two of these findings involved violations of NRC requirements. Further, inspectors documented a licensee-identified violation which was determined to be of very low safety significance. The NRC is treating this violation as a non-cited violation consistent with Section 2.3.2.a of the Enforcement Policy.

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

If you disagree with the cross-cutting aspects assignment or the finding not associated with a regulatory requirement 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 Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's

E. Halpin

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Sincerely,

/RA/

Wayne C. Walker, Branch Chief
Project Branch A
Division of Reactor Projects

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

Enclosure:
NRC Inspection Report 05000275/2013005
and 05000323/2013005
w/ Attachment: Supplemental Information

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REGION IV

Docket: 05000275; 05000323

License: DPR-80; DPR-82

Report: 05000275/2013005; 05000323/2013005

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Power Plant, Units 1 and 2

Location:

Redacted

Redacted

Dates: September 22 through December 31, 2013

Inspectors: T. Hipschman, Senior Resident Inspector
G. Guerra, Emergency Preparedness Inspector, Plant Support Branch 1
R. Kumana, Resident Inspector, Projects Branch A
J. Laughlin, Emergency Preparedness Inspector, NSIR
B. Parks, Resident Inspector
C. Smith, Resident Inspector

Approved By: Wayne Walker
Chief, Project Branch A
Division of Reactor Projects

SUMMARY

IR 05000275/2013005, 05000323/2013005; 09/22/2013 – 12/31/2013; Diablo Canyon Power Plant; Follow-up of Events and Notices of Enforcement Discretion

The inspection activities described in this report were performed between September 22, 2013, and December 31, 2013, by the resident inspectors at Diablo Canyon Power Plant along with two inspectors from the NRC's Region IV office and inspectors from other NRC offices. Three findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Components Within the Cross-Cutting Areas." Violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Initiating Events

- Green. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for failure to implement adequate oversight controls and risk assessment while performing 500kV transmission line insulator maintenance on Unit 2. This caused an initiating event due to a flashover on the main transformer lightning arrester that resulted in a reactor trip.

The failure to effectively perform a risk assessment and properly control maintenance activities that resulted in a reactor trip was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance 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. Additionally, using Inspection Manual Chapter 0612, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," this finding was determined to be of very low safety significance (Green). The licensee entered the condition into the corrective action program as Notification 50572800.

This finding had a cross-cutting aspect in the area of human performance, associated with the decision-making component, because the licensee did not demonstrate that nuclear safety was an overriding priority during this maintenance activity. Specifically, the licensee did not initially use conservative decision making in not properly categorizing the activity as a reactor trip risk (despite internal and external operating experience to the contrary), and again when the licensee did not terminate the hot washing activities when environmental conditions degraded resulting in excessive water dispersion [H.1(b)]. (Section 40A3.1)

- Green. The inspectors reviewed a Green self-revealing finding due to an inadequate procedure for calibrating non-vital bus relays. This caused an initiating event due to a main feed pump trip and unplanned downpower transient to 50 percent power on Unit 1.

The licensee's failure to maintain an adequate maintenance procedure for calibrating non-vital bus relays is a performance deficiency. Specifically, the procedure was inadequate in that it contained an optional step to position a cut-out switch so that the relay would not de-energize the bus if actuated during maintenance activities. The performance deficiency was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. In particular, when the bus de-energized and tripped the running control oil pump, and the accumulator was unable to maintain system pressure while the back-up control oil pump reached operating pressure, the main feed pump tripped which resulted in a reactor power transient greater than 20 percent. 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 transient, 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 was entered into the corrective action program as Notification 50588799.

This finding had a cross-cutting aspect in the area of human performance, associated with the work control component, because the licensee did not adequately plan and coordinate maintenance activities. Specifically, the licensee did not appropriately assess the job site conditions that could impact human performance and human-system interface by failing to incorporate operating experience into procedural guidance [H.3(a)]. (Section 40A3.2)

Cornerstone: Barrier Integrity

- Green. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after the licensee performed a design change to the control room ventilation system (CRVS) that resulted in none of the four CRVS pressurization fans being able to continuously operate if they started in response to a Phase A containment isolation or control room radiation atmosphere intake actuation signal. This resulted in declaring the Units 1 and 2 CRVS actuation instrumentation and CRVS inoperable and unplanned entry into Technical Specifications (TS) 3.3.7, "Control Room Ventilation System Actuation Instrumentation," and TS 3.7.10, "Control Room Ventilation System," respectively.

The failure to use proper design control during the CRVS modification was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Barrier Integrity cornerstone, and it adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radiological releases caused by accidents or events, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," this finding was determined to be of very low safety significance (Green) because only the radiological barrier function of the control room was affected. The licensee entered the condition into the corrective action program as Notification 50525605.

The finding had a cross-cutting aspect in the area of human performance resources component because licensee staff did not maintain complete, accurate, and up-to-date design documentation – specifically, because the functions of the pressure switches and CRVS interlocks had never been adequately described in design control documents [H.2(c)]. (Section 4OA3.3)

Licensee-Identified Violations

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and associated corrective action tracking numbers are listed in Section 4OA7 of this report.

PLANT STATUS

Unit 1 began the inspection period at essentially full power. On October 14, 2013, power was reduced to 50 percent due to an unplanned loss of a main feedwater pump. Following corrective maintenance, the unit returned to full power on October 17, 2013. On October 28, Unit 1 commenced a controlled power reduction to 50 percent for planned circulating water tunnel cleaning. Unit 1 returned to full power on November 3, 2013, and remained there for the duration of the inspection period.

Unit 2 essentially remained at full power the entire inspection period.

REPORT DETAILS

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

On December 12 and December 20, 2013, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for high winds and evaluated the licensee's implementation of these procedures. The inspectors verified that prior to high winds, the licensee had corrected weather-related equipment deficiencies identified during the previous winter.

The inspectors selected two risk-significant systems that were required to be protected from high winds:

- 500kV offsite power
- Unit 2 start-up transformer

The inspectors reviewed the licensee's procedures and design information to ensure the systems and components would remain functional when challenged by adverse weather. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems.

These activities constituted one sample of readiness for seasonal adverse weather, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On October 8, 2013, the inspectors completed an inspection of the station's readiness for impending adverse weather conditions. The inspectors reviewed plant design features, the licensee's procedures and planned actions to respond to the season's first rain, and the licensee's planned implementation of these procedures. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant.

These activities constituted one sample of readiness for impending adverse weather conditions, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.3 Readiness to Cope with External Flooding

a. Inspection Scope

On November 3, 2013, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors chose two plant areas that were susceptible to flooding:

- Unit 1 auxiliary salt water rooms
- Unit 2 auxiliary salt water rooms

The inspectors reviewed plant design features and licensee procedures for coping with flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether credited operator actions could be successfully accomplished.

These activities constituted one sample of readiness to cope with external flooding, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

a. Inspection Scope

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

- September 24, 2013, Unit 2, emergency diesel generator 2-2

- November 3, 2013, Unit 1, auxiliary salt water system

The inspectors reviewed the licensee's procedures and system design information to determine the correct lineup for the systems. They visually verified that critical portions of the systems were correctly aligned for the existing plant configuration.

These activities constituted two partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

.2 Complete Walkdown

a. Inspection Scope

On November 22, 2013, the inspectors performed a complete system walk-down inspection of the auxiliary feedwater pump 1-1. The inspectors reviewed the licensee's procedures and system design information to determine the correct auxiliary feedwater lineup for the existing plant configuration. The inspectors also reviewed outstanding work orders, open condition reports, in-process design changes, temporary modifications, and other open items tracked by the licensee's operations and engineering departments. The inspectors then visually verified that the system was correctly aligned for the existing plant configuration.

These activities constituted one complete system walk-down sample, as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Inspection

a. Inspection Scope

The inspectors evaluated the licensee's fire protection program for operational status and material condition. The inspectors focused their inspection on four plant areas important to safety:

- October 1, 2013, Unit 1 and 2, fire areas 6-A-1, 6-A-2, 6-A-3, 6-B-1, 6-B-2, 6-B-3
- October 7, 2013, Unit 1, emergency diesel generator rooms 1-1, 1-2, and 1-3
- October 8, 2013, Unit 2, emergency diesel generator rooms 2-1, 2-2, and 2-3
- October 29, 2013, Units 1 and 2 intake structure

For each area, the inspectors evaluated the fire plan against defined hazards and defense-in-depth features in the licensee's fire protection program. The inspectors

evaluated control of transient combustibles and ignition sources, fire detection and suppression systems, manual firefighting equipment and capability, passive fire protection features, and compensatory measures for degraded conditions.

These activities constituted four quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose two plant areas containing risk-significant structures, systems, and components that were susceptible to flooding:

- November 4, 2013, Units 1 and 2, auxiliary salt water pump vaults
- November 6, 2013, Unit 1, component cooling water heat exchanger room 1-1

The inspectors reviewed plant design features and licensee procedures for coping with internal flooding. The inspectors walked down the selected areas to inspect the design features, including the material condition of seals, drains, and flood barriers. The inspectors evaluated whether operator actions credited for flood mitigation could be successfully accomplished.

These activities constitute completion of two flood protection measures samples as defined in Inspection Procedure 71111.06.

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On December 20, 2013, the inspectors completed an inspection of the readiness and availability of risk-significant heat exchangers. The inspectors reviewed the data from a performance test for the Unit 2 containment fan cooler units.

These activities constitute completion of one heat sink performance annual review sample, as defined in Inspection Procedure 71111.07.

b. Findings

No findings were identified.

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

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On October 18, 2013, the inspectors observed a crew of licensed operators in the plant's simulator during requalification testing. The inspectors assessed the following areas:

- Licensed operator performance
- The ability of the licensee to administer the evaluations
- 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 Review of Licensed Operator Performance

a. Inspection Scope

On October 14, 2013, and October 28, 2013, 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 reductions in plant power. The inspectors observed the operators' performance of the following activities:

- Unit 1 post transient runback to 50 percent following the trip of main feed pump 1-1
- Unit 1 curtailment to 50 percent power for circulating water tunnel and condenser cleaning

In addition, the inspectors assessed the operators' adherence to plant procedures, including conduct of operations procedures and other operations department policies.

These activities constitute completion of two quarterly licensed operator performance samples, as defined in Inspection Procedure 71111.11.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed one instance of degraded performance or condition of safety-related structures, systems, and components (SSCs):

- December 23, 2013, Units 1 and 2, plant radiation monitors

The inspectors reviewed the extent of condition of possible common cause SSC failures and evaluated the adequacy of the licensee's corrective actions. The inspectors reviewed the licensee's work practices to evaluate whether these may have played a role in the degradation of the SSCs. The inspectors assessed the licensee's characterization of the degradation in accordance with 10 CFR 50.65 (the Maintenance Rule) and verified that the licensee was appropriately tracking degraded performance and conditions in accordance with the Maintenance Rule.

These activities constituted completion of one maintenance effectiveness sample, as defined in Inspection Procedure 71111.12.

b. Findings

No findings were identified.

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

a. Inspection Scope

On October 10, 2013, the inspectors reviewed a risk assessment performed by the licensee prior to a planned change in plant configuration and the risk management actions planned by the licensee in response to elevated risk due to tracking on 230kV transformers and the need for insulator cleaning.

The inspectors verified that this risk assessment was performed timely and in accordance with the requirements of 10 CFR 50.65 (the Maintenance Rule) and plant procedures. The inspectors reviewed the accuracy and completeness of the licensee's risk assessment and verified that the licensee implemented appropriate risk management actions based on the result of the assessment.

On October 11, 2013, the inspectors observed portions of emergent work activities that had the potential to affect the functional capability of mitigating systems due to a failed stroke time test on auxiliary feedwater valve LCV-110.

The inspectors verified that the licensee appropriately developed and followed a work plan for these activities. The inspectors verified that the licensee took precautions to minimize the impact of the work activities on unaffected structures, systems, and components (SSCs).

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed six operability determinations that the licensee performed for degraded or nonconforming structures, systems, or components (SSCs):

- October 15, 2013, operability determination of Unit 1, auxiliary feedwater pump 1-2 after failed stroke test of LCV-110
- October 17, 2013, operability determination of Unit 1 anticipated transient without scram mitigation system actuation circuitry following testing
- October 23, 2013, operability determination of Unit 1 control room Indications after failure of a control panel transformer
- October 25, 2013, operability determination of Unit 1 and Unit 2 emergency diesel generators tornado capability
- November 4, 2013, operability determination of Unit 1 condensate storage tank piping upon the identification of corrosion
- November 6, 2013 assessment of emergency diesel generator fuel oil transformer pump 0-2

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable, the inspectors verified that the licensee's compensatory measures were appropriate to provide reasonable assurance of operability. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability of the degraded SSC.

These activities constitute completion of six operability and functionality review samples, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

On December 5, the inspectors reviewed a permanent plant modification to the Unit 2 plant computer system.

The inspectors reviewed the design and implementation of the modification. The inspectors verified that work activities involved in implementing the modification did not adversely impact operator actions that may be required in response to an emergency or other unplanned event. The inspectors verified that post-modification testing was adequate to establish the functionality of the structures, systems, or components as modified.

These activities constitute completion of one sample of permanent modifications, as defined in Inspection Procedure 71111.18.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed four post-maintenance testing activities that affected risk-significant structures, systems, or components (SSCs):

- October 2, 2013, Unit 2, emergency diesel generator 2-1
- November 19, 2013 Unit 1, emergency diesel generator 1-3
- December 3, 2013, Unit 2, auxiliary feedwater pump 2-2
- December 23, 2013, Unit 1, emergency diesel generator 1-3

The inspectors reviewed licensing- and design-basis documents for the SSCs and the maintenance and post-maintenance test procedures. The inspectors observed the performance of the post-maintenance tests to verify that the licensee performed the tests in accordance with approved procedures, satisfied the established acceptance criteria, and restored the operability of the affected SSCs.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed four risk-significant surveillance tests and reviewed test results to verify that these tests adequately demonstrated that the structures, systems, and components (SSCs) were capable of performing their safety functions:

Inservice tests:

- October 15, 2013, Stroke Test of Unit 1, auxiliary feedwater pump 1-2 valve LCV-110
- November 5, 2013, surveillance test of motor driven auxiliary feedwater pump 1-2

Other surveillance tests:

- October 17, 2013, Functional Test of Unit 1 anticipated transient without scram mitigation system actuation circuitry
- December 23, 2013, Unit 1, surveillance test of emergency diesel generator 1-3

The inspectors verified that these tests met technical specification requirements, that the licensee performed the tests in accordance with their procedures, and that the results of the test satisfied appropriate acceptance criteria.

These activities constitute completion of four surveillance testing inspection samples, as defined in Inspection Procedure 71111.22.

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Testing (71114.02)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of offsite siren emergency warning systems and backup alerting methods to determine the adequacy of licensee methods for testing the alert and notification system in accordance with 10 CFR Part 50, Appendix E. The licensee's alert and notification system testing program was compared with criteria in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1; FEMA Report REP-10, "Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants," and the licensee's current FEMA-approved alert and notification system design report, "Alert and Notification Design Report," Revision 1. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.02.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation System (71114.03)

a. Inspection Scope

The inspectors discussed with licensee staff the operability of primary and back-up systems for augmenting the on-shift emergency response staff to determine the adequacy of licensee methods for staffing emergency response facilities in accordance with the requirements of 10 CFR Part 50, Appendix E. The inspectors reviewed licensee methods for staffing alternate emergency response facilities. The inspectors also reviewed periodic surveillances of the augmentation system to determine the licensee's ability to staff emergency response facilities within the response times described in the site emergency plan. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.03.

b. Findings

No findings were identified.

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

a. Inspection Scope

The Office of Nuclear Security and Incident Response (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 ML13269A256 and ML13277A112 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 three samples as defined in Inspection Procedure 71114.04 05.

b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness (71114.05)

a. Inspection Scope

The inspectors reviewed licensee records associated with maintaining the emergency preparedness program between August 2011 and November 2013, including:

- Licensee procedures
- After-action reports
- Quality Assurance audit and surveillance reports
- Program assessments
- Drill and exercise evaluation reports
- Assessments of the impact of changes to the emergency plan and emergency plan implementing procedures
- Maintenance records for equipment important to emergency preparedness

The inspectors reviewed summaries of 725 corrective action program entries assigned to the emergency preparedness department and emergency response organization and selected 32 for detailed review against the program requirements. The inspectors evaluated the response to the corrective action requests to determine the licensee's ability to identify, evaluate, and correct problems in accordance with the licensee program requirements, planning standard 10 CFR 50.47(b)(14), and 10 CFR Part 50, Appendix E.

The inspectors reviewed summaries of 103 assessments of the impact of changes to the emergency plan and emergency plan implementing procedures and selected 5 for detailed review against program requirements. The inspectors also visited the licensee's alternate emergency response facilities and reviewed their procedures for use when access to the site is restricted. The specific documents reviewed during this inspection are listed in the attachment.

These activities constitute completion of one sample as defined in Inspection Procedure 71114.05.

b. Findings

Unresolved Item – Procedures for Recommending Protective Actions for Members of the Public on the Pacific Ocean

Introduction. The inspectors identified an unresolved item associated with the implementation of the licensee's process to make protective action recommendations within the ten mile emergency planning zone (EPZ). This item remains unresolved

pending further NRC staff review to determine if this issue constitutes a violation of NRC requirements.

Description. The inspectors determined that the licensee does not make protective action recommendations for members of the public on the ocean within ten miles of the plant. The licensee also does not notify the United States Coast Guard (USCG) of emergency events. A requirement to make direct notifications was removed from the licensee's emergency plan implementing procedures (EPIP) in 2003. The licensee relies on the San Luis Obispo County government to notify the USCG to take any actions necessary to protect members of the public. The county has procedures which include a default action to recommend the USCG evacuate waterborne vessels within five nautical miles if the licensee notifies the county of a general emergency. The USCG has additional guidance recommending a two nautical mile "safety zone" for an alert or site area emergency. The licensee had initiated a condition report on November 12, 2013, identifying that other sites make protective action recommendations for water areas.

Title 10 of the Code of Federal Regulations Part 50.54(q)(2) requires the licensee to maintain an emergency plan that meets the planning standards outlined in 10 CFR 50.47(b). The planning standard outlined in 10 CFR 50.47(b)(10) requires the licensee to provide a range of protective actions for emergency workers and members of the public in the plume exposure pathway EPZ. NUREG-0654 generally defines the plume exposure EPZ as ten miles radius from the plant. The EPZ may be defined with alternate boundaries by the licensee if an adequate basis exists. Title 10 of the Code of Federal Regulations Part 50.54(q)(3) requires the licensee to obtain NRC approval for changes to the emergency plan, or perform an analysis demonstrating the changes do not reduce the effectiveness of the plan. The licensee did not obtain prior NRC approval for the 2003 revision to the EPIPs removing the direct notification to the USCG of emergency declarations.

This issue remains unresolved pending further NRC review of additional information to address the concerns described above, in order to determine the adequacy of the licensee's emergency plan and implementing procedures, whether the licensee's protective actions recommendations procedure is consistent with their licensing basis, and whether or not the issue represents a violation of 10 CFR 50.54(q)(2). In addition, more information is required to determine if the revision to the implementing procedures removing the requirement to make a direct notification to the USCG constitutes a violation of 10 CFR 50.54(q)(3).

This issue is being tracked as URI 05000275/2013005-01; 05000323/2013005-01; "Unresolved Item – Procedures for Recommending Protective Actions for Members of the Public on the Pacific Ocean."

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors observed an emergency preparedness drill on October 30, 2013, to verify the adequacy and capability of the licensee's assessment of drill performance. The inspectors reviewed the drill scenario, observed the drill from the Technical Support

Center, and reviewed the post-drill critique. The inspectors verified that the licensee's emergency classifications, off-site notifications, and protective action recommendations were appropriate and timely. The inspectors verified that any emergency preparedness weaknesses were appropriately identified by the licensee in the post-drill critique and entered into the corrective action program for resolution.

These activities constitute completion of one emergency preparedness drill observation sample, as defined in Inspection Procedure 71114.06-05.

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

40A1 Performance Indicator Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the third quarter 2013 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 Reactor Coolant System Specific Activity (BI01)

a. Inspection Scope

The inspectors reviewed the licensee's reactor coolant system chemistry sample analyses for the period of September 2012 through September 2013 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Reactor Coolant System Identified Leakage (BI02)

a. Inspection Scope

The inspectors reviewed the licensee's records of reactor coolant system (RCS) identified leakage for the period of September 2012 through September 2013 to verify the accuracy and completeness of the reported data. The inspectors reviewed the performance of RCS leakage surveillance procedure on October 7, 2013. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the reactor coolant system specific activity performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.4 Drill/Exercise Performance (EP01)

a. Inspection Scope

The inspectors sampled licensee submittals for the Drill and Exercise Performance, performance indicator for the period October 2012 through September 2013 to determine the accuracy of the licensee's reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator; assessments of performance indicator opportunities during pre-designated control room simulator training sessions, performance during the 2012 biennial exercise, and performance during other drills. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the drill/exercise performance sample as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.5 Emergency Response Organization Drill Participation (EP02)

a. Inspection Scope

The inspectors sampled licensee submittals for the Emergency Response Organization Drill Participation performance indicator for the period October 2012 through September 2013 to determine the accuracy of the licensee's reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator, rosters of personnel assigned to key emergency response organization positions, and exercise participation records. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the emergency response organization drill participation sample as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.6 Alert and Notification System Reliability (EP03)

a. Inspection Scope

The inspectors sampled licensee submittals for the Alert and Notification System performance indicator for the period October 2012 through September 2013 to determine the accuracy of the licensee's reported performance indicator data. The inspectors reviewed the licensee's records associated with the performance indicator to verify that the licensee accurately reported the indicator in accordance with relevant procedures and Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. Specifically, the inspectors reviewed licensee records and processes including procedural guidance on assessing opportunities for the performance indicator and the results of periodic alert notification system operability tests. The specific documents reviewed are described in the attachment to this report.

These activities constitute completion of the alert and notification system sample as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

.1 Routine Review

a. Inspection Scope

Throughout the inspection period, the inspectors performed daily reviews of items entered into the licensee's corrective action program. The inspectors verified that licensee personnel were identifying problems at an appropriate threshold and entering these problems into the corrective action program for resolution. The inspectors verified that the licensee developed and implemented corrective actions commensurate with the significance of the problems identified. The inspectors also reviewed the licensee's problem identification and resolution activities during the performance of the other inspection activities documented in this report.

b. Findings

No findings were identified.

.2 Semiannual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. In particular, the inspectors focused their review on notifications and several root cause reports completed in the last year which involved human performance issues, including:

- Three instances of loss of start-up power (May 2011)
- Low temperature overpressure protection inoperable to technician error (June 2012)
- Reactor trip due to a high voltage insulator flashover (October 2012)
- Control room ventilation system fans inadequate design modification (November 2012)
- Inadvertent de-energizing of 4kV bus "G" (February 2013)
- Containment isolation valve S-2-200 mispositioned during a mode change (March 2013)
- Three emergency diesel generators inoperable concurrently (June 2013)
- 500kV insulator hot washing results in a reactor trip (July 2013)
- Unit 2 spent fuel handling error (July 2013)
- Locked high radiation area found unlocked (October 2013)
- Main feed pump trip and reactor power transient due to inadvertent relay actuation (October 2013)
- Auxiliary salt water cross tie valve found closed (November 2013)
- Emergency diesel generator inoperable due to a fuel oil leak (December 2013)
- Radiation monitors RM11 and 12 inoperable as a result of a maintenance activity (December 2013)

The inspectors reviewed documents and interviewed personnel to determine if the licensee completely and accurately identified problems in a timely manner commensurate with its significance, evaluated and dispositioned operability issues, considered the extent of conditions and causes, prioritized the problem commensurate with its safety significance, identified appropriate corrective actions, and completed corrective actions in a timely manner commensurate with the safety significance of the issue.

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

b. Findings

No findings were identified. However, the inspectors identified that while the licensee appropriately identified and entered these individual issues into the corrective action program, the root and apparent causes and associated corrective actions were limited in station-wide application. Specifically, the inspectors identified a common theme in the licensee's cause evaluations which focused on maintenance leadership not consistently reinforcing human performance standards and error reduction tools. The licensee agreed with the inspectors' observations and entered the issue into the corrective action program as Notification 50601631, requiring a root cause evaluation to assess and take corrective actions relative to the adverse human performance trend more broadly than was completed for the individual station events.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected three issues for an in-depth follow-up:

- On October 22, 2013, the inspectors reviewed corrective actions associated with a Green non-cited violation issued in the first quarter of 2010 for failure to follow the requirements of the Seismically Induced System Interaction Program (SISIP) with respect to the stowage and anchoring of potential seismic hazards. The inspectors evaluated the licensee's current compliance with the program, to include a walkdown of locations in the plant and a review of a sample of required seismic hazard evaluations. The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews and compensatory actions for the violation. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate to correct the condition.
- On November 27, 2013, the inspectors reviewed the diesel fuel oil storage and supply system components, particularly for the fuel oil flow transmitter FIT-168. The inspectors identified that this flow transmitter was found out of tolerance on several occasions, and that there were no preventative maintenance activities scheduled between surveillance tests of the fuel oil transfer system. The inspectors interviewed the system engineer and reviewed the Maintenance Rule (a).1 plan for planned corrective actions. In addition, the inspectors independently verified that the inaccurate fuel flow readings from the FIT-168 fuel

flow transmitter could not affect the surveillance test results, because separate fuel oil level indicators are used to verify the fuel system is transferring the proper amount of fuel oil.

- The inspectors conducted a cumulative review of operator workarounds during the period December 2-6, 2012, for Units 1 and 2, and assessed the effectiveness of the operator workaround program to verify that the licensee was: (1) identifying operator workaround problems at an appropriate threshold; (2) entering them into the corrective action program; and (3) identifying and implementing appropriate corrective actions. The review included walkdowns of the control room panels, interviews with licensed operators and reviews of the control room discrepancies list, the lit annunciators list, the operator burden list, and the operator workaround list.

The inspectors assessed the licensee's problem identification threshold, cause analyses, extent of condition reviews, and compensatory actions. The inspectors verified that the licensee appropriately prioritized the planned corrective actions and that these actions were adequate.

These activities constitute completion of three annual follow-up samples, which included one operator work-around sample.

b. Findings

No findings were identified.

40A3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) 05000323/2013-005-01: Unit 2 Reactor Trip due to Lightning Arrester Flashover

Introduction. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants" for failure to implement adequate oversight controls and risk assessment while performing 500kV transmission line insulator maintenance on Unit 2. This caused an initiating event due to a flashover on the main transformer lightning arrester that resulted in a reactor trip.

Description. On July 10, 2013, with Diablo Canyon Power Plant Unit 2 at 100 percent power, PG&E personnel were performing periodic hot washing of 500kV transmission line insulators. The purpose of hot washing the insulators is to remove contaminants that can degrade the mechanical and insulating properties which could result in a flashover. A flashover is a high voltage short-circuit to ground event. During the hot washing of the Unit 2 500kV Phase A dead-end insulators, an overspray of wash water drifted onto the 500kV main transformer Phase A lightning arrester, resulting in a flashover to ground. This actuated the 500kV differential protection relay, which opened the Unit 2 main generator output breakers as designed. This resulted in a Unit 2 main turbine trip, and a reactor protection reactor trip, also as designed. The reactor protection system and engineered safeguards features performed as expected, and operators placed Unit 2 in a hot shutdown condition. There were no complications other

than damage to the A Phase lightning arrester. Following repairs, Unit 2 was returned to service on July 14, 2013.

The inspectors reviewed the licensee's root-cause evaluation, as well as conducted an independent review. The inspectors determined the licensee appropriately identified that the root cause of the flashover event was a result of inadequate controls that lead to wash water drifting on the A Phase lightning arrester. The water stream overspray containing dissolved dirt and sea salts was driven by wind onto the lightning arrester, overloading its ability to provide adequate resistance to ground, which resulted in a flashover. PG&E personnel did not take appropriate controls to stop the hot washing activity during a period when wind conditions resulted in excessive water dispersion, fogging, or overspray, contrary to PG&E transmission line washing requirements and techniques.

Additionally, the licensee failed to adequately assess the maintenance risk by categorizing the activity as a non-trip risk. Conflicting guidance and a change to procedure AD7.DC6, "On-line Maintenance Risk Management," resulted in licensee staff inappropriately categorizing the hot wash activity as a non-trip risk, when it should have been classified as a low trip risk. The basis for the hot washing preventative maintenance was not properly documented in the licensee preventive maintenance procedure, MA1.DC51. Because of this, the risk assessment changed over time from being characterized as a trip risk, to a non-trip risk. The trip risk was screened out per Procedure AD7.DC6, "On-line Maintenance Risk Management," as an activity which could not directly cause a reactor trip. Guidance in Section 3.15 of Procedure AD7.DC6 defined a risk activity as something that can significantly increase the probability of a reactor or turbine trip. Additionally, PG&E Grid Control Center operations routinely listed hot washing as a trip risk. Further, the licensee did not identify several industry and internal PG&E Electric Operations operating experience events that identified the potential for a flashover due to hot washing activities.

The inspectors reviewed the licensee's corrective actions which included suspending hot washing activities. Diablo Canyon personnel began hot washing the 500kV insulators at a six-week frequency in 1996 in response to a failed insulator at a PG&E substation. Prior to 1996, the 500kV dead-end insulators were washed during refueling outages. As a result of this event, Diablo Canyon staff analyzed the periodicity of performing the 500kV insulators hot washes. The licensee determined that based on operating experience and existing design, the insulators have sufficient margin to defer the maintenance activity until the next refueling outage.

Analysis. The failure to effectively perform a risk assessment and properly control maintenance activities that resulted in a reactor trip on July 10, 2013, was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance 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. Additionally, using Inspection Manual Chapter 0612, Appendix K, "Maintenance Risk Assessment and Risk Management Significance Determination Process," this finding was determined to be of very low safety significance (Green).

This finding had a cross-cutting aspect in the area of human performance, associated with the decision-making component, because the licensee did not demonstrate that nuclear safety was an overriding priority during this maintenance activity. Specifically, the licensee did not initially use conservative decision making in not properly categorizing the activity as a reactor trip risk (despite internal and external operating experience to the contrary), and again when the licensee did not terminate the hot washing activities when environmental conditions degraded resulting in excessive water dispersion.

[H.1(b)]

Enforcement. This finding is also a violation of 10 CFR 50.65(a)(4), which requires that before performing maintenance activities including, but not limited to, surveillance, post-maintenance testing, and corrective and preventive maintenance, the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment includes non-safety-related structures, systems and components whose failure could cause a reactor scram or actuation of a safety-related system. Contrary to this requirement, the licensee failed to assess the maintenance activity as a reactor trip initiating event by classifying the activity as a non-trip risk. Because this finding was of very low safety significance and was entered into the corrective action program as Notification 50579100, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000323/20130055-02, "Reactor Trip due to a Lightning Arrester Flashover."

.2 (Closed) LER 05000275/2013-007-00: Auxiliary Feedwater Actuation Due to a Main Feedwater Pump Trip

Introduction. The inspectors reviewed a Green self-revealing finding due to an inadequate procedure for calibrating non-vital bus relays. This caused an initiating event due to a main feed pump trip and unplanned downpower transient to 50 percent power on Unit 1.

Description. On October 14, 2013, with Unit 1 at 100 percent power, main feedwater pump 1-1 tripped. This event began when maintenance technicians inadvertently contacted a 480V bus overcurrent relay. When the relay tripped, the non-vital 480V bus 15D de-energized. As a result, the inservice control oil pump tripped, and the backup control oil pump started as designed; however, a degraded control oil system accumulator was not able to maintain control oil system pressure long enough for the back-up control oil pump to develop pressure before the main feed pump 1-1 protective logic tripped the pump. In response, plant operators rapidly reduced power from 100 percent to 50 percent power and manually started the auxiliary feedwater pumps per plant procedures and conditions. Feedwater and turbine control systems operated as designed, mitigating the loss of a single feed pump from full power.

Diablo Canyon personnel determined that the cause of the relay trip was failure to incorporate operating experience in the relay maintenance procedure. Operating experience documented that it was possible for the relay cover's reset arm to come into contact with the relay during replacement of the cover following the calibration. The

calibration procedure contained an optional step to position a cut-out switch so that the relay would not de-energize the bus if actuated. Although technicians discussed whether they should reposition the switch, they determined it was not necessary. The technicians were unaware that the cover lever could come in contact with the relay and actuate the trip circuit. Inadequate procedural guidance and not incorporating operating experience were identified as causes for the unintended bus de-energization.

Normally, a single bus de-energization should not result in a plant power transient because plant systems have backup or redundant equipment to provide for reliability. Although the main feed pump 1-1 back-up oil pump started as designed upon the loss of the running control oil pump, the control oil accumulator did not maintain system pressure as designed, resulting in the protective action to trip the main feed pump. PG&E missed an opportunity to identify and correct the degraded accumulator prior to this event. On June 29, 2013, while preparing to exit a forced outage, main feed pump 1-1 was placed into service. Operators noticed an abnormal low nitrogen pressure on the accumulator and initiated a notification to resolve the problem. In the evaluation, engineering personnel did not fully identify the problem with the accumulator not maintaining pressure and did not provide an adequate corrective action before returning it to service. This created a hidden system vulnerability when the bus 15D de-energization tripped the running control oil pump and the accumulator was unable to maintain system pressure while the back-up control oil pump reached operating pressure. Following this event, maintenance personnel replaced the accumulator bladder.

Analysis. The licensee's failure to maintain an adequate maintenance procedure for calibrating non-vital bus relays is a performance deficiency. Specifically, the procedure was inadequate in that it contained an optional step to position a cut-out switch so that the relay would not de-energize the bus if actuated during maintenance activities. The performance deficiency was more than minor because, if left uncorrected, the performance deficiency had the potential to lead to a more significant safety concern. In particular, when the bus de-energized and tripped the running control oil pump, and the accumulator was unable to maintain system pressure while the back-up control oil pump reached operating pressure, the main feed pump tripped which resulted in a reactor power transient greater than 20 percent. 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 transient, 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 work control component, because the licensee did not adequately plan and coordinate maintenance activities. Specifically, the licensee did not appropriately assess the job site conditions that could impact human performance and human-system interface by failing to incorporate operating experience into procedural guidance. [H.3(a)]

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 Notifications 50598753, 50588110, and 50588799. Because this finding does not involve a violation and is of very low safety significance (Green), it is identified

as a finding: FIN 05000275/2013005-03, "Auxiliary Feedwater Actuation Due to a Main Feedwater Pump Trip."

.3 (Closed) LER 05000275; 05000323/2012-008-00: Loss of Control Room Ventilation System Due to Inadequate Design Control

Introduction. The inspectors reviewed a Green self-revealing non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," after the licensee performed a design change to the control room ventilation system (CRVS) that resulted in none of the four CRVS pressurization fans being able to continuously operate if they started in response to a Phase A containment isolation or control room radiation atmosphere intake actuation signal. This resulted in declaring the Units 1 and 2 CRVS actuation instrumentation and CRVS inoperable, and an unplanned entry into Technical Specification (TS) 3.3.7, "Control Room Ventilation System Actuation Instrumentation," and TS 3.7.10, "Control Room Ventilation System," respectively.

Description. In October 2012, Diablo Canyon personnel completed modifications and testing of the Units 1 and 2 CRVS by adding a back-draft damper in each unit's CRVS recirculation line. These dampers were designed to minimize the amount of unfiltered air entering the control room when one train is not in operation.

On November 27, 2012, while performing a functional test of the CRVS pressurization system, operators identified that none of the four CRVS pressurization fans would continuously operate if they started in response to a safety injection or control room atmosphere intake radiation actuation signal. Operators declared the Units 1 and 2 CRVS actuation instrumentation inoperable and entered TS 3.3.7, "Control Room Ventilation System Actuation Instrumentation," as directed by TS 3.3.7, Condition B, operators also declared one train of CRVS inoperable and entered TS 3.7.10, Condition A.

Licensee troubleshooting efforts determined that the recent installation of back-draft dampers and post-modification CRVS flow balancing resulted in a higher static head in CRVS common ducting during recirculation operation. This caused pressurization fan cycling due to actuation of the system pressure switches. The original pressurization system design utilized pressure switches to provide interlocks which precluded running two fans simultaneously by causing the non-associated fan to shut off. This feature was originally designed to protect against over pressurization of the system ducting. Soon after initial system construction, the pressurization fans were modified such that over-pressurization was no longer possible, but the pressure interlocks remained in the actuation circuitry. Per design basis document Design Criteria Memorandum (DCM) S-23F, "Control Room HVAC System," the pressure switches were only identified as providing a low pressure permissive to start a redundant fan. Therefore, engineers involved in the damper modification and flow rebalancing did not recognize that the same pressure switches also provided an over-pressurization interlock. Following these modifications, the pressurization fan that was selected to run increased static pressure in ducting downstream of the pressurization fans enough to exceed the setpoint of all the pressure switches that indicate their associated fan is running. Thus, this condition caused the operating fan to shut down, which lowered the common-header static pressure below the setpoint of the pressure switch. This reduction of static pressure in the common header resulted in the restart of the pressurization fan. Thus, with the on-

and-off cycling of the pressurization fan, the control room ventilation recirculation mode would not be sustained upon a Phase A containment isolation or radiation monitor actuation. However, Mode 4 CRVS operation could be sustained by control room operator manual action taken as directed by DCPD Emergency Operating Procedure E-0, "Reactor Trip or Safety Injection," Appendix E, "ESP Auto Actions, Secondary and Auxiliaries Status."

Analysis. The failure to use proper design control during the CRVS modification was a performance deficiency. The performance deficiency was more than minor because it was associated with the human performance attribute of the Barrier Integrity cornerstone, and it adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radiological releases caused by accidents or events, and is therefore a finding. Using Inspection Manual Chapter 0609, Attachment 04, "Initial Characterization of Findings," and Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," this finding was determined to be of very low safety significance (Green) because only the radiological barrier function of the control room was affected. The finding had a cross-cutting aspect in the area of human performance resources component because licensee staff did not maintain complete, accurate, and up-to-date design documentation. Specifically, because the functions of the pressure switches and CRVS interlocks had never been adequately described in design control documents. [H.2(c)]

Enforcement. Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components. Contrary to the above, in October 2012, the licensee completed a design change to the control room ventilation system that resulted in none of the four CRVS pressurization fans being able to continuously operate if they started in response to a Phase A containment isolation or control room radiation atmosphere intake actuation signal. This resulted in declaring the Units 1 and 2 CRVS actuation instrumentation and CRVS inoperable and an unplanned entry into Technical Specifications (TS) 3.3.7, "Control Room Ventilation System Actuation Instrumentation," and TS 3.7.10, "Control Room Ventilation System," respectively. Because this finding was of very low safety significance and was entered into the corrective action program as Notification 50525605, this violation is being treated as a non-cited violation consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000275; 05000323/2012008-04, "Loss of Control Room Ventilation System Due to Inadequate Design Control."

.4 (Closed) Licensee Event Report (LER) 05000275/1-2013-004-00: All Three Unit 1 Emergency Diesel Generators Momentarily Inoperable

On June 23, 2103, following a loss of 230kV offsite power, Unit 1 control room operators did not enter LCO 3.0.3 when they simultaneously made all three emergency diesel generators inoperable by simultaneously placing them all in manual. When 230kV startup power to the site was lost due to an electrical fault on the grid, all diesel

generators started automatically, as designed. The response procedure directs the operators to shut down the unloaded EDGs and place them in standby. The operators chose to first place all three EDG's in "manual," which makes them inoperable, and then shut them down and restored to "auto" one by one. This resulted in all three EDGs being inoperable for approximately two minutes. The licensee identified this condition the following day during a routine supervisory review, and subsequently followed up with the required 8-hour non-emergency report to the NRC for an unanalyzed condition. The inspectors dispositioned the failure to comply with technical specifications as a licensee identified violation in Section 4OA7 of this report.

No additional deficiencies were identified during the review of these Licensee Event Reports supplemental revisions. This Licensee Event Report is closed.

These activities constitute completion of four event follow-up samples, as defined in Inspection Procedure 71153.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On November 21, 2013, the inspectors presented the results of the onsite inspection of the licensee's emergency preparedness program to Mr. [Redacted] Manager, Regulatory Services, and other members of the licensee's staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 16, 2014, the 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.

On February 7, 2014, the inspectors presented additional information regarding 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 violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a non-cited violation.

- Technical Specification 3.8.1, Condition I, states, "when two or more Emergency Diesel Generators (EDGs) and one or more required offsite circuits are inoperable, the required action is to enter Limiting Condition for Operation (LCO) 3.0.3, which requires a unit shutdown initiated within one hour." Contrary to this, on June 23, 2013, following a loss of 230kV offsite power, Unit 1 control room operators did not enter LCO 3.0.3 when they simultaneously made all three EDGs inoperable by placing them all in manual. When

230kV startup power to the site was lost due to an electrical fault on the grid, all diesel generators started automatically, as designed. The response procedure directs the operators to shut down the unloaded EDGs and place them in standby. The operators chose to first place all three EDG's in "manual", which makes them inoperable, and then shut them down and restored to "auto" one by one. This resulted in all three EDGs being inoperable for approximately two minutes. The licensee identified this condition the following day during a routine supervisory review and subsequently followed up with the required 8-hour non-emergency report to the NRC for an unanalyzed condition. The performance deficiency was more than minor because it was associated with operating equipment lineup area of the configuration control attribute of the mitigating systems cornerstone and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). In accordance with IMC 0609 Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," this violation did not require a detailed risk evaluation because it did not represent an actual loss of diesel generator function for greater than the Technical Specification allowed outage time, and the risk-significant function was not lost, even though the design basis start would not have occurred. Therefore, this violation was of very low safety significance (Green). The licensee entered the issue into the corrective action program as Notification 50570582. Corrective actions included implementing more stringent requirements for supervisory oversight of plant manipulations and modifying the response procedure to specify sequential steps for placing EDGs in manual one at a time when securing.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

B. Allen, Site Vice President

Redacted Supervisor, Engineering

Redacted Manager, Engineering

Redacted Manager, Regulatory Services

A. Bates, Director, Engineering Services

Redacted Manager, Engineering

Redacted Supervisor, Engineering

J. Fledderman, Director, Strategic Projects

Redacted Senior Manager

P. Gervas, Assistant Director, Station Director

M. Gibbons, Acting Director, Work Control

Redacted Manager, Emergency Planning

Redacted Manager, Operations

F. Halbin, Chief Nuclear Officer

Redacted Senior Engineer

J. Hinds, Director, Quality Verification

Redacted Manager, Radiation Protection

Redacted Engineer, Mechanical Systems Engineering

T. King, Director, Nuclear Work Management

Redacted Engineering

J. MacIntyre, Director, Maintenance Services

Redacted NRC Interface, Regulatory Services

J. Nimick, Director, Operations Services

Redacted Senior Engineer

Redacted, System Engineer

Redacted Supervisor, Radiation Protection

Redacted ALARA Supervisor, Radiation Protection

Redacted Manager, Electrical Maintenance

Redacted Manager, Operation

Redacted Associate, Quality Verification

Redacted Supervisor, Dosimetry

J. Summy, Senior Director, Engineering and Projects

Redacted Station Support

J. Welsch, Station Director R. West, Manager, ICE Systems

Redacted Chemical Engineer, Chemistry

Redacted Manager, Mechanical Systems Engineering

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000275/2013005-01 05000323/2013005-01	URI	Procedures for Recommending Protective Actions for Members of the Public on the Pacific Ocean (Section 1EP5)
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Opened and Closed

05000323/2013005-02	NCV	Reactor Trip due to a Lightning Arrester Flashover (Section 4OA3.1)
05000275/2013005-03	FIN	Auxiliary Feedwater Actuation Due to a Main Feedwater Pump Trip (Section 4OA3.2)
05000275/2012008-04 05000323/2012008-04	NCV	Loss of Control Room Ventilation System due to Inadequate Design Control (Section 4OA3.3)

Closed

05000323/2-2013-005-01	LER	Unit 2 Reactor Trip due to Lightning Arrester Flashover (Section 4OA3.1)
05000275/1-2013-007-00	LER	Auxiliary Feedwater Actuation Due to a Main Feedwater Pump Trip (Section 4OA3.2)
05000275; 05000323/ 1-2012-008-00	LER	Loss of Control Room Ventilation System due to Inadequate Design Control (Section 4OA3.3)
05000275/1-2013-004-00	LER	All Three Unit 1 Emergency Diesel Generators Momentarily Inoperable (Section 4OA3.4)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP J-2	Off-site Power Sources	9

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
502110	500/230/25/12/4kV Systems	19

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP J-6B:II-A	Diesel Generator 2-2 Alignment Checklist	0
OP J-6B:II-A	Diesel Generator 2-2 Alignment Checklist	0
OM6.ID13	Safety at Heights: Fall Protection, Ladder Safety, Working Under Suspended Loads	18
OP D-1:II	Auxiliary Feedwater System – Alignment Checklist	0

Drawings

<u>Number</u>	<u>Title</u>
102014	Piping Schematic-Somponent Cooling Water System

Section 1R05: Fire Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-70C	Inspection of ECG Doors	24
STP M-39A1	U1 & 2, Routine Surveillance Test of Diesel Generator 1-1 (2-1) Room Carbon Dioxide Fire System Operation	16
DCM S-18	Fire Protection System	13B
OM8.ID4	Control of Flammable and Combustible Materials	20
OM8.ID1	Fire Loss Prevention	24
ECG 18.7	Fire Rated Assemblies	10

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
111906	Units 1 and 2 Fire Drawings, Sheets 1-32	6

Section 1R06: Flood Protection Measures

Work Orders

64079046	64065780
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Section 1R07: Heat Sink Performance

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-51	Routine Surveillance Test of Containment Fan Cooler Units	January 20, 2013
STP M-51	Routine Surveillance Test of Containment Fan Cooler Units	March 10, 2013
STP M-93A	Refueling Interval Surveillance – Containment Fan Cooler	March 13, 2013

Notifications

50592355

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP.1DC10	Conduct of Operations	39
Lesson R133S1	Fire in 480V Bus with Loss of Component Cooling Water Flow to Reactor Coolant Pumps	1a
CP M-6	Fire	34
OP AP-11	Malfunction of Component Cooling Water System	30
EOP E-0	Reactor Trip or Safety Injection	43

Section 1R12: Maintenance Effectiveness

Miscellaneous

<u>Title</u>	<u>Revision</u>
Radiation Monitoring System Reliability and Availability	October 29, 2013

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MA1.DC11	230kV Bare Hand Removal and Installation Drops	October 10, 2013

Notifications

50578562

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OM7.ID12	Operability Determination	27
OM7.ID13	Technical Evaluations	3
EOP E-2	Faulted Steam Generator Isolation	21
STP V-3P6A	Exercising Valves LCV-110 and LCV-111 Auxiliary Feedwater Pump Discharge	24
STP P-AFW-12	Routine Surveillance Test of Motor-Driven Auxiliary Feedwater Pump	18
STP I-92A	AMSAC Functional Test	7
STP I-92A	AMSAC Functional Test	8
STP M-21-A1	Emergency Diesel Generator Functional Test	95
STP M-9B	Diesel Engine Generator Routine Surveillance Test	94

Notifications

50314416	50587512	50507137	50587869	50314416
A0662030	A0692213	A0735701	A0671415	A0479517
50577766	50577917	50572400	50573100	50572174
50595324	50591862	50594028	50594186	50595251
50596161	50596125	50590178	5058999	

Section 1R19: Post-Maintenance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-9A	Diesel Engine Generator Routine Surveillance Test	94
STP M-9B	Diesel Engine Generator Routine Surveillance Test	94
STP P-AFW-22	Routine Surveillance Test of Motor-Driven Auxiliary Feedwater Pump 2-2	17

Work Orders

64103356	60052907	60053052	60053529	64045245
64085882	60056781	64050757	64052107	64080841
64089790	64089802	64091605	64103362	64057674
50439378				

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP V-3P6A	Exercising Valves LCV-110 and LCV-111 Auxiliary Feedwater Pump Discharge	24
STP P-AFW-12	Routine Surveillance Test of Motor-Driven Auxiliary Feedwater Pump	18
STP I-92A	AMSAC Functional Test	7
STP I-92A	AMSAC Functional Test	8

Notifications

50587512	50507137	50587869	50314416
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Section 1EP2: Alert and Notification System Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP MT-43	Early Warning System And Maintenance	11

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Alert and Notification Design Report	0
	Alert and Notification Design Report	1
P000129	Testing the MK 831DT Battery with the SOC 140 Battery Tester	A

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP EF-1	Activation And Operation Of The Technical Support Center	44
EP EF-2	Activation And Operation Of The Operational Support Center	33
EP EF-3	Activation And Operation Of The Emergency Operations Facility	37

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP, Appendix F	ERO On-Shift Staffing Analysis Report	4.00A
EP, Appendix D, Category S	System Malfunction	4.01A
EP, Section 7	Emergency Facilities and Equipment	4.18

Section 1EP5: Maintenance of Emergency Preparedness

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AWP EP-007	Updating Letters of Agreement	0
EP EF-11	Operation of Alternate Emergency Response Facilities	0
EP EF-9	Backup Emergency Response Facilities	11
EP G-1	Emergency Classification and Emergency Plan Activation	43
EP G-3	Notification of Off-Site Organizations	0
EP G-3	Notification of Offsite Organizations	2
EP G-3	Notification of Off-Site Agencies and Emergency Response Organization Personnel	39
EP G-3	Notification of Off-Site Agencies	40
EP G-3	Emergency Notification of Off-Site Agencies	54B
EP G-4	Assembly and Accountability	26

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP G-5	Evacuation of Non-Essential Site Personnel	14
EP MT-27	Technical Support Center and Alternate Facility Location	13
EP MT-28	Operational Support Center and Alternate Facility Location	11
EP MT-29	Emergency Operations Facility (EOF)	10
EP RB-10	Protective Action Recommendations	10
EP RB-10	Protective Action Recommendations	16
EP RB-3	Stable Iodine Thyroid Blocking	7
OM10	Emergency Preparedness	2
OM10.DC1	Emergency Preparedness Drills and Exercises	6
OM10.DC2	Emergency Response Organization On-Call	6
OM10.DC3	Emergency Response Facilities, Equipment, and Resources	6
OM10.ID2	Emergency Plan Revision and Review	11
OM10.ID4	Emergency Response Organization Management	12
OM7.ID1	Problem Identification and Resolution	43
OP1.DC17	Control of Equip Required by Technical Specifications or Designated Programs	27
OP1.DC37	Plant Logs	49
XI1.ID2	Regulatory Reporting Requirements and Reporting Process	38

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
	Cal OES – Emergency Planning Zones for Serious Nuclear Power Plant Accidents	
	Emergency Plan	4
PSS25	USCG – DCPD Emergency Response	November 2007
SOP III.01	San Luis Obispo County – Emergency Services Director	October 2012
SOP III.25	San Luis Obispo County – United States Coast Guard	June 2013

<u>Number</u>	<u>Title</u>	<u>Revision</u>
SOP III.44	San Luis Obispo County – Port San Luis Harbor District	September 2012
DCL-03-024	Emergency Plan Implementing Procedure Update	March 5, 2003
FN120390032	Emergency Preparedness Program Audit	May 3, 2012
FN123390018	Emergency Preparedness Program Audit	February 13, 2013
SAPN50527030	2013 DCPD Baseline Inspection Readiness Assessment Report	October 18, 2013

Condition Reports

50390230	50392157	50420772	50422636	50422848
50426267	50426528	50427067	50429569	50439297
50439409	50441513	50454155	50457490	50459012
50463112	50468358	50480569	50507869	50508628
50510467	50511677	50522732	50523461	50531921
50531922	50532391	50536699	50542191	50557886
50560263	50562023	50569770	50572410	50573151
50583556	50584094	50593750	50595533	

Section 40A1: Performance Indicator Verification

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AWP EP-001	Emergency Preparedness Performance Indicators	16
XI1.DC1	Collection and Submittal of NRC Performance Indicators	12
STP R-10C	Reactor Coolant System Water Inventory Balance	44

Section 40A2: Problem Identification and Resolution

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD4.ID3	SISIP Housekeeping Activities	12
	Seismically Induced Systems Interaction Manual	10
AD7.ID2	Daily Notification Review Team and Standard Plant Priority Assignment Scheme	20
AD7.ID12	Work Management Process	3

Notifications

50494799	50463051	50299740	50499634	50572174
50587627	50572355	50577917	50572400	50573100
50588799	50587467	50592711	50595324	50600007
50591862	50592561	50560387	50592561	50560826
50583459	50583562			

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion

Notifications

50572400	50573100	50572800
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Section 40A7: Licensee-Identified Violations

Notifications

50570582