



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

May 10, 2017

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 05000275/2017001 and 05000323/2017001**

Dear Mr. Halpin:

On March 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant Units 1 and 2. On April 10, 2017, the NRC inspectors discussed the results of this inspection with Ms. P. Gerfen and other members of your staff. The results of this inspection are documented in the enclosed report.

No NRC-identified or self-revealing findings were identified during this inspection. However, inspectors documented a licensee-identified violation which was determined to be of very low safety significance in this report. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, 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; and the NRC resident inspector at the Diablo Canyon Power Plant.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Mark S. Haire, Branch Chief
Project Branch A
Division of Reactor Projects

Docket Nos. 05000275 and 05000323
License Nos. DPR-80 and DPR-82

Enclosure:
Inspection Report 05000275/2017001 and
05000323/2017001
w/ Attachment: Supplemental Information

DIABLO CANYON POWER PLANT – NRC INTEGRATED INSPECTION REPORT
05000275/2017001 and 05000323/2017001 – MAY 10, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000275; 05000323
License: DPR-80; DPR-82
Report: 05000275/2017001; 05000323/2017001
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, CA
Dates: January 1 through March 31, 2017
Inspectors: C. Newport, Senior Resident Inspector
J. Reynoso, Resident Inspector
J. Drake, Senior Reactor Inspector
Approved By: Mark S. Haire
Chief, Project Branch A
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000275/2017001, 05000323/2017001; 01/01/2017 – 03/31/2017; Diablo Canyon Power Plant; integrated inspection report

The inspection activities described in this report were performed between January 1 and March 31, 2017, by the resident inspectors at Diablo Canyon Power Plant and inspectors from the NRC's Region IV office. NRC inspectors documented in this report one licensee-identified violation of very low safety significance. The significance of inspection findings is indicated by their color (i.e., Green, greater than Green, White, Yellow, or Red), and determined using Inspection Manual Chapter 0609, "Significance Determination Process," dated April 29, 2015. Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas," dated December 4, 2014. Violations of NRC requirements are dispositioned in accordance with the NRC Enforcement Policy. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," dated July 2016.

No findings were identified.

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

Units 1 and 2 began the inspection period at full power.

On January 23, 2017, Unit 1 reduced power to 55 percent to clean water boxes and condensers because of a heavy influx of debris caused by stormy seas. Unit 1 returned to full power on January 25, 2017, and operated at or near full power for the remainder of the inspection period.

On January 25, 2017, Unit 2 reduced power to 55 percent to clean water boxes and condensers because of a heavy influx of debris caused by stormy seas. Unit 2 returned to full power on January 28, 2017.

On March 14, 2017, Unit 2 reduced power to 50 percent for planned maintenance to clean the circulating water tunnels and condenser tube sheets. Unit 2 returned to full power on March 19, 2017, and operated at or near full power for the remainder of the inspection period.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On January 4, 2017, 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 to respond to heavy rains, 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.

1R04 Equipment Alignment (71111.04)

Partial Walk-Down

a. Inspection Scope

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

- January 24, 2017, Unit 1, component cooling water
- February 7, 2017, Unit 2, auxiliary feedwater pump 2-1
- February 16, 2017, Unit 1, emergency diesel generator 1-3
- March 23, 2017, Unit 2, component cooling water

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 four partial system walk-down samples 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 five plant areas important to safety:

- January 11, 2017, Units 1 and 2, auxiliary building fire areas located on the 128 and 115 foot elevations
- January 31, 2017, Unit 1, auxiliary building fire areas located on the 73 foot elevation
- February 13, 2017, Units 1 and 2, transformer fire areas located on the 85 foot elevation
- February 22, 2017, Units 1 and 2, auxiliary building fire areas located on the 85 foot elevation
- March 10, 2017, Units 1 and 2, turbine building and buttress fire areas located on the 85 foot elevation

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 five quarterly inspection samples, as defined in Inspection Procedure 71111.05.

b. Findings

No findings were identified.

.2 Annual Inspection

a. Inspection Scope

On March 5, 2017, the inspectors observed fire brigade activation for an unannounced fire drill. During this drill, the inspectors evaluated the capability of the fire brigade members, the leadership ability of the brigade leader, the brigade's use of turnout gear and fire-fighting equipment, and the effectiveness of the fire brigade's team operation. The inspectors also reviewed whether the licensee's fire brigade met NRC requirements for training, dedicated size and membership, and equipment.

These activities constituted one annual fire protection inspection sample, as defined in Inspection Procedure 71111.05-05.

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 March 1, 2017, the inspectors observed simulator examination scenarios for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the simulator training scenario.

These activities constituted 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

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. The inspectors observed the operators' performance of the following activities:

- January 10, 2017, Unit 2, solid state protection system, train A, actuation logic testing and slave relay testing

- January 11, 2017, Unit 1, starting and loading of emergency diesel generator 1-3 surveillance associated with full load engine analysis
- January 25, 2017, Unit 1, power ramp to full power following circulating water box cleaning

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

These activities constituted 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)

Routine Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed two instances of degraded performance or condition of safety-significant structures, systems, and components (SSCs):

- February 11, 2017, Units 1 and 2, emergency diesel generator fuel injection rack performance issues associated with fuel injector failures
- March 6, 2017, Units 1 and 2, component cooling water overall system health

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 two maintenance effectiveness samples, 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

The inspectors reviewed four risk assessments performed by the licensee prior to changes in plant configuration and the risk management actions taken by the licensee in response to elevated risk:

- January 16, 2017, Unit 1, safety injection pump 1-1, maintenance outage
- January 31, 2017, Unit 1, component cooling water pump 1-2 auxiliary lube oil pump, 480 V breaker repairs
- February 11, 2017, Unit 1, emergency diesel generator 1-1, major maintenance outage
- March 22, 2017, Unit 2, auxiliary feedwater pump 2-2, maintenance outage

The inspectors verified that these risk assessments were 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 assessments and verified that the licensee implemented appropriate risk management actions based on the result of the assessments.

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 SSCs.

These activities constituted completion of four 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 five operability determinations that the licensee performed for degraded or nonconforming SSCs:

- January 30, 2017, Unit 1, main generator temperature control valve 23, erratic operation
- February 6, 2017, operability determination of Unit 1, containment isolation valve NSS-9356B, inservice stroke time and valve performance
- February 15, 2017, Unit 1, emergency diesel generator 1-1, rotor pole insulation degradation
- March 13-14, 2017, functionality assessment of Unit 2, degraded fire barrier in component cooling heat exchanger room
- March 24, 2017, Units 1 and 2, pressurizer safety valves, offsite testing results outside of surveillance limits

The inspectors reviewed the timeliness and technical adequacy of the licensee's evaluations. Where the licensee determined the degraded SSC to be operable or functional, the inspectors verified that the licensee's compensatory measures were

appropriate to provide reasonable assurance of operability or functionality. The inspectors verified that the licensee had considered the effect of other degraded conditions on the operability or functionality of the degraded SSC.

These activities constituted completion of five 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 March 8-14, 2017, the inspectors reviewed a permanent plant modification for Units 1 and 2, for control room envelope and shielding modifications. 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 operability of the SSC as modified.

These activities constituted 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 six post-maintenance testing activities that affected risk-significant SSCs:

- January 3, 2017, Unit 2, component cooling water pump 2-2, 4 kV breaker relay switch adjustment and pump motor preventative maintenance and post-maintenance testing, Work Order 64096391
- January 18, 2017, Unit 2, component cooling water RCV-16, solenoid replacement and post-maintenance testing, Work Order 64017331
- January 31, 2017, Unit 1, containment spray pump 1-1, post-maintenance testing, Work Order 64140495
- February 7, 2017, Unit 1, auxiliary saltwater pump 1-1 repack, post-maintenance testing, Work Order 64161496
- February 11, 2017, Unit 1, emergency diesel generator 1-1, turbocharger replacement and post-maintenance testing, Work Order 64003178

- March 15, 2017, Unit 1, control room ventilation system motors and supply fan, post-maintenance testing, Work Orders 64161496 and 64141603

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 constituted completion of six 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 SSCs were capable of performing their safety functions:

In-service tests:

- January 23, 2017, Unit 1, exercising valve FCV-603, component cooling water heat exchanger 2, saltwater inlet, per procedure Surveillance Test Procedure (STP) V-3F5

Other surveillance tests:

- January 26, 2017, Unit 2, exercising full length control rods, per procedure STP R-1A
- February 1, 2017, Unit 2, exercising residual heat removal pump 1, suction valve 8700A, per procedure STP V-3M4A
- March 21, 2017, Unit 2, 12 kV bus D, reactor coolant pump under-frequency and under-voltage channels calibration and time response test, per procedure STP I-9

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. The inspectors verified that the licensee restored the operability of the affected SSCs following testing.

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

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 Unplanned Scrams per 7000 Critical Hours (IE01)

a. Inspection Scope

The inspectors reviewed licensee event reports (LERs) for the period of January 1, 2016, through December 31, 2016, to determine the number of scrams that occurred. The inspectors compared the number of scrams reported in these LERs to the number reported for the performance indicator. Additionally, the inspectors sampled monthly operating logs to verify the number of critical hours during the period. 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 data reported.

These activities constituted verification of the unplanned scrams per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed operating logs, corrective action program records, and monthly operating reports for the period of January 1, 2016, through December 31, 2016, to determine the number of unplanned power changes that occurred. The inspectors compared the number of unplanned power changes documented to the number reported for the performance indicator. Additionally, the inspectors sampled monthly operating logs to verify the number of critical hours during the period. 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 data reported.

These activities constituted verification of the unplanned power outages per 7000 critical hours performance indicator for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Unplanned Scrams with Complications (IE04)

a. Inspection Scope

The inspectors reviewed the licensee's basis for including or excluding in this performance indicator each scram that occurred between January 1, 2016, and December 31, 2016. 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 data reported.

These activities constituted verification of the unplanned scrams with complications performance indicator for Units 1 and 2, 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 and periodically attended the licensee's condition report screening meetings. 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 Annual Follow-up of Selected Issues

a. Inspection Scope

The inspectors selected one issue for an in-depth follow-up:

- On March 6, 2017, license renewal commitments

The inspectors reviewed the status of Pacific Gas and Electric's (PG&E) license renewal commitments in light of the recent decision by PG&E to place license renewal on hold. As part of the inspection, the inspectors assessed the commitments already put in place as a result of prior license renewal activities and PG&E's compliance with these commitments. The inspectors also reviewed planned license renewal commitments that had not been put in place and PG&E's future plans related to these commitments.

These activities constituted completion of one annual follow-up sample as defined in Inspection Procedure 71152.

b. Findings

No findings were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) LER 05000275/1-2015-002-00: Environmental Qualification of Wide Range Resistance Temperature Detectors Wiring Exceeded

a. Inspection Scope

As part of an apparent cause evaluation initiated due to failures of the Unit 1 reactor coolant system (RCS) wide range hot leg and cold leg resistance temperature detectors (RTDs), PG&E identified an incorrect insulation configuration, installed in 2010, on the thermal extension piping that houses the wires for the wide range RCS RTDs. The insulation, as installed, trapped heat inside of the thermal extension piping and overheated the associated wires. Pacific Gas and Electric determined that eight wide range RCS RTDs had either failed or operated outside of the environmental qualification temperature range. As a result, PG&E determined that the required number of wide range RTDs would not have been operable and therefore was a violation of Technical Specification 3.3.3, "Post Accident Monitoring Instrumentation." Pacific Gas and Electric determined the cause of the incorrect configuration to be insufficient guidance in the associated work package instructions. As part of the corrective actions, PG&E replaced the eight wide range RTDs, restored the insulation per design requirements, revised the drawings for the Unit 1 wide range RTDs to provide adequate level of detail, and revised the work order to include the correct drawing and level of details for proper installation of all wide range RTDs.

b. Findings

A violation of very low safety significance was identified by the licensee and 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.

This licensee event report is closed.

.2 (Closed) LER 05000323/2-2016-001-00: Reactor Trip Breakers Manually Opened During Shutdown Due to a Control Rod Movable Gripper Fuse Failure

a. Inspection Scope

On May 30, 2016, with Unit 2 in Mode 4, "Hot Shutdown," licensed operators, responding to a difference greater than 12 steps between digital rod position (DRPI) and demand rod position indication in the control room, manually opened the reactor trip breakers in accordance with plant procedures. It was identified that a failure of a control rod moveable gripper fuse was the cause of the step difference. Plant technicians replaced the fuse and plant operators confirmed proper operation of rod control by performance of associated surveillance testing. A subsequent PG&E evaluation

determined that STP R-1C, Revision 21, did not explicitly specify actions to identify improper rod position indications prior to exceeding a 12 step difference between DRPI and demand rod position indication. STP R-1C, Revision 17, dated March 2009, contained steps to withdraw the rod bank to 10 steps and then check rod control fuse integrity. These steps were added to STP R-1C as a corrective action to a previous licensee event report (LER 2-2003-004-00). Subsequently, the step was inadvertently removed in Revision 18 during a major procedure rewrite in July 2009. If this step had been in the procedure at the time of the 2016 event, the failed rod control fuse would have been identified prior to exceeding 12 steps difference between DRPI and demand rod position indication and the need for a manual reactor trip would have been prevented. The inspectors determined that PG&E's failure to provide adequate procedural guidance to prevent an unnecessary opening of the reactor trip breakers was a performance deficiency within PG&E's ability to foresee and correct. This performance deficiency was considered to be minor because it did not adversely affect a cornerstone objective, if left uncorrected, would not have led to a more significant safety concern, and could not be reasonably viewed as a precursor to a significant event. Specifically, the transient initiated by the opening of the reactor trip breakers only led to a single bank of shutdown control rods being inserted 13 steps into the core while the plant was in Mode 4 with source range neutron counts being low off scale. Pacific Gas and Electric entered the condition into their corrective action program (Notification 50855643), revised STP R-1C to include guidance regarding verification of rod motion prior to exceeding 12 steps, and initiated operator training of the changes to the procedure.

b. Findings

No findings were identified.

This licensee event report is closed.

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

40A5 Other Activities

Temporary Instruction 2515/192, "Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems."

a. Inspection Scope

The objective of this performance based Temporary Instruction is to verify implementation of interim compensatory measures associated with an open phase condition design vulnerability in electric power system for operating reactors. The inspectors conducted an inspection to determine if the licensee had implemented the following interim compensatory measures. These compensatory measures are to remain in place until permanent automatic detection and protection schemes are installed and declared operable for the open phase condition design vulnerability. The inspectors verified the following:

- The licensee identified and discussed with plant staff the lessons-learned from the open phase condition events at the U.S. operating plants including the Byron Station open phase condition and its consequences. This included conducting

operator training for promptly diagnosing, recognizing consequences, and responding to an open phase condition.

- The licensee updated plant operating procedures to help operators promptly diagnose and respond to open phase conditions on off-site power sources credited for safe shutdown of the plant.
- The licensee established and implemented periodic walkdown activities to inspect switchyard equipment such as insulators, disconnect switches, and transmission line and transformer connections associated with the offsite power circuits to detect a visible open phase condition.
- The licensee ensured that routine maintenance and testing activities on switchyard components have been implemented and maintained. As part of the maintenance and testing activities, the licensee assessed and managed plant risk in accordance with 10 CFR 50.65(a)(4) requirements.

b. Findings

No findings were identified.

40A6 Meetings, Including Exit

Exit Meeting Summary

On February 2, 2017, the inspectors presented the Temporary Instruction 2515/192 inspection results to Mr. J. Welsh, 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 April 10, 2017, the resident inspectors presented the quarterly inspection results to Ms. P. Gerfen, Senior Director Plant Manager, and other members of the licensee staff. The licensee acknowledged the issues presented. The licensee confirmed that any proprietary information reviewed by the inspectors had been returned or destroyed.

40A7 Licensee-Identified Violations

The following licensee-identified violation of NRC requirements was determined to be of very low safety significance and meets the NRC Enforcement Policy criteria for being dispositioned as a Non-Cited Violation:

- Technical Specification 3.3.3 “Post Accident Monitoring (PAM) Instrumentation,” requires at least two channels of both wide range) hot leg reactor coolant system (RCS) temperature and wide range cold leg RCS temperature RTDs to be in service. If this action is not met, TS 3.3.3 requires the restoration of all but one channel to operable status within 7 days. If this action cannot be met, TS 3.3.3 requires the plant to be shutdown to Mode 3 within 6 hours and Mode 4 within 12 hours. Contrary to the above, in October 2015 during performance of an apparent cause evaluation investigating failing wide range RCS RTDs, PG&E discovered that the plant had been operating with all channels of hot leg and cold leg wide range RCS temperature monitoring inoperable for greater than the allowed TS 3.3.3 outage time without complying with the

requirement to shut down the plant. Pacific Gas and Electric identified an incorrect insulation configuration, installed in 2010, on the thermal extension piping that houses the wires for the wide range RCS RTDs as the direct cause of the failures. The insulation, as installed, trapped heat inside of the thermal extension piping and overheated the associated wires. Pacific Gas and Electric determined that eight wide range RCS RTDs had either failed or operated outside of the environmental qualification temperature range, however the required channels remained functional. Pacific Gas and Electric determined the cause of the incorrect installation to be insufficient guidance in the associated work package instructions. The inspectors determined that PG&E's failure to develop adequate work guidance to properly install wide range RCS RTD insulation was a performance deficiency that was within PG&E's ability to foresee and correct. Pacific Gas and Electric entered this issue into their corrective action program (CAP) as Notification 50808493, replaced the eight wide range RTDs, restored the insulation per design requirements, revised the drawings for Unit 1 wide range RTDs to provide adequate level of detail, and revised the work order to include the correct drawing and level of details for proper installation of all wide range RTDs. This performance deficiency is considered more than minor, and considered a finding, because it is associated with the Mitigating Systems cornerstone attribute of equipment performance and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding in accordance with IMC 0609, Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The inspectors determined that the finding was of very low safety significance (Green) because the deficiency did not represent an actual loss of function of at least a single train for greater than its technical specification allowed outage time.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Baldwin, Director, Nuclear Site Services
D. Evans, Director, Security & Emergency Services
P. Gerfen, Senior Director Plant Manager
M. Ginn, Manager, Emergency Planning
E. Halpin, Sr. Vice President, Chief Nuclear Officer Generation
H. Hamzehee, Manager, Regulatory Services
A. Heffner, NRC Interface, Regulatory Services
J. Hinds, Director, Quality Verification
L. Hopson, Director Maintenance Services
T. Irving, Manager, Radiation Protection
K. Johnston, Director of Operations
K. Kaminski, Supervisor, Operations
D. Madsen, Regulatory Services
M. McCoy, NRC Interface, Regulatory Services
J. Morris, Senior Advising Engineer
C. Murry, Director Nuclear Work Management
J. Nimick, Senior Director Nuclear Services
L. Parker, Supervisor, STARS
A. Peck, Director, Nuclear Engineering
D. Peterson, Director, Learning Services
R. Waltos, Assistant Director, Engineering
A. Warwick, Supervisor, Emergency Planning
J. Welsch, Site Vice President
D. Williams, Operations

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

05000275/1-2015-002-00	LER	Environmental Qualification of Wide Range Resistance Temperature Detectors Wiring Exceeded (Section 4OA3.1)
05000323/2-2016-001-00	LER	Reactor Trip Breakers Manually Opened During Shutdown Due to a Control Rod Movable Gripper Fuse Failure (Section 4OA3.2)

Discussed

2515/192	TI	Inspection of the Licensee's Interim Compensatory Measures Associated with the Open Phase Condition Design Vulnerabilities in Electric Power Systems (Section 4OA5)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

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CP M-12	Stranded Plant	7
CP M-16	Severe Weather	12A

Notifications

50888589	50888797	50888703	50890580
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OP E-5:IV	Auxiliary Saltwater System-Swapping Pumps or HXs During Single CCW HX Operation	14
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OP J-6B:III-AI	Diesel Generator 1-3 Alignment Check	0
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Notifications

50896466	50491848	50906009	50906088	50494899
50623055	50853023			

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<u>Number</u>	<u>Title</u>	<u>Revision</u>
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106714	Component Cooling Water, Sheet 3	49
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107703	Auxiliary Feedwater, Sheet 3	50
107714	Component Cooling Water, Sheet 2	50
107714	Component Cooling Water, Sheet 3	44
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Procedures

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CP M-10	Fire Protection of Safe Shutdown Equipment - Unit 2	35
CP M-10	Fire Protection of Safe Shutdown Equipment - Unit 1	37
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Notifications

50888831	50655051	50802214	50890067	50317789
50861947	50896820	50896821	50896822	50896823
50896624	50896625	50684400	50874603	50634521
50905474	50905506			

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
106714	Component Cooling Water OVID	30
111906-10	Unit 2 Fire Barriers	10
663364	Constant Open Fire Doors	1
RA-13/14	Unit 2 RCA Elev. 85 feet	13
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Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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RA-4	RCA Elev. 73 feet	3
RA-5/6	Unit 1 RCA Elev. 85 feet	12
RA-9	H Block and Common Area, Elev. 115 feet	10
TB-12	Pre-Fire Protection Drawing: Turbine Building Buttress Area Elev. 85-108 foot	7
TB-14	Pre-Fire Protection Drawing: Turbine Building Elev. 85 foot, Unit 2	10
TB-23	Unit 1, Transformer Area Elev. 85 feet	6
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Work Orders

64123914	60072189	64057694	60076463	64131978
60946696				

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<u>Number</u>	<u>Title</u>	<u>Revision</u>
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Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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Notifications

50875508 50890019 50888149 50892743

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Work Order

60085871

Notifications

50724917 50890506 50818667 50876712

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Procedures

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OP O-36	Protected Equipment Postings	13A

Notifications

50808189 50466889 50469550 5088909 50893373
50893507 50893572 50896853 50849180 50875686
50876688 50896050

Drawings

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106718	Fire System Yard Loop	183

Work Orders

60092015

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STP M-70D	Inspection of Rated Fire Assemblies	21
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Notifications

50855158	50995983	50889934	50601183	50600618
50896464	50896465	50896466	50896748	

Work Orders

60018465

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
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515573	Unit 2 Fire Barriers Zones Turbine Building EI-85 foot	22

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<u>Number</u>	<u>Description</u>	<u>Revision</u>
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Procedures

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Notifications

50575782	50497328	50845057	50526287	50868044
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Work Order

68042701

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Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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STP M-21.6	Diesel Engine Turbocharger Maintenance	8
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Notifications

50518322	50868758	50888618	50888759	50888618
50815656	50895557	50896173	50896230	50896465
50902900	50896176	50896241	50896466	50896177
50896242	50901437	50896198	50896464	50902898
50861195	50877926	50681229		

Work Orders

60093467	64096391	60097140	64141603	64080779
64017331	64161496	64003178	64141685	64141728
60078270	64152243	64097188		

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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107714	Component Cooling Water, Sheet 2	50
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Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
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Notifications

50866480 50865926 50835270 50893517

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
102032	RHR, Sheet 32B	118
441227	12 kV System Bus Section D & E	21
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441310	Electrical Schematic Diagram RHR Motor Operated Valves, Sheet 1	31
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452595	Electrical Diagram of Connections Main Control Board Section 2VB1, Sheet 1	24
502650	Electrical Diagram of Connections, Sheet 1	21

Work Orders

60097722 64167009 64163194

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Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
NEI 99-02	Regulatory Assessment Performance Indicator Guideline	7
XI1.DC1	Collection and Submittal of NRC Performance Indicators	12A

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<u>Number</u>	<u>Title</u>	<u>Revision</u>
AR PK19-02	Diablo Canyon Power Plant Annunciator Response Unit 1	11
AR PK19-02	Diablo Canyon Power Plant Annunciator Response Unit 2	5
AR PK19-07	Diablo Canyon Power Plant Annunciator Response Unit 1	11

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AR PK19-07	Diablo Canyon Power Plant Annunciator Response Unit 2	4
STP I-1A	Diablo Canyon Power Plant Surveillance Test Procedure	135

Notifications

50501409 50878547 50879073

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
DCP 1000025148	Design Change Package Summary and Evaluation to install OPP (Open Phase Protection) on the 230 kV or 500 kV circuits	0
PG&E Letter DCL-12-104	Diablo Canyon Power Plant, Units 1 and 2, Ninety-Day Response to NRC Bulletin 2012-01: "Design Vulnerability In Electric Power System"	October 25, 2012
PG&E Letter DCL-14-009	Diablo Canyon Power Plant, Units 1 and 2, Response to NRC Request for Additional Information Regarding Response to NRC Bulletin 2012-01	February 3, 2014
PG&E Letter DCL-14-118	Diablo Canyon Power Plant, Units 1 and 2, Supplement to Response to NRC Request for Additional Information Regarding Response to NRC Bulletin 2012-01	December 22, 2014
R134C5	Electrical Training	0B
R134S2	Simulator Training Scenario	1a