



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

January 23, 2020

Mr. James M. Welsch
Senior Vice President, Generation
and Chief Nuclear Officer
Pacific Gas & Electric Company
Diablo Canyon Power Plant
P.O. Box 56, Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – INTEGRATED
INSPECTION REPORT 05000275/2019004 AND 05000323/2019004

Dear Mr. Welsch:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Diablo Canyon Power Plant, Units 1 and 2. On January 9, 2020, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report.

Three findings of very low safety significance (Green) are documented in this report. Two of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; the Director, Office of Enforcement; and the NRC Resident Inspector at Diablo Canyon Power Plant, Units 1 and 2.

If you disagree with a cross-cutting aspect assignment or a 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region IV; and the NRC Resident Inspector at Diablo Canyon Power Plant, Units 1 and 2.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Jeffrey E. Josey, Chief
Reactor Projects Branch A
Division of Reactor Projects

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

Enclosure:
As stated

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DIABLO CANYON POWER PLANT, UNITS 1 AND 2 – INTEGRATED INSPECTION REPORT
05000275/2019004 AND 05000323/2019004 – January 23, 2020

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 05000275 and 05000323

License Numbers: DPR-80 and DPR-82

Report Numbers: 05000275/2019004 and 05000323/2019004

Enterprise Identifier: I-2019-004-0001

Licensee: Pacific Gas & Electric Company

Facility: Diablo Canyon Power Plant, Units 1 and 2

Location: Avila Beach, California

Inspection Dates: October 1, 2019, to December 31, 2019

Inspectors: A. Athar, Resident Inspector (Acting)
W. Cullum, Reactor Inspector
J. Drake, Senior Reactor Inspector
S. Hedger, Emergency Preparedness Inspector
C. Newport, Senior Resident Inspector
J. Reynoso, Senior Resident Inspector (Acting)
W. Smith, Health Physicist

Approved By: Jeffrey E. Josey, Chief
Reactor Projects Branch A
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Diablo Canyon Power Plant, Units 1 and 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Unevaluated Preconditioning of the Quick Opening Transfer Tube Closure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000323/2019004-01 Open/Closed	None (NPP)	71111.08P
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," because the licensee established unevaluated preconditioning, with a reasonable doubt of whether the preconditioning was acceptable, prior to performing leak rate testing of the of Units 1 and 2 fuel transfer tube quick closure hatch. Specifically, the licensee routinely completed leak rate testing of the quick closure hatch post-refueling without an evaluation of the potential consequences of preconditioning. This potentially masked degradation of the quick closure hatch. The licensee entered this issue into the corrective action program as Notification 51058978.			

Failure to Identify Conditions Adverse to the Fire Protection Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275,05000323/2019004-03 Open/Closed	[H.1] - Resources	71152
The inspectors identified a Green, non-cited violation of Operating License DPR-82, License Condition 2.C.(4), "Fire Protection," Operating License DPR-80, License Condition 2.C.(5), "Fire Protection," and the requirements of National Fire Protection Association (NFPA) 13-1969, "Standards for the Installation of Sprinkler Systems," for the failure to identify conditions adverse to the fire protection program. Specifically, during required inspections of the material condition of the sprinkler system, the licensee failed to identify numerous instances of paint on sprinkler components which could adversely affect their fire suppression function.			

Human Performance Event Leads to Isolation of Seal Cooling to Reactor Coolant Pump 2-3			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green FIN 05000323/2019004-04 Open/Closed	[H.12] - Avoid Complacency	71153
<p>The inspectors reviewed a Green, self-revealed finding in that PG&E personnel failed to follow multiple station standards and procedures, including OM15.ID8, "Human Performance Error Prevention Tools," and AD2.ID1, "Procedure and Work Plan Use and Adherence."</p> <p>Specifically, PG&E operations department non-licensed operators, while venting Unit 2 reactor coolant pump seal return lines, failed to perform an appropriate task preview brief and follow procedure use and adherence standards while conducting the work, resulting in the isolation of seal flow to the reactor coolant pump 2-3, seal No. 1, for approximately 15 minutes.</p>			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000275,05000323/2019004-02	Failure to Replace Early Warning System Batteries at Periodicity Required by the Alert and Notification System Design Report	71114.02	Open

PLANT STATUS

Unit 1 began the inspection period at full power. Unit 2 entered the inspection period shut down as part of a planned refueling outage.

On December 8, 2019, Unit 1 reduced power to 50 percent to clean main condenser water boxes. Unit 1 returned to full power on December 11, 2019.

On December 13, 2019, Unit 2 returned to operation and began a controlled power ascension, returning to full power on December 23, 2019.

Units 1 and 2 operated at or near full power for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated system configurations during partial walkdowns of the Unit 2 residual heat removal cooling system train A on November 12, 2019.

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the Unit 1 containment spray system on November 25–December 20, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 2, containment 140 foot elevation on November 18, 2019
- (2) Unit 2, containment 91 foot elevation on November 19, 2019
- (3) Unit 2, turbine building 85 foot elevation on December 16, 2019

- (4) Unit 1, 12 kV switchgear room on December 18, 2019
- (5) Unit 1, auxiliary building 73 foot elevation on December 23, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the following areas:

- (1) Units 1 and 2, safety injection pump rooms on October 8, 2019
- (2) cable submergence protection in underground vault 27A containing vital bus 480 volt cables on October 28, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

- (1) The inspectors evaluated readiness and performance of the Unit 2, component cooling water heat exchangers 2-1 and 2-2 on November 20, 2019.

71111.07T - Heat Sink Performance

Triennial Review (IP Section 02.02) (4 Samples)

The inspectors evaluated heat exchanger/sink performance on the following components:

- (1) Unit 1, component cooling water heat exchanger 1, cooled by service water
- (2) Unit 1, residual heat removal heat exchanger 2, closed loop or air cooled, Section 02.02c
- (3) Unit 1, containment fan cooling Unit 5, closed loop or air cooled, Section 02.02c
- (4) Unit 1, spent fuel pool heat exchanger 1, closed loop or air cooled, Section 02.02c

71111.08P - Inservice Inspection Activities (PWR)

PWR Inservice Inspection Activities Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors verified that the reactor coolant system boundary, steam generator tubes, reactor vessel internals, risk-significant piping system boundaries, and containment boundary are appropriately monitored for degradation and that repairs and replacements were appropriately fabricated, examined and accepted by reviewing the following activities from September 23, 2019, to December 12, 2019:

03.01.a - Nondestructive Examination and Welding Activities

- Visual examination, refueling water storage tank suction piping
- Dye penetrant examination, condensate pipe weld overlay 18 x 22 reducer, 155BB
- Dye penetrant examination, condensate pipe weld overlay 18 x 22 reducer, 154BA
- Dye penetrant examination, refueling water purification pump suction from refueling water storage tank
- Ultrasonic examination, safety injection, WIB-234

- Ultrasonic examination, safety injection, WIB-235
- Radiographic film review, containment fan cooling Unit Coil 4, FW-50
- Radiographic film review, containment fan cooling Unit Coil 4, FW-53
- Radiograph film review, containment fan cooling Unit Coil 1, FW-1
- Radiograph film review, containment fan cooling Unit Coil 1, FW-2
- No Section XI welding occurred while the inspector was onsite. tungsten inert gas weld of feedwater valve FW-2-658 FW-1 was observed
- Reviewed weld package 68041231 for containment fan cooling Units 2-5

03.01.b - Pressurized-Water Reactor Vessel Upper Head Penetration Examination Activities

- The inspector observed the following reactor head penetration visual examinations: Penetration 01, 03, 12, 16, 25, 35

03.01.c – Pressurized-Water Reactor Boric Acid Corrosion Control Activities

- The inspector reviewed the following documents associated with boric acid leaks and evaluations:

Notifications: 50271697, 50282955, 50862403, 50890037, 50951567, 50966616, 50971625, 50972232, 50980805, 50987138, 50989001, 50997483, 51006395, 51006527, 51032833

03.01.d – Pressurized-Water Reactor Steam Generator Tube Examination Activities

- 100 percent of the tubes in each steam generator were inspected full length by bobbin coil. The bobbin inspections were conducted from the cold leg channel head to inspect full length of row 6 to row 96 tubes, and "candy cane" length of row 1 to row 5 tubes.
- Plus point rotating probe inspections were conducted from the cold leg and hot leg channel head, as necessary.
- A foreign object was found lodged between 2 tubes, located in the hot leg, near column 64, row 50, tubes R51C65 and R52C66. It appeared to be a small piece of tube support plate/baffle plate ligament from a feedwater heater. The tubes, hot leg R51C65, and R52C66 were inspected with bobbin and plus point probes; no tube wear was detected.

03.01.e – Problem Identification and Resolution

- The inspector reviewed 17 condition reports associated with inservice and operating experience issues and concluded that NDE/ISI-related issues and operating experience are put into the corrective action program at low levels to ensure conditions and problems are identified.

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

The inspectors observed and evaluated licensed operator performance in the control room during the following activities:

- (1) Units 1 and 2, core reload and refueling testing activities on October 14, 2019
Unit 2, infrequency performed test of emergency diesel generator 2-1, bus G voltage and frequency recovery test on November 12, 2019
Unit 1, main generator reactive power capability testing on November 14, 2019
Unit 2, reactor startup and low power physics testing on November 21, 2019

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated control room licensed operators during simulator training on November 13, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Units 1 and 2, containment spray pump shaft seal leakage on October 22, 2019
- (2) Units 1 and 2, review of annual periodic evaluation of maintenance rule requirements per 10 CFR 50.65(a)(3) on December 17, 2019

Quality Control (IP Section 02.02) (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance activities:

- (1) Units 1 and 2, review of quality control program

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 2, yellow outage risk during draindown for reactor head replacement on October 22, 2019
- (2) Unit 2, yellow outage risk during draindown to mid-loop for reactor coolant system vacuum refill on October 24, 2019
- (3) Unit 2, 2R21 turbine building floor loading evaluation on December 10, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 2, high room temperatures associated with vital battery room 2-1 on October 25, 2019
- (2) Unit 1, vital rectifier output voltage fluctuations in vital inverter IY-14 on October 29, 2019
- (3) Unit 2, high component cooling water temperature associated with train A isolated residual heat removal heat exchanger 2-1 on November 4-6, 2019
- (4) Unit 2, atmosphere dump valve PCV-22 failed stroke and actuator diaphragm leak on November 14, 2019
- (5) Unit 2, steam generator safety valve RV-58 lift during main turbine roll on December 19, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (1 Sample)

The inspectors evaluated the following temporary modifications:

- (1) Unit 2, containment high range radiation monitor cable jumper on October 26, 2019

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 2, auxiliary saltwater pump 2-2 preventative maintenance on October 9, 2019
- (2) Unit 2, vital bus 4 kV breaker 52HG14 preventative maintenance on October 11, 2019
- (3) Unit 2, containment cooling fan unit CFCU 2-5 radiator replacement on October 29, 2019
- (4) Unit 2, vital battery 22 cell replacement on December 12, 2019
- (5) Unit 1, 10 percent steam dump hand controller HIC-546 replacement on December 17, 2019

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors continued to evaluate the Unit 2 refueling outage 2R21 activities which began in the prior inspection period and completed this quarter. Specifically, in this quarter, the inspectors completed Inspection Procedure 71111.20, Sections 03.01.c through e. These activities, along with completion of Sections 03.01.a through b, which were completed and documented in the prior inspection report (ADAMS Accession No. ML 19303D548), constitute a complete sample review per the inspection procedure.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) Unit 2, diesel generator 2-1, Bus G voltage and frequency recovery test per Procedure TP TB-19001 on November 12, 2019

Inservice Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2, charging pump 2-2, in-service test per Procedure STP P-CCP-A22 on October 14, 2019

Containment Isolation Valve Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2, local leak rate testing of penetration 59A per Procedure STP V-659A on October 8, 2019

71114.02 - Alert and Notification System Testing

Inspection Review (IP Section 02.01-02.04) (1 Sample)

- (1) The inspectors evaluated the maintenance and testing of the alert and notification system from October 1, 2017, to October 18, 2019.

71114.03 - Emergency Response Organization Staffing and Augmentation System

Inspection Review (IP Section 02.01-02.02) (1 Sample)

- (1) The inspectors evaluated the readiness of the Emergency Preparedness Organization from October 1, 2017, to October 18, 2019. Inspectors also evaluated the licensee's ability to staff their emergency response facilities in accordance with emergency plan commitments.

71114.04 - Emergency Action Level and Emergency Plan Changes

Inspection Review (IP Section 02.01-02.03) (1 Sample)

- (1) The inspectors evaluated a revision to the Diablo Canyon Power Plant Emergency Plan. Section 7, Revision 4.22, was submitted to the NRC on November 18, 2019. In addition, the inspectors evaluated the 10 CFR 50.54(q) emergency plan change process and practices between October 1, 2017, and October 18, 2019. These involved review of licensee screening and evaluation documentation. The reviews of the change process documentation do not constitute NRC approval.

71114.05 - Maintenance of Emergency Preparedness

Inspection Review (IP Section 02.01 - 02.11) (1 Sample)

- (1) The inspectors evaluated the maintenance of the emergency preparedness program between October 1, 2017, and October 18, 2019. The evaluation reviewed the conduct of drills and exercises, licensee audits and assessment, and the maintenance of equipment important to emergency preparedness.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

EP01: Drill/Exercise Performance (IP Section 02.12) (1 Sample)

- (1) 10/01/2018 - 09/30/2019

EP02: ERO Drill Participation (IP Section 02.13) (1 Sample)

- (1) 10/01/2018 - 09/30/2019

EP03: Alert & Notification System Reliability (IP Section 02.14) (1 Sample)

- (1) 10/01/2018 - 09/30/2019

BI01: Reactor Coolant System (RCS) Specific Activity Sample (IP Section 02.10) (2 Samples)

- (1) Unit 1 (10/01/2018–09/30/2019)
- (2) Unit 2 (10/01/2018–09/30/2019)

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 1 (10/01/2018–09/30/2019)
- (2) Unit 2 (10/01/2018–09/30/2019)

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue. The inspectors' review was focused on fire suppression systems, but also considered the results of daily inspector corrective action program item screening and licensee trending efforts during the period from July 1, 2019, to December 31, 2019.

71153 – Follow-up of Events and Notices of Enforcement Discretion

Personnel Performance (IP Section 03.03) (1 Sample)

The inspectors reviewed personnel performance issues which contributed to the following unplanned/nonroutine transient:

- (1) Unplanned isolation of seal flow to reactor coolant pump 2-3, seal #1 on December 11, 2019

OTHER ACTIVITIES – TEMPORARY INSTRUCTION, INFREQUENT, AND ABNORMAL

Evaluation of Diablo Canyon Power Plant Safety Condition in Light of Financial Conditions

Because Pacific Gas & Electric Corporation, and its subsidiary, Pacific Gas & Electric Company (the licensee) was under bankruptcy protection/reorganization during the inspection period, NRC Region IV conducted special reviews of processes at Diablo Canyon Power Plant. Using the flexibilities in the baseline inspection program, the inspectors evaluated several aspects of the licensee's operations to determine whether the financial condition of the licensee impacted plant safety. The factors reviewed during this period included: (1) impact on staffing, (2) corrective maintenance backlog, (3) changes to the planned maintenance schedule, (4) corrective action program implementation, and (5) any reduction in outage scope, including risk-significant modifications. Considering the licensee's financial difficulties, the inspectors verified that licensee personnel continued to identify problems at an appropriate threshold and enter these problems into the corrective action program for resolution. The inspectors also verified that the licensee continued to develop and implement corrective actions commensurate with the significance of the problems identified.

The special review of processes at Diablo Canyon Power Plant included continuous reviews by the resident inspectors, as well as the specialist-led baseline inspections completed during the inspection period – triennial heat sink performance, inservice inspection, and emergency preparedness – which are documented in this report. During this period, the inspectors did not identify any indications that the licensee's financial circumstances were adversely affecting plant performance and safety.

INSPECTION RESULTS

Unevaluated Preconditioning of the Quick Opening Transfer Tube Closure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000323/2019004-01 Open/Closed	None (NPP)	71111.08P
The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," because the licensee established unevaluated preconditioning, with a reasonable doubt of whether the preconditioning was acceptable, prior to performing leak rate testing of the of Units 1 and 2, fuel transfer tube quick closure hatch. Specifically, the licensee routinely completed leak rate testing of the quick closure hatch post-refueling, without an evaluation of the potential consequences of preconditioning. This potentially			

masked degradation of the quick closure hatch. The licensee entered this issue into the corrective action program as Notification 51058978.

Description: The inspectors noted that the licensee has consistently performed the leak rate testing for the quick opening transfer tube closure post refueling operations, after the closure had been disassembled and refurbished. The licensee stated that they tested the closure in accordance with 10 CFR Part 50, Appendix J. Appendix J, Introduction, states, in part, "These test requirements provide for preoperational and periodic verification by tests of the leak-tight integrity of the primary reactor containment, and systems and components which penetrate containment of water-cooled power reactors, and establish the acceptance criteria for these tests. The purposes of the tests are to assure that (a) leakage through the primary reactor containment and systems and components penetrating primary containment shall not exceed allowable leakage rate values as specified in the technical specifications or associated bases; and (b) periodic surveillance of reactor containment penetrations and isolation valves is performed so that proper maintenance and repairs are made during the service life of the containment, and systems and components penetrating primary containment." The licensee has not performed "as found condition" testing of the closure within the maximum allowed interval of 120 months and there has been no evaluation of the impact of the preconditioning. However, since the licensee is refurbishing the hatch and performing adequate post-maintenance testing every refueling outage, the inspector determined that there is reasonable assurance that the hatch can perform its safety-related function.

Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," Section C, indicates that the NRC has endorsed Nuclear Energy Institute (NEI) 94-01, Revision 0, dated July 26, 1995, "Industry Guideline for Implementing Performance Based Option of 10 CFR 50 Appendix J," stating that it provides methods acceptable to the NRC staff for complying with the provisions of Option B in Appendix J to 10 CFR Part 50, subject to the following:

1. The test intervals in ANSI/ANS-56.8-1994, "Containment System Leakage Testing Requirements," are not performance-based; therefore, licensees intending to comply with Option B in the amendment to Appendix J should establish test intervals based upon the criteria in Section 11.0 of NEI 94-01, rather than using the test intervals specified in ANSI/ANS-56.8-1994. All other technical methods and techniques for performing Types A, B, and C tests contained in ANSI/ANS-56.8-1994 are acceptable to the NRC staff.

Industry standards contain the following guidance related to Appendix J, Option B testing of containment barriers:

NEI 94-01, Section 8.0, Testing Methodologies For Type A, B and C Tests, states, in part, that the as-found and the as-left leakage rate for all pathways that are not drained and vented must be determined by Type B and Type C testing within the previous 30 calendar months of the time that the Type A test is performed and must be added to the Type A leakage rate UCL to determine the overall La surveillance acceptance criteria in accordance with the definition in Section 5.0 of this document.

Corrective Actions: The licensee entered this issue into the corrective action program as Notification 51058978 and performed a past operability determination for the quick opening transfer tube closure and determined that there was not an operability issue since they are performing maintenance and testing at one half the allowable surveillance interval.

Corrective Action References: Notification 51058978

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee did not adequately evaluate pre-test activities related to the quick opening transfer tube closure leak rate testing for preconditioning to determine whether or not those activities may have constituted unacceptable preconditioning. This performance deficiency was reasonably within the licensee's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the structure, system, and component and barrier performance attribute of the Barrier Integrity Cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of findings," and IMC 0609, Attachment A, Exhibit 3 (barrier integrity). The finding screened as Green because the finding did not represent an actual open pathway in the physical integrity of reactor containment.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," states, in part, that a test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. Contrary to the above, from April 10, 2000, to present, due to potential preconditioning, the licensee did not establish an adequate test program to assure that all testing required to demonstrate that the quick opening transfer tube closure would function satisfactorily in service was properly performed.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Unresolved Item (Open)	Failure to Replace Early Warning System Batteries at Periodicity Required by the Alert and Notification System Design Report URI 05000275,05000323/2019004-02	71114.02
<p><u>Description:</u></p> <p>The NRC identified a deviation between the licensee's maintenance program for outdoor emergency warning sirens and the licensee's commitments as described in their Federal Emergency Management Agency (FEMA) approved Alert And Notification System Design Report.</p> <p>The inspectors determined that Section 21.7, second and third bulleted paragraphs, of the licensee's FEMA approved design report, "Alert and Notification System (ANS) Design Report, Early Warning System (EWS)," Revisions 1 through 4, indicates that all system batteries are replaced every 3 years. This activity is completed in accordance with Procedure EP MT-43, "Early Warning System Testing and Maintenance." This procedure, which was included as an attachment to the design report, was revised in June 2013, reflecting changes in the type of batteries supplied for the system. This procedure revision was provided to FEMA with the submittal for Revision 1 of the design report. However, the procedure was changed from replacement of batteries every 3 years to replacement upon failure or if it exceeded a life of 5 years. Subsequently, Revision 3 to the design report, submitted and approved by FEMA in 2015, added calculation EWS-001, "Early Warning System (EWS) System Battery Backup Battery Capacity," as an attachment. The attachment assumes worst case conditions using a battery that is 3 years old, which supports the statement in Section 21.7 that batteries will be changed every 3 years. The inspectors determined that all system batteries were replaced in 2014 and 2019, resulting in a 5-year battery replacement schedule in practice. This practice of replacing batteries every 5 years instead of every 3 years constitutes a deviation from the FEMA approved design report. Since all batteries were replaced in 2019, there is no immediate safety concern with this issue.</p> <p>Planned Closure Actions: As ANS design reports require FEMA approval, this deviation from the approved design report requires a review and determination from FEMA regarding its acceptability. This URI will remain open pending determination of acceptability from FEMA. A determination on whether this deviation constitutes a performance deficiency will be made after FEMA's determination of acceptability.</p> <p>Licensee Actions: The licensee recognizes the design report internal differences with respect to battery replacement periodicity identified in this inspection. As a result, the licensee is evaluating the differences and will coordinate with FEMA as needed to resolve the issue.</p> <p>Corrective Action References: Notification 51052363</p>		

Failure to Identify Conditions Adverse to the Fire Protection Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000275,05000323/2019004-03 Open/Closed	[H.1] - Resources	71152
<p>The inspectors identified a Green, non-cited violation of Operating License DPR-82, License Condition 2.C.(4), "Fire Protection," Operating License DPR-80, License Condition 2.C.(5), "Fire Protection," and the requirements of National Fire Protection Association (NFPA) 13-1969, "Standards for the Installation of Sprinkler Systems," for the failure to identify conditions adverse to the fire protection program. Specifically, during required inspections of the material condition of the sprinkler system, the licensee failed to identify numerous instances of paint on sprinkler components which could adversely affect their fire suppression function.</p> <p><u>Description:</u> On September 19, 2019, during a fire protection walkdown of the Unit 1, motor-driven auxiliary feedwater room, the inspectors identified two sprinklers with red paint on the link leaf. One of the two sprinklers also had paint on the deflector.</p> <p>On September 25, 2019, during a plant status walkdown of the Unit 1, component cooling water heat exchanger room, the inspectors identified two sprinkler heads speckled with red paint. One of the two sprinklers was also speckled with red paint on the deflector.</p> <p>On September 28, 2019, during a plant status walkdown of the Unit 1, turbine-driven auxiliary feedwater room, the inspectors identified two sprinklers with red paint on the deflectors. One sprinkler also had paint on the soldered cup.</p> <p>In each of these cases, the licensee evaluated the as-found condition of these sprinklers and determined that they were not functional per Equipment Control Guideline (ECG) 18.4, "Spray and/or Sprinkler Systems," and the licensee entered the required 1-hour action ECG 18.4 B.1 and established a continuous fire watch in the impacted room until the sprinklers were replaced.</p> <p>Equipment Control Guideline 18.4.6 requires the licensee to visually inspect the sprinkler heads in safety areas outside of containment every 18 months to verify their integrity. The licensee's Surveillance Test Procedure M-65, "Sprinkler/Deluge System Visual Verification," Revision 21, provides guidance on performing these visual inspections. Attachment 1 lists the criteria for visual inspection. For sprinklers, one of the visual inspection criteria states, "No paint on operating element, bulb, or deflector."</p> <p>Paint on sprinkler components reduces the ability of the sprinkler to function as it was designed. The concern with paint on a deflector plate is that it could impact the spray pattern and spread of water to the hazard below. The concern with paint on the operating element or bulb may affect both the mechanical and thermal responses of the sprinkler head.</p> <p>To address these issues, the licensee initiated extent of condition walkdowns for sprinklers in all safety-related areas. Furthermore, a representative sample of eight sprinklers was sent to Underwriters Laboratories for testing, and all eight of the sprinklers were determined to be functional. Thus, the licensee determined that sprinklers with any amount of paint less than or equal to the amount of paint on the sprinklers that were tested are functional. The</p>			

inspectors reviewed this report and noted that the vendor tested the response time of the sprinklers, but no testing was completed to verify impact on spray pattern. However, the licensee was able to use engineering judgment to determine that the impact to spray pattern would be minimal, such that functionality of the sprinklers continued to be supported.

Corrective Actions: In addition to the immediate corrective actions taken and noted above, the licensee's corrective actions will include a revision of Surveillance Test Procedure M-65 to provide more specific guidance to personnel performing the inspections. For example, the licensee determined that the inspectors were able to identify painted sprinklers that the licensee had previously failed to identify because the inspectors had more powerful flashlights than the licensee personnel performing the inspections. The licensee plans to add guidance to indicate that licensee personnel performing Surveillance Test Procedure M-65 carry flashlights with a minimum luminous flux of 1,000 lumens.

Corrective Action References: Notifications 51049099, 51046372, 51047439, 51047935, 51048465, 51049999, 51050268, 51050291, and 51050412

Performance Assessment:

Performance Deficiency: The licensee's failure to identify conditions adverse to the fire protection program was a performance deficiency that was within the licensee's ability to foresee and correct. Specifically, during required inspections of the material condition of the sprinkler system, the licensee failed to identify numerous instances of paint on sprinkler components which could adversely affect their fire suppression function.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the protection against external factors attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the safety concern is that the number of sprinklers with paint on functional components would not provide an adequate area-wide coverage of suppression. Furthermore, the inspectors determined that this issue involved a programmatic problem with the surveillance program since the procedures used to regularly inspect for paint on functional components of sprinklers did not identify these numerous instances.

Significance: The inspectors assessed the significance of the finding using Appendix F, "Fire Protection and Post - Fire Safe Shutdown SDP." The inspectors determined that the finding was of very low safety significance (Green) because the identified degraded fixed suppression system (sprinklers) was evaluated and determined to not adversely affect the ability of the system to protect any equipment important to safe shutdown.

Cross-Cutting Aspect: H.1 - Resources: Leaders ensure that personnel, equipment, procedures, and other resources are available and adequate to support nuclear safety. Specifically, the licensee personnel performing the routine inspections did not identify painted sprinklers because they were not provided with adequate flashlights and the Surveillance Test Procedure M-65 did not provide guidance that was specific enough to support identification of the disallowed paint and degradation of the material condition of the sprinklers.

Enforcement:

Violation: Diablo Canyon Power Plant is required by Operating License Condition 2.C.(5) for Unit 1, and 2.C.(4) for Unit 2, "Fire Protection," to meet the requirements found in National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection in Light Water Reactor Electric Generating Plant, 2001 Edition." Diablo Canyon Power Plant calculation FP-805 demonstrates how the Diablo Canyon Power Plant, Units 1 and 2, meet the requirements of NFPA Standard 805, including the NFPA Codes of Record for Diablo Canyon Power Plant (as noted in Appendix C of the calculation). The licensee is committed to NFP 13-1969, "Standard for the Installation of Sprinkler Systems."

NFPA 13-1969, Section 3611, specifies that, "Sprinklers shall not be altered in any respect, nor have any type of ornamentation or coatings applied after shipment from the place of manufacture."

Contrary to this requirement, the inspectors found six sprinklers with red paint that was not applied by the manufacturer; furthermore, the licensee's extent-of-condition walkdowns identified multiple additional examples. The licensee generated approximately 170 notifications as a result of the extent-of-condition walkdowns. This is representative of a programmatic condition since Diablo Canyon Power Plant's sprinkler visual inspection program failed to identify numerous instances of degraded sprinklers, despite the fact that Procedure STP M-65 included "No paint on operating element, bulb, or deflector" in the visual inspection criteria.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Human Performance Event Leads to Isolation of Seal Cooling to Reactor Coolant Pump 2-3

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green FIN 05000323/2019004-04 Open/Closed	[H.12] - Avoid Complacency	71153

The inspectors reviewed a Green, self-revealed finding in that PG&E personnel failed to follow multiple station standards and procedures, including OM15.ID8, "Human Performance Error Prevention Tools," and AD2.ID1, "Procedure and Work Plan Use and Adherence." Specifically, PG&E operations department non-licensed operators, while venting Unit 2 reactor coolant pump seal return lines, failed to perform an appropriate task preview brief and follow procedure use and adherence standards while conducting the work, resulting in the isolation of seal flow to the Reactor Coolant Pump 2-3, seal No. 1, for approximately 15 minutes.

Description: Reactor Coolant Pump (RCP) seal injection is provided to each of the four RCPs by the Chemical and Volume Control System during normal operation to provide cooling to the RCP seal packages. The RCP seal packages consist of three seals that act to provide a pressure boundary between high temperature and pressure reactor coolant and the containment atmosphere while allowing for the rotation of the RCP shaft. The RCP seals cannot properly function without supplied cooling flow. An emergency shut-down seal has been installed on all of the RCPs in the event of a failure of the RCP seal packages and

would serve as a final barrier to prevent a loss of reactor coolant pressure and inventory in the event that the RCS seal package were to fail.

On December 11, 2019, during routine venting of the Unit 2, RCP seal packages at the end of refueling outage 2R21, PG&E operations personnel inadvertently isolated the seal return flow to RCP 2-3, seal #1. This isolation served to remove seal flow cooling to the RCP 2-3, seal #1 and led to an immediate gradual rise of RCP seal temperatures. Operations personnel were able to restore proper seal cooling flow within about 15 minutes of the event occurring via direction from the Unit 2 control room. A subsequent evaluation by PG&E and the RCP seal package vendor determined that no damage to the seal or the RCP had occurred. Had seal cooling not been restored in a timely manner, significant damage could have occurred to the RCP 2-3, and RCS integrity could have been challenged.

An investigation into the event by PG&E determined that the operation non-licensed operators assigned to perform the task failed to follow required station standards and procedures designed explicitly to prevent such an event from occurring. OM15.ID8, "Human Performance Error Prevention Tools," Revision 9, Section 8.7, requires that a Task Preview be performed prior to attending a pre-job brief or starting work and that a Task Preview, in part, should review procedures and other related documents, including drawings. Only one of the two assigned operators performed a Task Preview, and neither operator reviewed the applicable procedure or accompanying system drawings. AD2.ID1, "Procedure and Work Plan Use and Adherence," Revision 28, Section 5.4, requires, in part, that operators using continuous use procedures "read and understand each step prior to performing the step." It was determined that the operators conducting the RCP seal vent did not have the continuous use procedure required for the performance of the RCP seal vent, OP A-2:I, "Reactor Vessel – Filling and Venting the RCS," Revision 40, at the job site at any point during the performance of the work.

Corrective Actions: After the event, PG&E Operations Department performed a stand down and enacted temporary management observations for all non-license operator work. Additionally, site wide communications were issued outlining the event and the mistakes that were made.

Corrective Action References: Notification 51058992

Performance Assessment:

Performance Deficiency: The inspectors determined that PG&E operations personnel failure to properly adhere to required site standards and procedures was a performance deficiency within PG&E's ability to foresee and correct.

Screening: The inspectors determined the performance deficiency was more than minor because if left uncorrected, it would have the potential to lead to a more significant safety concern. Specifically, after the inadvertent isolation of seal cooling to the Unit 2, RCP 2-3, seal #1, had seal cooling not been restored in a timely manner, significant damage could have occurred to the RCP and could have challenged RCS integrity.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined that the finding was of very low safety significance (Green) because, after a reasonable assessment of the degradation, the loss of seal cooling to RCP 2-3 could not

have resulted in exceeding the RCS leak rate for a small break loss of coolant accident (LOCA) and could not have likely affected other systems used to mitigate a LOCA.

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. Specifically, PG&E operations personnel failure to appropriately follow required station standards and procedures while venting RCP seals resulted in the isolation of seal cooling to RCP 2-3, seal #1.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On October 24, 2019, the inspectors presented the emergency preparedness program inspection technical debrief results to Mr. M. Ginn, Manager, Emergency Preparedness and other members of the licensee staff.
- On November 25, 2019, the inspectors presented the emergency preparedness inspection results telephonically to Ms. M. Zawalick, Senior Director, Risk and Compliance and other members of the licensee staff.
- On December 12, 2019, the inspectors presented the exit meeting for Unit 2, inservice inspection results to Mr. P. Nugent, Director, Engineering Services and other members of the licensee staff.
- On December 19, 2019, the inspectors presented the Exit meeting for the Triennial Heat Sink inspection results to Ms. P. Gerfen, Site Vice President, and other members of the licensee staff.
- On January 9, 2020, the inspectors presented the integrated inspection results to Mr. J. Welsch, Senior Vice President, Generation and Chief Nuclear Officer, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04Q	Procedures	OP B-2	Residual Heat Removal System	4
		OP B-2:I	RHR Alignment Verification	22
71111.04S	Corrective Action Documents	Notifications	50944837, 50945769, 50954699, 50962286, 50981727, 51007990, 51011806, 51014873	
	Drawings	106712	Containment Spray, Unit 1, Sheet 2	34
	Procedures	OP I-2	Containment Spray System	4
		OP I-2:I	Containment Spray System - Make Available	25
		OP I-2:II	Containment Spray System - Alignment Verification	20
	Work Orders		64145129, 64186293, 64192142	
71111.05Q	Corrective Action Documents	Notifications	51059292, 51059293	
	Drawings	RA-26	Containment Building Elev. 91'	2
		RA-3	Radiological Control Area (RCA) Elev. 73'	4
		RA-34	Containment Building Elev. 140'	2
		TB-14	Turbine Building Elev. 85'	3
		TB-3	Turbine Building Elev. 85'	3
71111.06	Corrective Action Documents	Notifications	50510868, 50840067, 51050948, 51052936, 51052984	
	Drawings	102014	Safety Injection abandoned CCW Header C component	55
		500610	Plant conduit drawings electrical underground	6
	Procedures	AWP E-016	Inspection Guide – Maintenance Rule Structural Monitoring Programs - Civil	18
	Work Orders		60119102	
71111.07A	Corrective Action Documents	Notifications	51046751, 51048738, 51052742	
	Procedures	MA1.ID22	Heat Exchanger Program	2B
		PEP M-234	CCW Heat Exchanger Performance Test	18
		STP V-13A	CCW Flow Balancing	17
	Work Orders		641139226, 641392229, 64143451	
71111.07T	Calculations	DCM S-23A	Diablo Canyon Nuclear Power Plant Units 1 and 2 Design Criteria Memorandum S-23A Containment HVAC System	27

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		M-1017	Component Cooling Water System Flow Balancing	6
		M-1028	Component Cooling Water System RELAP Model and Heat Up Assessment	3
		M-1185	Component Cooling Water FATHOM Flow and Heat Transfer Analysis Model	0
		M-1185	Component Cooling Water FATHOM Flow and Heat Transfer Analysis Model	1
		M-962	Component Cooling Water Maximum Differential Pressure Calculation	3
		STA-237	LOCA / MSLB Containment EQ Envelope P/T Curves for RSGs	2
		STA-296	SRC Containment Fan Cooler Unit (CFCU) Air Flow Limits for Design Bases Heat Removal	1
	Corrective Action Documents	Notifications	50920460, 50916395	
	Corrective Action Documents Resulting from Inspection	Notifications	51059760, 51059883, 51034968	
	Drawings	663079 Sh 18	Reactor Fan Cooler System Cooling Coils Equipment Specification	2
		663200-60	Spent Fuel Pool Heat Exchanger Specification Sheet	12
		663211 Sheet 100	Mechanical Spent Fuel Pit Heat Exchanger	3
		663211 Sheet 7	Mechanical Spent Fuel Pit Heat Exchanger	10
		663212 Sheet 1	Piping Outline Component Cooling Water Heat Exchanger 1-1	10
		663212-45-1-4	Component Cooling Water Heat Exchanger Specification Sheet	4
		663217	Residual Heat Exchanger Outline	8
		DC663217 Sh. 1	Residual Heat Exchanger Specification Sheet	3
	Miscellaneous	663079-51	Reactor Containment Fan Cooler Vendor Manual	34
		663212 Sheet 55	Component Cooling Water Heat Exchanger Vendor Manual	4
		PEP M-234 CCW	Component Cooling Water Heat Exchanger Performance	3/15/2017

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		HX 1-1	Test CCW Heat Exchanger 1-1	
		PEP M-234 CCW HX 1-1	Component Cooling Water Heat Exchanger Performance Test CCW HX 1-1	2/26/2019
	Procedures	AD7.ID11	Fluid Leak Management Program	5
		STP M-93A	Refueling Interval Surveillance - Containment Fan Cooler System	36
	Work Orders		6010085, 64186919	
71111.08P	Corrective Action Documents	Notifications	50978723, 50987963, 50988076, 50992490, 50995366, 51014873, 51019340, 5102039, 51048804, 50966007, 50966526, 50852155, 50381172, 60090271, 60102685, 60091102, 60091102, 60102671, 68049343, 68049345, 68049348, 60090552, 60091061, 60091062, 60091246, 60106141, 60108907, 68049020, 68049023, 68049023, 68049347, 60001662, 60092346, 60102630, 68049341, 68049360, 68049361, 60077622, 60106600, 60102612, 64135106, 64135108, 60041421, 60086545, 60093902, 60095016, 64059438, 64059477, 64065827, 64065830, 64076822, 64103254, 68050270, 60109545, 60115547, 64098833, 64136042, 64138379, 64161808, 68041231, 68041232, 68041233, 68041234, 68041235, 68041236, 68041238, 68056864	
	Miscellaneous	NEI 94-01	Industry Guideline for Implementing Performance Based Option of 10 CFR 50 Appendix J	7/26/1995
	Procedures	CF5.ID12	Consumable Material Control	
		CF5.ID12	Consumable Material Control	
		AD4.ID7	Cleanliness Controls for Corrosion-Resistant Materials	
		AD4.ID7	Cleanliness Controls for Corrosion-Resistant Materials	
		AD4.ID7	Cleanliness Controls for Corrosion-Resistant Alloys	5A
		CF5.ID12 Consumable Material Control 6	Consumable Material Control	6
		ER1.ID2	Boric Acid Corrosion Control Program	07
		ISI X CRDM	Reactor Vessel Top and Bottom Head Visual Inspections	06
		ISI X CRDM	Reactor Vessel Top and Bottom Head Visual Inspections	06

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		NDE_PDI-UT-2	Ultrasonic Examination of Austenitic Piping	13
		NDE_PT-1	Visible Dye Liquid Penetrant Examination Procedure	6
		NDE_PT-1	Visible Dye Liquid Penetrant Examination Procedure	6
		NDE_UT-4	Ultrasonic Examination of Pressure Vessel Welds Other than Reactor Vessels	4
		NDE_VT_1-1	Visual Examination of Component Surfaces	2
		NDE_VT_2-1	Visual Examination During Section XI System Pressure Test	4
		NDE_VT_3-1	Visual Examination of Component and Piping Supports	3
		OM8.ID4	Control of Flammable and Combustible Materials	29
		PD MA3	Special Processes	3
		STP R 8C	Containment Walkdown for Evidence of Boric Acid Leakage	10
71111.11Q	Corrective Action Documents	Notifications	51050766, 51050840, 51050895, 50578875	
	Procedures	OP B-8D:S2	Core Loading	67
		OP L-2	Hot Standby to Startup	45
		STP R-30	Reload Initial Criticality	19a
		STP R-6	Low Power Reload Physic Test	17
		TP TB-19001	Diesel Generator 2-1, Bus G Voltage and Frequency Recovery Test	1
		TP TO-19004	Main Generator Reactive Power Capability Test	3
	Work Orders		68057806	
71111.12	Corrective Action Documents	Notifications	51014873, 51026018, 51000617, 50663011, 50962629, 50954496, 50964541, 51057622, 50874890, 50674227, 50671521, 51060501	
	Miscellaneous		Maintenance Rule Periodic Assessment for 10 CFR 50.65 (a)(3)	10/18/18
		DC/1/12 CSS	Maintenance Rule Summary Unit 1 Containment Spray	12
	Procedures	AD7.ID11	Fluid Leak Management Program	5
		AD9.DC2	Receipt Inspection and Acceptance Testing	9
		AD9.ID11	Supplier Evaluation Process	9A
		AD9.ID7	Receipt Inspection and Acceptance Testing	9
		CF3.ID13	Replacement Part Evaluation and CITE	31
		CF5.ID2	Control of Material in Storage	15

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		MA1.ID17	Maintenance Rule Monitoring Program	32
		MA1.ID20	Testing/ Inspections for Aux Saltwater System	5
		QCP 10.1	Receipt Inspection Program	17
		QCP 10.2	Inspection Activities	23
		QCP 10.22	Supplemental Verification Activities at Receipt	1A
		TS5.ID1	System Engineering Program	29A
	Work Orders		60089776, 60105628, 64143057	
71111.13	Drawings	2R21-1T140	Space Allocation - Unit 2 Turbine Building - El. 140'	1
	Miscellaneous		2R21 Outage Safety Plan	0
		31313-0035	Evaluation of Temporary Laydown Loads per Space Allocation Maps	1
	Procedures	AD7.DC6	On-Line Maintenance Risk Management	28
		MA1.ID14	Plant Crane Operating Restrictions	29
		MA1.ID7	Control of Plant Floor Loading	6
		OP A-2-III	Reactor System Drain down to Midloop	53A
		OP O-36	Protected Equipment Postings	22
71111.15	Corrective Action Documents	Notifications	50643534, 50652093, 50665503, 51049291, 51049295, 51052310, 51052611, 51053953, 51058951, 51059901	
	Miscellaneous	NUREG/ CR-7037	Industry Performance of Relief Valves at U.S Commercial Nuclear Power Plants Through 2007	0
	Procedures	MP M-4.18A	Main Steam Safety Valve Test Record	14
		OM7.ID1	Emerging Issue and Event Investigations	54
		OM7.ID12	Operability Determination	40
		OM7.ID12	Operability Determinations	39
		STP M-16D	Operation of Train B Slave Relay K608 (Safety Injection)	43
	Work Orders		60123364	
71111.18	Corrective Action Documents	Notification	51052399	
	Miscellaneous	DCN 2*1844	480V AC switchgear and 125V DC Inverter Rooms Ventilation System	6/20/2019
	Procedures	CF3.ID9	Design Change Notice	56
	Work Orders		60119905	
71111.19	Corrective Action	Notifications	51017864, 51019201, 51049800, 51054349, 51057147,	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents		51059854	
	Drawings	437700	Main Annunciator, Sheet 1	19
		663106	Hot Shutdown Remote Control Panel, Sheet 1	5
	Procedures	OP J-6A:I	Unit 2- 4160 Volt System Make Available	19
		STP I-4-PCV21	10% Steam Dump Valve PCV-21 Calibration	14
		STP M-11B	Station Battery Condition Monitoring	35
		STP M-12A	Vital Station Battery Performance Test	17
		STP M-93A	Refueling Interval Surveillance- Containment Fan Cooler System	39
		STP P-ASW-22	Routine Surveillance Test of Auxiliary Saltwater Pump 2-2	30A
	Work Orders		60112965, 60123002, 60124122, 64133854, 64134120, 64135262, 64145251	
71111.20	Corrective Action Documents	Notifications	51048601, 51050001, 51050004, 51049797, 51049826, 51047117, 51046986, 51049786, 51050368, 51046135, 51048601, 51049891, 51050869, 51053212, 51046257, 51054057, 51058185, 51056900, 51056014	
	Miscellaneous	2R21 (AD8.DC55 Att-7)	Outage Safety Plan 2R21	0
		AD7.DC8	Work Planning	52
		AD7.ID14	Assessment of Integrated Risk	22
		AD8.DC50	Outage Safety Management	5
		AD8.DC51	Outage Safety Management Control of Off-Site Power Supplies to Vital Buses	19
		AD8.DC54	Containment Closure	15
		AD8.DC55	Outage Safety Scheduling	43
		ER1.ID2	Boric Acid Corrosion Control Program	7
		MIP CT-3.0	Balance of Plant Coatings (DCP-213)	6
		MP I-2.28	Activation and Deactivation of the Rx Vsl Refueling Level; Indication System (RVRLIS)	29
		MP M-45.1	Containment Equipment Hatch Door Opening and Closing	14
		MP M-50-SLD.1	Reactor Vessel Head Lifting Device Inspection	1
		OM14.ID1	Fatigue Management Rule Program	30
		OM14.ID5	Fitness for Duty Program For-Cause and Post Event	12

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		OM6.ID7	Activities Near High Voltage Equipment	11
		OP A-2:II	Reactor Vessel - Draining the RCS to the Vessel Flange - With Fuel in Vessel	51
		OP A-2:III	Mid-Loop Operations	53
		OP A-2:IX	Reactor Vessel - Vacuum Refill of the RCS	32
		OP A-2:X	RVRLIS Alignments for Refueling Outages	8B
		OP B-2:V	RHR - Place in Service	37
		OP B-8DS2	Core Loading	67
		OP B-8H	Spent Fuel Pool Work Instructions	54
		OP L-0	Mode Transition Checklists	85
		OP L-2	Hot Standby to Startup Mode	45
		OP L-4	Normal Operation at Power	78
		OP L-5	Plant Cooldown from Minimum Load to Cold Shutdown (Unit 2)	88B
		OP L-6	Cold Shutdown/Refueling	27A
		OP O-36	Protected Equipment Postings	21
		OP2.ID1	Clearances	43
		PEP R-8F	Fuel Assembly Inspections in the Spent Fuel Pool	13
		PRA19-09	Transition From Mode 5 to Mode 4 With Main Bank 500 kV Unavailable	
		STP I-65	Containment Fan Cooler Collection Monitoring System Calibration	16
		STP M-45A	Containment Inspection Prior to Establishing Containment Integrity	35
		STP R-30	Reload Cycle Initial Criticality	19A
		STP R-6	Low Power Reload Physics Tests	17
		STP R-8C	Containment Walk down for Evidence of Boric Acid Leakage	10
		TP TO-19003	Unit 2 Main Generator Ventilation Test -2R21	0
	Work Orders		64143495	
71111.22	Corrective Action Documents	Notifications	51054911, 51055349	
	Drawings	107708	Chemical Volume and Control System Drawing; Sheet 5	128
		107709	Chemical Volume and Control System Prints; Sheet 3	67

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		441297	4160 Bus G Logic Drawing	14
	Miscellaneous	C21 R-11-003	MP59A Clearance Tag	10/8/2019
	Procedures	STP M-9I	Diesel Generator Start and Load Tracking	29A
		STP P-CCP-A22	Uni2 Charging Pump Full Flow Test	15
		STP V-659A	Penetration 59A Containment Isolation Valve Leak Testing	12A
		TP TB-19001	Unit 2, Diesel Generator 2-1, Bus G Voltage and Frequency Recovery Test	1
	Work Orders		64161465, 68057806	
71114.02	Calculations	EWS-001	Early Warning System (EWS) System Battery Backup Battery Capacity	0
	Corrective Action Documents	Notifications	50366007, 50931334, 51052491	
	Miscellaneous		Pacific Gas & Electric Company, Diablo Canyon Power Plant (DCPP), Alert and Notification System (ANS) Design Report, Early Warning System (EWS)	1, 3, 4
		DCL-13-067	Docket No. 50-275, OL-DPR-80; Docket No. 50-323, OL-DPR-82; Diablo Canyon Units 1 and 2, Alert and Notification Design Report	6/24/2013
		DCL-15-090	Docket No. 50-275, OL-DPR-80; Docket No. 50-323, OL-DPR-82; Diablo Canyon Units 1 and 2, Alert and Notification Design Report, Revision 3	8/19/2015
		DCL-16-121	Docket No. 50-275, OL-DPR-80; Docket No. 50-323, OL-DPR-82; Diablo Canyon Units 1 and 2, Alert and Notification Design Report, Revision 4	11/17/2016
		DCPP Form 69-21635, Screening Evaluation Form, Tracking Number: 60051602	Replace the Backup Batteries in All of the 131 Early Warning System (EWS) Sirens	4/7/2014
		MS-ZMAN-PS01-A	ProStar Solar Controllers Operator's Manual	4/1/2001
		Report Number 402.3.4-18.4	DCPP EWS 2018 Acoustic Test Report	11/2/2018
	Procedures	EP MT-43	Early Warning System Testing and Maintenance	14, 17

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		OM4.ID14	Notification Review Team (NRT)	33
		Standard Operating Procedure III.25	San Luis Obispo County/Cities Nuclear Power Plant Emergency Response Plan, United States Coast Guard	6/1/2013
71114.03	Miscellaneous		Attachment 1, ERO Personnel Response Matrix for Call-In	5/21/2018
			Attachment 1 ERO Personnel Response Matrix for Call-In	7/20/2018
			Attachment 1, ERO Personnel Response Matrix for Call-In	10/3/2018
			Attachment 1, ERO Personnel Response Matrix for Call-In	1/16/2018
			Attachment 1, ERO Personnel Response Matrix for Call-In	10/20/2017
			Attachment 1, ERO Personnel Response Matrix for Call-In	11/6/2017
			Attachment 1, ERO Personnel Response Matrix for Call-In	1/31/2019
			Attachment 1, ERO Personnel Response Matrix for Call-In	4/19/2019
			Attachment 1, ERO Personnel Response Matrix for Call-In	9/9/2019
	Procedures	EP G-2	Interim Emergency Response Organization	53
71114.04	Miscellaneous	50.54(q) Effectiveness Evaluation 2018-85	Revise the Emergency Plan's Definitions of "Protected Area" and "Vital Area"	2/27/2019
		50.54(q) Effectiveness Evaluation Form 2017-40	PIC Upgrades 2017-40	11/20/2017
		50.54(q) Effectiveness Evaluation Form 2018-26	Develop EP RB-17	4/4/2018
		50.54(q) Effectiveness Evaluation Form 2019-16	Upgrade/Update the Existing VoIP System	4/2/2019
		50.54(q) Screening Evaluation 2019-26	EP G-1 Revisions	8/13/2019

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		50.54(q) Screening Evaluation Form	Revise the QuickDose "Met & Dose Calc" Sheet Output Form	8/14/2018
		50.54(q) Screening Evaluation Form 2017-44	EP MT-21 Rev. 15	11/29/2017
		50.54(q) Screening Evaluation Form 2018-08	Evaluate Impact of Revision to FSAR Adopting Alternate Source Term on Current Emergency Action Levels	3/7/2018
		50.54(q) Screening Evaluation Form 2018-48	Revise EP MT-50 to Reflect Process Changes	5/16/2018
		50.54(q) Screening Evaluation Form 2018-51	Install Battery Temperature Sensors in Early Warning System (EWS) Locations	6/6/2018
		50.54(q) Screening Evaluation Form 2018-60	Revise OM10.ID1 to Address Corrective Actions	6/19/2018
		50.54(q) Screening Evaluation Form 2018-77	Document the Initial EAL Wall Chart Based on Emergency Plan Appendix D Rev. 5.02	8/4/2018
		50.54(q) Screening Evaluation Form 2019-09	Revise AWP EP-007 to Address SAPN 51014880	4/8/2019
		5054(q) Screening Evaluation Form	Revise EP MT-43 to Align Measuring and Testing Equipment (M&TE) Requirements	7/29/2019

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		2019-24		
		DCL-19-093	Docket No. 50-275, OL-DPR-80; Docket No. 50-323, OL-DPR-82; Diablo Canyon Units 1 and 2; Docket No. 72-76, Materials License No. SNM-2511; Diablo Canyon Independent Spent Fuel Storage Installation, Emergency Plan Update	11/18/2019
	Procedures	OM10.ID2	Emergency Plan Revision and Review	13A
71114.05	Corrective Action Documents	Notifications	50945308, 50946337, 50946792, 50949924, 50950681, 50951392, 50952393, 50955903, 50956771, 50962724, 50972965, 50976540, 50977161, 50977209, 50984136, 50991188, 51005487, 51032357, 51014388, 51030358, 51033649, 51034446, 51042360, 51047287, 51052524, 51056397	
	Miscellaneous		Drill Critique Report, Unannounced Off Hours Augmentation Drill, 1/16/2018	1/31/2018
			Drill Critique Report, Functional Area Drill - DEP Upgrade PAR, 1/24/2019	2/15/2019
			Drill Critique Report, Health Physics Drill - First Half 2019, 1/30/2019	2/19/2019
			Drill Critique Report, 1st Half 2018 Health Physics Drill, 1/31/2018	2/8/2018
			Drill Critique Report, Charlie Full Scope Drill, 4/25/2018	6/8/2018
			Drill Critique Report, Alpha Team Training Drill, 6/5/2019	6/19/2019
			Drill Critique Report, Alpha Team EMPE Drill, 06/18/2019	7/2/2019
			Drill Critique Report, Delta Team Full Scope Drill, 7/24/2019	8/26/2019
			Drill Critique Report, Medical Drill Dress Rehearsal, 7/10/2019	8/5/2019
			Drill Critique Report, 2nd Half 2018 Health Physics Drill, 7/18/2018	9/19/2018
			Drill Critique Report, Medical Drill Dress Rehearsal, 7/18/2018	9/19/2018
			Drill Critique Report, FEMA Evaluated Medical Drill, 8/22/2018	9/19/2018
			Drill Critique Report, Alpha Full Scope Drill, 8/29/2018	9/19/2018

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			Drill Critique Report, Bravo Full Scope Dress Rehearsal, 9/19/2018	10/22/2018
			Drill Critique Report, Alpha and Bravo Full Scope Drill, 10/4/2017	1/2/2018
			Drill Critique Report, Bravo Team NRC Evaluated Exercise, 10/24/2018	11/29/2018
			Drill Critique Report, Charlie and Delta Full Scope Drill, 11/8/2017	1/2/2018
			Drill Critique Report, 1st Semi-Annual Health Physics Drill of 2017, 2/15/2017	5/30/2017
		DCPP Form 69-20477, EP EF-3 Attachment 17	Government Relations Coordinator Checklist	4/9/2019
		DCPP Form 69-2137, EP EF-3 Attachment 22	General Office Technical Liaison Checklist	4/9/2019
		FileNet Number 173460007	Pacific Gas & Electric Company, Diablo Canyon Power Plant, 2018 Emergency Preparedness Audit	4/23/2018
		FileNet Number 183440003	2019 Emergency Preparedness and FLEX Audit	3/4/2019
		KLD TR-1048	Diablo Canyon Power Plant 2018 Population Update Analysis	11/20/2018
		KLD TR-974	Diablo Canyon Power Plant 2017 Population Update Analysis	11/21/2017
	Procedures	AWP EP-007	Updating Letters of Agreement	3, 4
		CAP E-1:IV	CVCS Influent Sampling	10
		EP G-1	Emergency Classification and Emergency Plan Activation	46
		EP G-3	Emergency Notification of Off-Site Agencies	60
		EP MT-21	Emergency Kits	16
		EP MT-25	Emergency Procedure Phone Number Verification	7
		EP MT-26	Control Room	13
		EP MT-27	Technical Support Center (TSC)	15
		EP MT-28	Operational Support Center (OSC)	14
		EP MT-29	Emergency Operations Facility (EOF)	13

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		EP MT-31	Joint Information Center (JIC)	10
		EP MT-36	Alternate Technical Support Center (TSC)/Operational Support Center (OSC)	1
		EP MT-50	Offsite Communication Drills	2
		OM10.DC1	Emergency Preparedness Drills and Exercises	10
		OM10.ID1	Maintaining Emergency Preparedness	18
		OM10.ID6	Equipment Important to Emergency Response (EITER)	7, 8
		OM7.ID1	Problem Identification and Resolution	54
		STP G-20	Emergency Assessment and Response System (EARS) Test	8
		STP-I-52-M.1	TSC/EOF/Alt-TSC Data Systems Functional Check	14
	Work Orders		60122598	
71151	Corrective Action Documents	Notifications	51032175, 51040181, 51040764	
	Miscellaneous		RCS Leakage Cycle 21 Data, Units 1 and 2	1/16/2018 - 11/30/2019
		Attachment 2 - Simulator Event Sequence	ECA1-MS3, Crew A, Group 1, Session R1935T	8/13/2019
		Attachment 2 - Simulator Event Sequence	2019CPE3, Crew E, Group 2, Session R19-2ST	7/2/2019
		Attachment 2 - Simulator Event Sequence	ECA1-MS3, Crew B, Group 2, Session R186 E1-2	5/8/2019
		EPD710J	Classification and Notification	7
		RCS Dose Equivalent Iodine Quarterly Reports	PG&E DCPD Performance Indicator Program 2018 and 2019	
	Procedures	AWP EP-001	Emergency Preparedness Performance Indicators	21
		AWP O-001	NRC Performance Indicators: RCS Specific Activity	15
		CAP D-6	Specific Activity Determination in Liquid Samples	17
		CY2.ID1	Radioactive Effluent Controls Program	15
		STP R.10C	Reactor Coolant System Water Inventory Balance	47

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		XI1.ID5	Collection and Submittal of NRC Performance Indicators	1
71152	Corrective Action Documents	Notifications	51049099, 51046372, 51047439, 51047935, 51048465, 51049999, 51050268, 51050291, 51050412	
	Miscellaneous	UL Reference Number 50683	Underwriters Laboratories Testing Report on Sprinklers Sampled from Diablo Canyon Nuclear Power Plant	
	Procedures	MIP CT-3.0	Balance of Plant Coatings (DCP-213)	6
		STP M-65	Sprinkler/Deluge System Visual Verification	21