



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

October 26, 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 05000275/2017003 and 05000323/2017003**

Dear Mr. Halpin:

On September 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant Units 1 and 2. On October 5, 2017, the NRC inspectors discussed the results of this inspection with Mr. J. Welsch, Site Vice President and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. 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.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the 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 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 05000275/2017003 and
05000323/2017003
w/ Attachments:
1. Supplemental Information
2. RFI for Occupational Radiation Safety
Inspection

DIABLO CANYON POWER PLANT – NRC INTEGRATED INSPECTION REPORT
05000275/2017003 and 05000323/2017003 - Dated October 26, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000275; 05000323

License: DPR-80; DPR-82

Report: 05000275/2017003; 05000323/2017003

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: July 1 through September 30, 2017

Inspectors: C. Newport, Senior Resident Inspector
J. Reynoso, Resident Inspector
G. Kolcum, Senior Resident Inspector
M. Phalen, Senior Health Physicist
J. O'Donnell, CHP, Health Physicist

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

SUMMARY

IR 05000275/2017003, 05000323/2017003; 07/01/2017 – 09/30/2017; Diablo Canyon Power Plant; Operability Determinations and Functionality Assessments

The inspection activities described in this report were performed between July 1 and September 30, 2017, by the resident inspectors at Diablo Canyon Power Plant and inspectors from the NRC's Region IV office. One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. The significance of inspection findings is indicated by their color (i.e., Green, greater than Green, White, Yellow, or Red), 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.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure of the licensee to identify and correct a condition adverse to quality. Specifically, the licensee failed to implement prompt corrective actions related to a nitrogen leak from a component associated with safety-related pressurizer power-operated relief valve (PORV), PCV-455C. The nitrogen leak subsequently resulted in the PORV being declared inoperable, as well as the declaration of an Alert emergency action level classification due the Unit 2 containment atmosphere exceeding habitability limits.

The licensee's failure to implement prompt corrective action to correct excessive nitrogen leakage into the Unit 2 containment was a performance deficiency. The finding was more than minor because it was associated with the equipment performance 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 excessive nitrogen leakage resulted in the inoperability of safety-related PORV PCV-455C for greater than technical specification allowed outage time and atmospheric conditions in Unit 2 containment that were an immediate danger to life and health, prompting an Alert emergency declaration.

Using NRC Manual Chapter 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined the finding screened as having very low significance (Green) because: (1) it was not a design deficiency; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical specification allowed outage time; and (4) did not result in the loss of a high safety-significant non-technical specification train. The finding was assigned a human performance cross-cutting aspect associated with consistent processes, in that the licensee did not use a systematic approach in properly assessing the potential risk significance of an increasing trend of nitrogen leakage inside containment [H.13]. (Section 1R15)

PLANT STATUS

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

On July 6, 2017, Unit 1 reduced power to 25 percent to troubleshoot and repair feedwater regulator valve FCV-520 oscillations. Unit 1 returned to full power on July 9, 2017.

Units 1 and 2 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)

.1 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On September 6, 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 high temperatures and grid disturbances due to fires, and the licensee's 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.

.2 Readiness to Cope with External Flooding

a. Inspection Scope

On September 13, 2017, the inspectors completed an inspection of the station's readiness to cope with external flooding. After reviewing the licensee's flooding analysis, the inspectors chose one plant area that was susceptible to flooding:

- Unit 1 and Unit 2 intake structure

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

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

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

Partial Walk-Down

a. Inspection Scope

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

- July 20, 2017, Unit 2, centrifugal charging pump 2-1
- September 15, 2017, Unit 2, emergency diesel generator 2-1
- September 20, 2017, Unit 2, auxiliary salt water pump 2-2

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 three partial system walk-down samples as defined in Inspection Procedure 71111.04.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

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

- July 11, 2017, Units 1 and 2, intake structure
- July 26-27, 2017, Units 1 and 2, auxiliary saltwater pump rooms 1-1 and 2-2
- August 7, 2017, Units 1 and 2, auxiliary building radiological controlled area located on the 100 foot elevation
- August 23, 2017, Units 1 and 2, H block of auxiliary building 100 foot elevation
- September 19, 2017, Unit 1 and Unit 2, turbine building 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.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

On September 12, 2017, the inspectors completed an inspection of the station's ability to mitigate flooding due to internal causes. After reviewing the licensee's flooding analysis, the inspectors chose the following plant area containing risk-significant structures, systems, and components that were susceptible to flooding:

- Units 1 and 2, diesel fuel oil transfer pump vaults 0-1 and 0-2

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

These activities constituted completion of one flood protection measures sample, as defined in Inspection Procedure 71111.06.

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 September 20, 2017, the inspectors observed simulator training for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance.

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:

- August 18, 2017, Unit 1, significant instrument air leak impacting letdown isolation valve CVCS-1-8152, including the pre-job brief
- August 22, 2017, Unit 1, transient from normal letdown to excess letdown

In addition, the inspectors assessed the operators' adherence to plant procedures, including 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 SSCs:

- September 12, 2017, Units 1 and 2, auxiliary salt water
- September 25-28, 2017, Units 1 and 2, 480V switchgear HVAC air balance evaluation

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:

- August 1, 2017, Unit 1, vital battery charger 1-1, maintenance outage
- August 22-24, 2017, Unit 2, emergency diesel generator 2-3, extended maintenance outage
- September 13, 2017, Units 1 and 2, auxiliary saltwater, high ocean temperature condition
- September 27, 2017, Unit 2, vital battery charger 2-1, clean and inspection maintenance outage

The inspectors verified that these risk assessments were performed in a timely manner 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 six operability determinations that the licensee performed for degraded or nonconforming SSCs:

- July 6, 2017, operability determination of Unit 1, steam generator 1-2 level oscillations
- July 26, 2017, operability determination of Unit 2, emergency diesel generator 2-2 turbo air compressor sensing line contamination

- August 4, 2017, operability determination of Unit 2, pressurizer PORV PCV-455C, inoperability due to nitrogen leakage
- August 29, 2017, operability determination of Unit 2, emergency diesel generator 2-3 starting air leak train B pressure control valve PCV-105 leak
- September 12, 2017, operability determination of Unit 1, charging pump lube oil pump not auto stopping
- September 27, 2017, operability determination of Unit 2, auxiliary feedwater pump 1-2 steam supply valve MS-2-FCV-95 leak-by

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

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

b. Findings

Introduction. The inspectors identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the failure of the licensee to identify and correct a condition adverse to quality. Specifically, the licensee failed to implement prompt corrective actions related to a nitrogen leak from a component associated with safety-related PORV, PCV-455C. The nitrogen leak subsequently resulted in the PORV being declared inoperable as well as the declaration of an Alert emergency action level classification due the Unit 2 containment atmosphere exceeding habitability limits.

Description. On June 2, 2016, Unit 2 completed refueling outage 2R19, during which the PORV backup nitrogen system was modified with the addition of larger nitrogen accumulators and new ASME code relief valves. The larger accumulator design improved design margin for accident mitigation of design basis events by increasing the volume of nitrogen available to cycle the PORVs. Extensive leak testing and bench tests verified the new safety-related nitrogen system components were satisfactory, and not leaking, prior to and following the installation. For events in which both the normal instrument air and nitrogen supplies are lost, backup nitrogen accumulators allow the safety-related PORVs (PCV-455C and PCV-456) the ability to be cycled opened and closed a specific number of times over a period of time in response to various design basis scenarios.

On November 22, 2016, evidence of a nitrogen supply system leakage was documented in Notification 50710432. Operators confirmed the source of the nitrogen leakage was inside Unit 2 containment, but the specific location or components were not known.

On December 1, 2016, operators identified a notable change in the nitrogen leak rate. The Unit 2 nitrogen system supply gas bottles were being changed at a rate far greater than expected compared to Unit 1. The Unit 1 nitrogen bottle change out rate was

approximately one bottle per month whereas the Unit 2 nitrogen bottle change out rate had become approximately one bottle every 1-2 days.

On July 28, 2017, operators planned to enter the Unit 2 containment to investigate the nitrogen leakage, first identified in November 2016. Prior to containment entry, two separate air samples were taken and both results showed Unit 2 containment oxygen concentration levels had fallen below the acceptable safe minimum. As a result, operators declared the Unit 2 containment atmosphere was in a condition immediately dangerous to life and health (IDLH). Since the Unit 2 containment is listed as a vital area in the emergency plan and was determined to have an IDLH atmosphere, an Alert emergency classification was declared and the emergency response organization was activated. Immediate corrective actions, as directed by the emergency response team, restored oxygen levels to acceptable levels with initiation of several containment purges. Subsequent licensee investigations determined the largest nitrogen leak source in the Unit 2 containment (which resulted in the low oxygen environment) was an O-ring failure within the ASME code relief valve RV-355, a safety-related relief valve associated with the PORV PCV-455C backup nitrogen accumulator.

The inspectors reviewed historical data associated with the Unit 2 nitrogen usage and determined that the licensee had identified a leak associated with the nitrogen supply system inside the Unit 2 containment in 2016. Following assessment that the leak was from inside containment, a timely investigation to verify the source of the leak was not completed from December 1, 2016 to July 28, 2017, a period of nearly 8 months. In addition, the inspectors noted a quarterly air sample of Unit 2 containment taken on April 4, 2017, indicated a drop in oxygen concentration level from its normal concentration of 21.3 percent to 19.7 percent, which was an additional missed opportunity for the licensee to have initiated an investigation to identify and resolve this condition, but documentation of the condition was not entered into the corrective action program. Therefore, the inspectors concluded that resolution of the condition was not timely and the potential risk significance was not appropriately evaluated by the corrective action process during troubleshooting. In addition, as a result of the licensee's failure to implement prompt corrective actions related to a nitrogen leak, the PORV was rendered inoperable for longer than permitted by TS 3.4.11.

Analysis. The licensee's failure to implement prompt corrective action to correct excessive nitrogen leakage into the Unit 2 containment was a performance deficiency. The finding was more than minor because it was associated with the equipment performance 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 excessive nitrogen leakage resulted in the inoperability of safety-related PORV PCV-455C for greater than technical specification allowed outage time, and atmospheric conditions in Unit 2 containment that were an immediate danger to life and health prompting an Alert emergency declaration.

Using NRC Manual Chapter 0609, "Significance Determination Process," Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings," and Appendix A, Exhibit 2, "Mitigating Systems Screening Questions," the inspectors determined the finding screened as having very low significance (Green) because: (1) it was not a design deficiency; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of function of at least a single train for longer than its technical

specification allowed outage time; and (4) did not result in the loss of a high safety-significant non-technical specification train. The finding was assigned a human performance cross-cutting aspect associated with consistent processes, in that the licensee did not use a systematic approach in properly assessing the potential risk significance of an increasing trend of nitrogen leakage inside containment [H.13].

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion XVI, requires, in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to the above, between December 1, 2016, and July 28, 2017, the licensee failed to identify and correct a condition adverse to quality by not correcting the cause of excessive nitrogen leakage into Unit 2 containment. Subsequently, excessive nitrogen leakage resulted in the IDLH conditions inside Unit 2 containment and the inoperability of a safety-related PORV for greater than technical specification allowed outage time. In response to this issue, in addition to the immediate actions noted above, the licensee initiated Notification 50934650, initiated an equipment failure cause evaluation, a root cause evaluation, and made repairs of nitrogen supply components including relief valve RV-355. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, it is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy. NCV 05000323/2017003-01, "Inadequate Corrective Actions resulted in a Failure to Comply with Technical Specification 3.4.11 and an Emergency Declaration"

1R18 Plant Modifications (71111.18)

a. Inspection Scope

On September 12-14, 2017, the inspectors reviewed a temporary plant modification to the Unit 2, nuclear power range instrumentation in support of troubleshooting, as documented in Notification 50907728. The inspectors verified that the licensee had installed this temporary modification in accordance with technically adequate design documents. The inspectors verified that this modification did not adversely impact the operability or availability of affected SSCs. The inspectors reviewed design documentation and plant procedures affected by the modification to verify the licensee maintained configuration control.

These activities constituted completion of one sample of temporary 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 five post-maintenance testing activities that affected risk-significant SSCs:

- July 17, 2017, Unit 2, residual heat removal pump 2-1, pump motor preventative maintenance and post-maintenance testing, Work Order 64155680

- July 19, 2017, Units 1 and 2, emergency diesel generator transfer pump 0-2 maintenance, Work Order 64145012
- July 26-27, 2017, Unit 1, auxiliary saltwater cooling pump 1-1, packing replacement and preventative maintenance post-maintenance testing, Work Order 64178991
- August 2, 2017, Unit 2, test of backup nitrogen accumulator for PCV-455C, pressurizer PORV following replacement accumulator of relief valve of RV-355, Work Order 60103127
- August 26-28, 2017, Unit 2 emergency diesel generator 2-3, maintenance and post-maintenance testing, Work Order 64186067

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 five 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:

- July 17, 2017, Unit 2, exercising residual heat removal pump 2-1, suction valve 8700A, per procedure STP V-3M4A

Other surveillance tests:

- July 6, 2017, Unit 1, exercising full length control rods, per procedure STP R-1A
- August 23, 2017, Unit 2, 4 kV Bus F, emergency diesel generator start under voltage relay testing, per procedure STP M-75F
- September 20, 2017, Unit 2, auxiliary salt water pump 2-1 routine surveillance, per procedure STP P-ASW-21

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.

Cornerstone: Emergency Preparedness

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS2 Occupational ALARA Planning and Controls (71124.02)

a. Inspection Scope

The inspectors assessed licensee performance with respect to maintaining individual and collective radiation exposures ALARA. The inspectors performed this portion of the attachment as a post-outage review. During the inspection the inspectors interviewed licensee personnel, reviewed licensee documents, and evaluated licensee performance in the following areas:

- Radiological work planning, including work activities of exposure significance, and radiological work planning ALARA evaluations, initial and revised exposure estimates, and exposure mitigation requirements. The inspectors also verified that the licensee's planning identified appropriate dose reduction techniques, reviewed any inconsistencies between intended and actual work activity doses, and determined if post-job (work activity) reviews were conducted to identify lessons learned.
- Verification of dose estimates and exposure tracking systems, including the basis for exposure estimates, and measures to track, trend, and if necessary reduce occupational doses for ongoing work activities. The inspectors evaluated the licensee's method for adjusting exposure estimates and reviewed the licensee's evaluations of inconsistent or incongruent results from the licensee's intended radiological outcomes.
- Problem identification and resolution for ALARA planning. The inspectors reviewed audits, self-assessments, and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of three of the five required samples of occupational ALARA planning and controls program, as defined in Inspection Procedure 71124.02, and completes the inspection.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

a. Inspection Scope

The inspectors evaluated the accuracy and operability of the licensee's personnel monitoring equipment, verified the accuracy and effectiveness of the licensee's methods for determining total effective dose equivalent, and verified that the licensee was appropriately monitoring occupational dose. The inspectors interviewed licensee personnel, walked down various portions of the plant, and reviewed licensee performance in the following areas:

- Source term characterization, including characterization of radiation types and energies, hard-to-detect isotopes, and scaling factors.
- External dosimetry including National Voluntary Laboratory Accreditation Program (NVLAP) accreditation, storage, issue, use, and processing of active and passive dosimeters.
- Internal dosimetry, including the licensee's use of whole body counting, use of in vitro bioassay methods, dose assessments based on airborne monitoring, and the adequacy of internal dose assessments.
- Special dosimetric situations, including declared pregnant workers, dosimeter placement and assessment of effective dose equivalent for external exposures (EDEX), shallow dose equivalent, and neutron dose assessment.
- Problem identification and resolution for occupational dose assessment. The inspectors reviewed audits, self-assessments, and corrective action program documents to verify problems were being identified and properly addressed for resolution.

These activities constitute completion of the five required samples of occupational dose assessment program, as defined in Inspection Procedure 71124.04.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index: Heat Removal Systems (MS08)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2016 through June 2017 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear

Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for heat removal systems for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index: Residual Heat Removal Systems (MS09)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2016 through June 2017 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for residual heat removal systems for Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index: Cooling Water Support Systems (MS10)

a. Inspection Scope

The inspectors reviewed the licensee's mitigating system performance index data for the period of July 2016 through June 2017 to verify the accuracy and completeness of the reported data. The inspectors used definitions and guidance contained in Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the reported data.

These activities constituted verification of the mitigating system performance index for cooling water support systems 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 Semiannual Trend Review

a. Inspection Scope

The inspectors reviewed the licensee's corrective action program, performance indicators, system health reports, margin management program reports, and other documentation to identify trends that might indicate the existence of a more significant safety issue. The inspectors verified that the licensee was taking corrective actions to address identified adverse trends.

These activities constituted completion of one semiannual trend review sample, as defined in Inspection Procedure 71152.

b. Observations and Assessments

In general, the licensee has identified trends and appropriately addressed them in the CAP. The inspectors evaluated the licensee trending methodology and observed that the licensee performs ongoing assessments and quarterly detailed reviews documented in a Station Integrated Performance Monitoring report. The licensee routinely reviews cause codes, involves key organizations, operating experience, key words, and system links to identify potential trends in their data. The inspectors noted the licensee's increasing use of cognitive trending in their trend reviews. The inspectors compared the licensee process results with the results of the inspectors' daily screening.

c. Findings

No findings were identified.

.3 Annual Follow-up of Selected Issues

a. Inspection Scope

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

- On September 26, 2017, Diablo Canyon structures monitoring program

The inspectors reviewed Diablo Canyon Power Plant's structures monitoring program. As part of the inspection, the inspectors assessed PG&E's baseline and periodic structures monitoring walkdowns, and compared structural indications identified by the inspectors to those identified by PG&E during the periodic and baseline walkdowns. The inspectors interviewed PG&E engineering personnel and reviewed program procedures and documentation.

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

b. Findings

No findings were identified.

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

Alert – Unit 2, due to Low Oxygen Levels inside Containment

At 12:06 p.m. PDT, the licensee declared an –Alert emergency classification (NRC Event Notice 52876) due to low oxygen levels inside containment. The Alert was initiated at the site due to discovery of Unit 2 containment atmosphere reaching IDLH levels of less than 19.5 percent oxygen due to nitrogen leakages described in Section 1R15 of this report. The resident inspector was on site at the time and was immediately notified about the condition. The inspector responded to the control room and later to the technical support center to observe the licensee's emergency response organization actions, coordination, and communication with onsite personnel and offsite agencies. Unit 2 containment oxygen levels were restored to normal by purging the containment, and the Alert was terminated on July 28, 2017, at 6:19 p.m. PDT. The inspectors reviewed the appropriateness of the Alert classification and determined that the declaration of Unit 2 event was accurate and timely. There were no impacts to the safe operation of the plant from this event. Both reactor units remained at full power throughout the event. Based on the resident inspectors' follow-up review of the causes of this event, a finding is documented in Section 1R15 of this inspection report.

a. Inspection Scope

The inspectors reviewed the below listed events for plant status and mitigating actions to: (1) provide input in determining the appropriate agency response in accordance with Management Directive 8.3, "NRC Incident Investigation Program;" (2) evaluate performance of mitigating systems and licensee actions; and (3) confirm that the licensee properly classified the event in accordance with emergency action level procedures and made timely notifications to NRC and state/governments, as required.

- July 28, 2017, Unit 2, Alert, declaration due to low oxygen level inside containment.

Documents reviewed by the inspectors are listed in the attachment.

b. Findings

No findings were identified.

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

4OA6 Meetings, Including Exit

Exit Meeting Summary

On August 4, 2017, the inspectors presented the radiation safety inspection results (Sections 2RS2 and 2RS4) to Mr. K. Johnston, Acting Station Director, 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.

On October 5, 2017, the resident inspectors presented the inspection results to Mr. J. Welsch, Site Vice President, 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.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

T. Baldwin, Director, Nuclear Site Services
J. Covey, Radiation Protection General Foreman
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
J. Hinds, Director, Quality Verification
L. Hopson, Director Maintenance Services
M. Huszarik, ALARA Foreman
T. Irving, Manager, Radiation Protection
K. Johnston, Director of Operations
M. McCoy, NRC Interface, Regulatory Services
L. Millian, Radiation Protection Supervisor
J. Morris, Senior Advising Engineer
C. Murry, Director Nuclear Work Management
J. Nimick, Senior Director Nuclear Services
A. Peck, Director, Nuclear Engineering
R. Rogers, ALARA Supervisor, Radiation Protection
S. Stoffel, Supervisor, Dosimetry
L. Sewell, Supervisor, Radiation Protection
A. Warwick, Supervisor, Emergency Planning
J. Welsch, Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000323/2017003-01	NCV	Inadequate Corrective Actions resulted in a Failure to Comply with Technical Specification 3.4.11 and an Emergency Declaration (Section 1R15)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
Calc 467-1	Estimated Flow Velocity	0

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CP M-16	Severe Weather	12
CP M-16	Severe Weather	14
DCM T-9	Wind, Tornado, and Tsunami	14B
MA1.ID23	Review of Intake Preparedness for High Debris Loading Event	3
OP AP-35	Grid Disturbance	0
OP O-28	Intake Management	22
STP I-1A	Routine Shift Checks Required by Licensee's	137
STP M-70.SWG	Inspection of ECG Swing Type Doors	4

Notifications

50931392	50939710	50939711	50939747	50939751
50939752	50939971	50941460		

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP B-1 A:I	CVCS – Charging, Letdown and Seal Injection – Place in Service	25
OP B-1A	CVCS – Charging and Letdown System	10
OP J-6B:I	Diesel Generator 2-1 – Make Available	34
OP J-6B:I-A	Diesel Generator 2-1 – Alignment Checklist	0

Notifications

50943120	50943121	50932785
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Section 1R05: Fire Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OM8.ID4	Control of Flammable and Combustible Materials	27A
OP AP-34.8.1	Fire Response – ASW Pump 1-1 Vault	0
OP AP-34.8.4	Fire Response – ASW Pump 2-2 Vault	0

Notifications

50934040	50934041	50935459	50685679	50935466
50935521	50935550	50935632	50932248	50853222
50937953	50861163	50908094	50370001	

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
111906-32	Intake Structure 18 foot elevation- Fire Protection	6
PA-1	Fire Drawing: Intake Structure	5
PA-2	Fire Drawing: Intake Structure	5
RA-7/RA-8	Fire Drawing: Radiological Control Area and H-Block Elevation 100-foot	5

Miscellaneous

<u>Number</u>	<u>Description</u>	<u>Date</u>
TCP-9866	Transient Combustible Permit Zone 30-A-5	June 6, 2017

Work Orders

64131888	68047869
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Section 1R06: Flood Protection Measures

Procedure

<u>Number</u>	<u>Title</u>	<u>Date</u>
LBIE S-2009-413	Revision to Alarm Response Procedure AR-PK15-01	June 6, 2009

Notifications

50941229	50907890	50927622	50940142
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Work Orders

64132858	64148942
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Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
106721	Diesel Fuel Oil System Diagram	64
438165	Emergency Diesel Generator Fuel Oil System	14
508845	Diesel Fuel Oil Transfer Pump Vaults	13

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision</u>
DCM T-21	Design Criteria Memorandum Diesel Engine T-21	21
FSAR Section 9.5.4.3	Flooding Analysis per General Design Criteria two	23

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

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP AP-18	Letdown Line Failure	11
OP B-1A:IV	CVCS- Excess Letdown Make Ready	19
OP B-1A:XII	CVCS – Normal Letdown Operations	23A
OP1.DC10	Conduct of Operations	47
OP-AP 9	Instrument Air Failure	32
OP-AP-35	Grid Disturbance	0

Notification

50937397

Drawing

<u>Number</u>	<u>Description</u>	<u>Revision</u>
106725-25	Service Air System CVCS	211

Section 1R12: Maintenance Effectiveness

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD7.DC6	On-Line Maintenance Risk management	24

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MA1.ID17	Maintenance Rule Monitoring Program	31
OP1.DC17	Control of Equip Required by Tech Spec	31A
STP M-235A	ASW Piping Inspection, CCW Heat Exchanger	2
STP M-235B	ASW Piping Inspection at Vacuum Breaker Vault	2
STP M-235C	ASW Piping Inspection at Intake Structure	3

Notifications

50940373	50940162	50940153	50940027	50867872
50867633	50943120	50299564	50407287	50378520
50317852	50608110	50417291	50033138	50050590

Work Order

64005463

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
Auxiliary Saltwater System Health Report	Remote Visual Inspection of the Diablo Canyon Power Plant, unit 2, Auxiliary Salt Water Piping Train 2-1 and 2-2, During the 2R16 Refueling Outage	May 2011

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD7.DC6	On-Line Maintenance Risk Management	24
AD7.DC6	On-Line Maintenance Risk Management	25
AD7.ID14	Assessment of Integrated Risk	9
AD7.ID14	Assessment of Integrated Risk	12
AD7.ID14	Assessment of Integrated Risk	13
OP J-2:VIII	Guidelines for Reliable Transmission Service for DCPD	30
OP J-6B:IX	Diesel Generator Extended Online Maintenance	10
OP O-36	Protected Equipment Postings	13A

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP O-36	Protected Equipment Postings	16
STP I-1A	Routine Shift Checks by Licenses	137
STP M-21-ENG.1	Diesel Engine Generator Inspection (Every Refueling Outage)	24
STP M-21-RTS.1	Return Diesel Generator to Service Following Outage Maintenance	16
STP M-9A3	Diesel Engine Generator 2-3 Routine Surveillance Test	23
TS3.NR1	Probabilistic Risk Assessment (RA)	8

Notifications

50702104	50708845	50918820	50937830	50938366
50861686	50938093	50938092	50938071	50941460
50826941	50944069			

Drawing

<u>Number</u>	<u>Description</u>	<u>Revision</u>
437639	125 Volt DC System, Sheet 1	28

Other

<u>Number</u>	<u>Description</u>	<u>Revision</u>
EDG 2-3-RMAs	Risk Management Actions Directive Diesel Generator 2-3	2

Work Orders

64145720	64165436	64165436	60103328	64122689
64122500				

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
663056-45	Auxiliary Feedwater Pump Vendor Manual	0
MP M-4.14	Auxiliary Feedwater Pump Turbine Maintenance	15
MP M-56.10	Piping Fabrication, Installation, Repair or System Alteration	17

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
OP D-1:II	Auxiliary Feedwater System – Alignment Verification for Plant Startup	31
STP V-3J2	Exercising Pressure Power Operated Relief Valves PCV-455C	18
STP V-3O2	Diesel Starting Air Receiver Leak Check And Check Valve Exercising	14A

Notifications

50929719	50930250	50930623	50930507	50938833
50938777	50932085	50931456	50933907	50934586
50940126	50930027	50943755	50360551	50941468

Work Orders

60102717	68037723	60104597
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Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
102021	Turbo Charger Air Assist System	62
107704	Auxiliary Feedwater Pump 2-1	75

Section 1R18: Plant Modifications

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CF4.ID7	Temporary Alteration	29A
TS3.ID2	Licensing Basis Impact Evaluation	44

Notifications

50700075	50935950	50907728
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Work Orders

60103502	60103503	60099237
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Drawing

<u>Number</u>	<u>Title</u>	<u>Date</u>
EDT 4_01600	Engineering Drawing Transmittal for TMOD (M&TE) Install Recorders to Monitor NI Deviation	August 21, 2017

Section 1R19: Post-Maintenance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD13.ID4	Post Maintenance Testing	26
MP M-51.5	Testing and Maintenance of Safety/Relief Valves	30
OP E-5:I	Auxiliary Saltwater System Operations	36
STP M-105	Test of BU N2 Accumulator for PCV-455C, Pressurizer Power Operated Relief Valve	29
STP M-21- RTS.RTS	Return Diesel Generator Engine to Service Following Outage Maintenance	16
STP M-9A3	Diesel Generator 2-3 Routine Surveillance Testing	11b
STP P-ASW-11	Routine Surveillance Test of Auxiliary Saltwater Pump 1-1	34
STP P-DFO-02	Routine Surveillance Test of Diesel Fuel Oil Transfer Pump 0-2	12

Notifications

0521078	50926884	50889079	50932948	50934032
50836224	50933928	50933941	50934243	50934586
50937835	50888614	50937836	50938830	50938553
50938369	50938534	50938548	50938551	50938833
50938834				

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
106717	Auxiliary Saltwater Intake Area	198
106721	Diesel Fuel Oil System	64
107721	Jacket Water Cooling DEG 2-3	58
107725	Air and Backup Nitrogen Gas System	163
108036	Instrument Air/Nitrogen Systems	76

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
663217	AC Motor Frame 5010P24	6
663312	ML14 Series Relief Valve	3

Miscellaneous

<u>Number</u>	<u>Description</u>	<u>Date</u>
DC 663217-26	Westinghouse Electric Corporation Residual heat Removal Pumps (Ingersoll-Rand) Vendor Manual	
RPE 800000772	Replacement Part Evaluation Relief Valves 900 Series	March 3, 2016

Work Orders

64155680	64180570	6009745	64145012	64145138
64039091	64178991	64167854	60103127	64146206
64150459	64186067			

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MP E-50.61	Basler Type BE1-27 Medium Inverse Undervoltage Relay Maintenance	8
STP P-ASW-21	Routine Surviellance of Auxiliary Saltwater Pump	32
STP R-1A	Exercising Full Length Control Rods	24
STP V-3M4A	Exercising RHR Pump 1 Suction Valve 8700A	7
STP V-75F	4 kV vital bus F undervoltage relay testing	6

Notification

50635522

Work Orders

64178443	64131866
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Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Revision</u>
LROCARD	Reactor Operator Qualification Reactivity Manipulations	21

Drawing

<u>Number</u>	<u>Title</u>	<u>Date</u>
441570/71	4 kV switchgear bus F wiring diagram	November 2012

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CF5.1D12	Consumable Material Control	6
EV2.DC4	Hazardous Materials Management Program	10A
RCP.D-200	Writing Radiation Work Permits ALARA Processes	55A
RCP.D-202	RWP Work Instructions	14
RCP.D-220	Control of Access to High, Locked High, and Very High Radiation Areas	51
RCP.D-240	Radiological Posting	25
RP1	Radiation Protection	8
RP1.DC6	Radiation Protection Code of Conduct	4
RP1.ID1	ALARA Program	10
RP1.ID15	Radiological Risk Assessment	4
RP1.ID16	Radiation Worker Expectation	10
RP1.ID2	Use and Control of Temporary Radiation Shielding	11A
RP1.ID9	Radiation Work Permits	13

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
152930028	2016 Radiation Protection Programs Audit Report	February 16, 2016

Notifications

50905151	50881793	50851179	50923269	50917653
50850585	50850918	50870375	50881793	50905151
50914273	50908209	50892430	50855116	50852165

50896998

Radiation Work Permits Closure Packages

<u>Number</u>	<u>Title</u>
RWP 16-0032B	2016 ISFSI Spent Fuel Campaign
RWP 16-2051	2R19 RCP Motor Maintenance
RWP 17-1004	1R20 Containment Decontamination Activities
RWP 17-1020	1R20 Maintenance and Reassembly
RWP 17-1061	1R20 Containment Valves and Breaches
RWP 17-1088	1R20 Permanent Cavity Seal
RWP 17-1092	1R20 Remove and Replace CVCS-1-92

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	1R19 Outage ALARA Report	
	1R20 DRAFT Input (Technical Data) into Outage ALARA Report	
	2R20 Outage ALARA Report	
	ALARA Program Improvements	May 30, 2017

Section 2RS4: Occupational Dose Assessment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
EP RB-2	Emergency Exposure Guides	8
RCP D-320	TLD Issue and Control	27
RCP D-330	Personnel Dosimetry Evaluations	10, 11
RCP D-335	Radiation Exposure Reporting	5
RCP D-370	Evaluation of Internal Deposition of Radioactive Material	13
RCP D-420	Sampling and Measuring Airborne Radioactivity	32A
RCP DP-9.6	TLD Vendor Quality Control	2
RCP.D-959	MGP IRD 2000 Irradiator	2
RCP-EM-4	Area TLD Monitoring	4
RP1	Radiation Protection	8

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RP1.DC6	Radiation Protection Code of Conduct	4
RP1.ID10	Embryo/Fetus Protection Program	9
RP1.ID16	Radiation Worker Expectations	10
RP1.ID6	Personnel Dose Limits and Monitoring Requirements	15

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
50828676	Internal and External Dosimetry Self-Assessment	October 26, 2016
151800027	Audit of Ludlum Instruments, Inc. (LMI)	September 15, 2015
152930028	2016 Radiation Protection Programs Audit Report	February 16, 2016

Notifications

50800930	50801357	50802599	50809863	50814638
50816108	50826122	50831082	50831899	50832988
50862513	50863144	50869096	50904173	50908036
50919276				

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	2R19 Alpha Characterization Report	June 20, 2017
2015	Radwaste Scaling Factors	May 12, 2016
2016	Radwaste Scaling Factors	June 9, 2017
100555-0	Certificate of Accreditation to ISO/IEC 17025:2005	July 1, 2017

Section 40A1: Performance Indicator Verification

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
XI1.ID5.	Collection and Submittal of NRC Performance Indicators	1

Other

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
DCPP MSPI Basis	Mitigating System Performance Index Basis Document	10
MSPI Derivation Reports	Unit 1 and 2 Diablo Canyon (MSPI MS 08,09,10)	August 2017
Technical Specification Logs	Diablo Canyon Power Plant	July 2016 to June 2017

Section 40A2: Problem Identification and Resolution

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AWP E-016	Inspection Guide – Maintenance Rule Structural Monitoring Programs - Civil	
AWP E-036	Containment Coating Inspection Guide – Coating Monitoring Procedure	1
MA1.NE1	maintenance Rule Monitoring Program – Civil Implementation	6
MIP CT-1.0	Containment Field Coatings (DCP-206)	8
MIP CT-2.0	Coating Quality Monitoring Program (DCP-210)	4
OM15.ID10	Performance Monitoring Program	0A
TS5.ID2	Margin Management	5

Notifications

50932110	50934115	50304061	50915491	5091146
50940486	50943769	50864135	50917160	50910294
50908308	50908473	50880745		

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
463648	Structural Modifications Turbine Building Plan at El. 104'-0"	20
463663	Civil Structural Modifications Lines 1 & 36	10

Miscellaneous

<u>Number</u>	<u>Description</u>
2Q2017	Station IPM Report
4Q2016	Station IPM Report

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

Notifications

50934796	50934198	50934808	50934807	50934806
50934805	50934899			

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Document Access and Management System
ALARA	as low as reasonably achievable
ASME	American Society of Mechanical Engineers
CAP	corrective action program
CCW	component cooling water
DCPP	Diablo Canyon Power Plant
HVAC	heating, ventilation, and air conditioning
IDLH	immediate danger to life and health
NCV	non-cited violation
PG&E	Pacific Gas and Electric Company
PORV	power-operated relief valve
RFI	Request for Information
RHR	residual heat removal
SSC	structure, system, and component

**The following items are requested for the
Occupational Radiation Safety Inspection
at Diablo Canyon
July 31, - August 4, 2017
Integrated Report 2017003**

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **July 10, 2017**.

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

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

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

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

If you have any questions or comments, please contact Marty Phalen at (817) 200-1158 or Martin.Phalen@nrc.gov.

PAPERWORK REDUCTION ACT STATEMENT

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

2. Occupational ALARA Planning and Controls (71124.02)

Date of Last Inspection: **May 9, 2016**

- A. List of contacts and telephone numbers for ALARA program personnel
- B. Applicable organization charts
- C. Copies of audits, self-assessments, and LERs, written since date of last inspection, focusing on ALARA
- D. Procedure index for ALARA Program
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures may be requested by number after the inspector reviews the procedure indexes.
 - 1. ALARA Program
 - 2. ALARA Committee
 - 3. Radiation Work Permit Preparation
- F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, related to the ALARA program. In addition to ALARA, the summary should also address Radiation Work Permit violations, Electronic Dosimeter Alarms, and RWP Dose Estimates

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are “searchable” so that the inspector can perform word searches.
- G. List of work activities greater than 1 rem, since date of last inspection, Include original dose estimate and actual dose.
- H. Site dose totals and 3-year rolling averages for the past 3 years (based on dose of record)
- I. Outline of source term reduction strategy
- J. If available, provide a copy of the ALARA outage report for the most recently completed outages for each unit
- K. Please provide your most recent Annual ALARA Report.

4. Occupational Dose Assessment (Inspection Procedure 71124.04)

Date of Last Inspection: **July 27, 2015**

- A. List of contacts and telephone numbers for the following areas:
 - 1. Dose Assessment personnel
- B. Applicable organization charts
- C. Audits, self-assessments, vendor or NUPIC audits of contractor support, and LERs written since date of last inspection, related to:
 - 1. Occupational Dose Assessment
- D. Procedure indexes for the following areas:
 - 1. Occupational Dose Assessment
- E. Please provide specific procedures related to the following areas noted below. Additional Specific Procedures will be requested by number after the inspector reviews the procedure indexes.
 - 1. Radiation Protection Program
 - 2. Radiation Protection Conduct of Operations
 - 3. Personnel Dosimetry Program
 - 4. Radiological Posting and Warning Devices
 - 5. Air Sample Analysis
 - 6. Performance of High Exposure Work
 - 7. Declared Pregnant Worker
 - 8. Bioassay Program
- F. List of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, associated with:
 - 1. National Voluntary Laboratory Accreditation Program (NVLAP)
 - 2. Dosimetry (TLD/OSL, etc.) problems
 - 3. Electronic alarming dosimeters
 - 4. Bioassays or internally deposited radionuclides or internal dose
 - 5. Neutron dose

NOTE: The lists should indicate the significance level of each issue and the search criteria used. Please provide in document formats which are “searchable” so that the inspector can perform word searches.
- G. List of positive whole body counts since date of last inspection, names redacted if desired
- H. Part 61 analyses/scaling factors
- I. The most recent National Voluntary Laboratory Accreditation Program (NVLAP) accreditation report or, if dosimetry is provided by a vendor, the vendor’s most recent results