



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

October 27, 2016

EA-16-104

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 05000275/2016003 AND 05000323/2016003**

Dear Mr. Halpin:

On September 30, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Diablo Canyon Power Plant, Units 1 and 2. On October 5, 2016, the NRC inspectors discussed the results of this inspection with Mr. J. Nimick, Senior Director of Nuclear Services, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

No NRC-identified or self-revealing findings of more than minor significance were identified during this inspection. However, as discussed in Section 4OA5 of this report, the inspectors identified an additional example of the previous Severity Level IV non-cited violation documented in NRC Inspection Report 05000275/2015002 and 05000323/2015002. This violation involved the licensee's failure to maintain fire protection records complete and accurate in all material respects as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 50.9, "Completeness and accuracy of information." Because the additional example occurred during the same time period as the original violation, was caused by the same licensee employee, the significance is similar to the previous violation, and because your corrective actions address the cause of the violation, including this additional example, no new enforcement action is issued in this report.

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

E. Halpin

- 2 -

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Jeremy R. Groom, Chief
Project Branch A
Division of Reactor Projects

Docket Nos. 50-275 and 50-323
License Nos. DPR-80 and DPR-82

Enclosure:

Inspection Report 05000275/2016003 and
05000323/2016003

w/ Attachments:

1. Supplemental Information
2. Request for Information for Occupational
Radiation Safety Inspection

cc w/ enclosure: Electronic Distribution

E. Halpin

- 2 -

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Letter to Edward D. Halpin from Jeremy R. Groom dated October 27, 2016

SUBJECT: DIABLO CANYON POWER PLANT – NRC INSPECTION REPORT
05000275/2016003 and 05000323/2016003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket: 05000275; 05000323

License: DPR-80; DPR-82

Report: 05000275/2016003; 05000323/2016003

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, 2016

Inspectors: C. Newport, Senior Resident Inspector
J. Reynoso, Acting Senior Resident Inspector
R. Alexander, Sr. Project Engineer
J. Choate, Acting Resident Inspector
C. Peabody, Senior Resident Inspector
E. Uribe, Acting Resident Inspector
L. Carson II, Sr. Health Physicist
C. Osterholtz, Senior Operations Engineer
G. George, Senior Reactor Inspector
S. Money, Health Physicist
J. O'Donnell, CHP, Health Physicist
M. Phalen, Sr. Health Physicist

Approved By: Jeremy R. Groom
Chief, Project Branch A
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000275/2016003, 05000323/2016003; 07/01/2016 – 09/30/2016; Diablo Canyon Power Plant; Integrated Inspection Report.

The inspection activities described in this report were performed between July 1 and September 30, 2016, by the resident inspectors at Diablo Canyon Power Plant and inspectors from the NRC's Region IV office. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red), which is determined using Inspection Manual Chapter 0609, "Significance Determination Process." Their cross-cutting aspects are determined using Inspection Manual Chapter 0310, "Aspects within the Cross-Cutting Areas." 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."

No findings were identified.

PLANT STATUS

Unit 1 operated at or near full power for the duration of the inspection period.

Unit 2 began the inspection period at full power. On August 4, 2016, Unit 2 reduced power to 70 percent reactor power due to a misaligned control rod. Following realignment of the control rod, Unit 2 was returned to full power on August 5, 2016, and operated at or near full power for the remainder of this inspection period.

REPORT DETAILS

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Summer Readiness for Offsite and Alternate AC Power Systems

a. Inspection Scope

On July 21, 2016, the inspectors completed an inspection of the station's off-site and alternate-ac power systems. The inspectors inspected the material condition of these systems, including transformers and other switchyard equipment to verify that plant features and procedures were appropriate for operation and continued availability of off-site and alternate-ac power systems. The inspectors reviewed outstanding work orders and open condition reports for these systems. The inspectors walked down the switchyard to observe the material condition of equipment providing off-site power sources. The inspectors assessed corrective actions for identified degraded conditions and verified that the licensee had considered the degraded conditions in its risk evaluations and had established appropriate compensatory measures.

The inspectors verified that the licensee's procedures included appropriate measures to monitor and maintain availability and reliability of the off-site and alternate-ac power systems.

These activities constituted one sample of summer readiness of off-site and alternate-ac power systems, as defined in Inspection Procedure 71111.01.

b. Findings

No findings were identified.

.2 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

On September 30, 2016, the inspectors completed an inspection of the station's readiness for seasonal extreme weather conditions. The inspectors reviewed the licensee's adverse weather procedures for ocean high swells and circulating water intake management during the storm season and evaluated the licensee's

implementation of these procedures. The inspectors verified that prior to onset of the storm season, the licensee had corrected weather-related equipment deficiencies identified during the previous storm season related to auxiliary saltwater, component cooling water, and intake systems.

The inspectors reviewed the licensee's procedures and design information to ensure the circulating water systems would remain functional when challenged by debris loading due to high ocean swells. The inspectors verified that operator actions described in the licensee's procedures were adequate to maintain readiness of these systems. The inspectors walked down portions of these systems to verify the physical condition of the circulating water system.

These activities constituted one sample of readiness for seasonal adverse weather, 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 7, 2016, Unit 2, turbine driven auxiliary feedwater pump 2-1
- August 9, 2016, Unit 2, motor driven auxiliary feedwater pump 2-2
- August 16, 2016, Unit 1, emergency diesel generator 1-2
- September 1, 2016, Unit 2, turbine driven auxiliary feedwater pump 2-1

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

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

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

Quarterly Inspection

a. Inspection Scope

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

- July 6, 2016, Units 1 and 2, fire area RA-3; in the auxiliary building 73 foot elevation
- July 26, 2016, Unit 1, fire area RA-7; auxiliary building fire areas located on the 100 foot elevation
- August 11, 2016, Units 1 and 2, fire areas TB-7, 3-BB, and 3-H-1; turbine building, and auxiliary building areas from 64 foot elevation to 115 foot elevations
- August 18, 2016, Unit 2, fire areas 5A-1, 5A-2, and 5A-3; 480Vac switchgear rooms, auxiliary building 100 foot elevation
- August 18, 2016, Unit 2, fire areas 6A-1, 6A-2, and 6A-3; 120Vdc switchgear and battery rooms, auxiliary building 115 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.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed licensee programs to verify heat exchanger performance and operability for the following heat exchangers and safety-related structure:

- emergency diesel generator 1-2 cooling system
- safety injection lube oil cooler 1-1
- intake structure

The inspectors verified whether testing, inspection, maintenance, and chemistry control programs are adequate to ensure proper heat transfer. The inspectors verified that the periodic testing and monitoring methods, as outlined in commitments to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment," utilized proper industry heat exchanger guidance. Additionally, the inspectors verified that the licensee's chemistry program ensured that biological fouling was properly controlled between tests. The inspectors reviewed previous maintenance records of the heat exchangers to verify that the licensee's heat exchanger inspections adequately addressed structural integrity and cleanliness of their tubes. Specific documents reviewed during this inspection are listed in the attachment.

These activities constituted completion of three triennial heat sink inspection samples as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings were identified.

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

.1 Review of Licensed Operator Requalification

a. Inspection Scope

On August 24, 2016, the inspectors observed simulator training for an operating crew. The inspectors assessed the performance of the operators and the evaluators' critique of their performance. The inspectors also assessed the modeling and performance of the simulator during the simulator training scenario.

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

b. Findings

No findings were identified.

.2 Review of Licensed Operator Performance

a. Inspection Scope

The inspectors observed the performance of on-shift licensed operators in the plant's main control room. At the time of the observations, the plant was in a period of heightened activity. The inspectors observed the operators' performance of the following activities:

- September 11, 2016, Units 1 and 2, 230 kV switchyard outage
- September 30, 2016, Unit 2, 500 kV line hot wash

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.

.3 Annual Review of Requalification Examination Results

a. Inspection Scope

The licensed operator requalification program involves two training cycles that are conducted over a two-year period. In the first cycle, the annual cycle, the operators are administered an operating test consisting of job performance measures and simulator scenarios. In the second part of the training cycle, the biennial cycle, operators are

administered an operating test and a comprehensive written examination. For this annual inspection requirement the licensee was in the first part of the training cycle.

The inspector reviewed the results of the operating tests for both units to satisfy the annual requirements.

On August 8, 2016, the licensee informed the inspector of the following results combining both units:

- 13 of 13 crews passed the simulator portion of the operating test
- 73 of 73 licensed operators passed the simulator portion of the operating test
- 72 of 73 licensed operators passed the job performance measure portion of the operating test

One individual senior reactor operator failed the job performance measure portion of the operating test, was remediated, retested, and passed the retake examination.

These activities constituted completion of one annual licensed operator requalification program sample, as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- August 15-18, 2016, inadequate disconnect connection on 230 kV switchyard circuit switcher 211-1, Notification 50864563
- September 16, 2016, Units 1 and 2, auxiliary saltwater vault rooms ventilation snorkel corrosion technical evaluation, Notification 50866092

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:

- July 25, 2016, 4 kV Vital Bus F, elevated risk during undervoltage relay calibration
- September 11, 2016, Units 1 and 2, elevated risk during 230 kV switchyard outage
- September 21, 2016, Units 1 and 2, elevated risk during 500 kV tower hot wash
- September 26, 2016, Unit 1, elevated risk during startup transformer 1-1 load tap changer control relay change-out

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

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

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

The inspectors reviewed seven operability determinations that the licensee performed for degraded or nonconforming SSCs:

- July 12, 2016, operability determination of emergency diesel generator 1-1 jacket cooling water leak discovered during maintenance, Notification 50862106
- July 13, 2016, operability determination of emergency diesel generators 2-2 and 2-3 potential cap screw failures discovered during maintenance, Notification 50652094
- August 16-17, 2016, operability determination of Unit 1, train B, engineered safeguards feature slave relay K634 failure, Notification 50866135

- August 20, 2016, operability determination of Unit 2 main steam isolation bypass valve FCV-23 failure to stroke, Notification 50861913
- August 22, 2016, operability determination of emergency diesel generator 1-2, lube oil leak from cylinder 1L during routine surveillance test, Notification 50867914
- August 25-26, 2016, operability determination of Unit 1, control room air conditioner inadequate thermal overload/4 kV coordination, Notification 50868945
- September 9, 2016, Units 1 and 2, operability determination of operator work around conditions to compensate for degraded or non-conforming conditions

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.

The inspectors reviewed operator actions taken or planned to compensate for degraded or nonconforming conditions. The inspectors verified that the licensee effectively managed these operator workarounds to prevent adverse effects on the function of mitigating systems and to minimize their impact on the operators' ability to implement abnormal and emergency operating procedures.

These activities constituted completion of seven operability and functionality review samples, which included one operator work-around sample, as defined in Inspection Procedure 71111.15.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

On September 29, 2016, the inspectors reviewed a permanent modification to the Units 1 and 2 safety injection check valve test headers.

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

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

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed six post-maintenance testing activities that affected risk-significant SSCs:

- July 12, 2016, Unit 1, emergency diesel generator 1-1, post maintenance test, Work Order 64164765
- July 22, 2016, Unit 1, emergency diesel generator 1-2, post maintenance test, Work Order 64165082
- August 31, 2016, Unit 2, travelling screen 2-7 drive and chain assembly replacement, Work Order 60083123
- September 16, 2016, Unit 2, emergency diesel generator 2-1 starting air valve 2-21P-41 replacement, Work Order 60088870
- September 19, 2016, Unit 2, auxiliary salt water pump 2-1 stuffing box packing stud hole installation, Work Order 60093902
- September 28, 2016, Unit 1, auxiliary feedwater supply level control valve, LCV-115, positioner control replacement, Work Order 60093787

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

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

Reactor coolant system leak detection tests:

- September 23, 2016, Unit 1, reactor coolant system leak detection system test during period of an elevated leak rate, per procedure STP R-10C

Other surveillance tests:

- July 21, 2016, Unit 2, solid state protection system testing, per procedure STP I-38-B
- September 13, 2016, Unit 1, protection set IV, rack 16 channel operational test, per procedure STP I-36-S4R16
- September 20, 2016, Unit 1, solid state protection system slave relay testing, per procedure STP M-16N

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

1EP6 Drill Evaluation (71114.06)

Emergency Preparedness Drill Observation

a. Inspection Scope

During the inspection period, the inspectors observed two separate emergency preparedness drills to verify the adequacy and capability of the licensee's assessment of drill performance:

- On August 24, 2016, the inspectors reviewed the drill scenario, observed the drill from the technical support center, and attended the post-drill critique.
- On September 21, 2016, the inspectors reviewed the drill scenario, observed the drill from the technical support center, the emergency operations facility, and the simulator, and attended the post-drill critiques.

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

These activities constituted completion of two emergency preparedness drill observation samples, as defined in Inspection Procedure 71114.06.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS5 Radiation Monitoring Instrumentation (71124.05)

a. Inspection Scope

The inspectors evaluated the accuracy and operability of the radiation monitoring equipment used by the licensee to monitor areas, materials, and workers to ensure a radiologically safe work environment. This evaluation included equipment used to monitor radiological conditions related to normal plant operations, anticipated operational occurrences, and conditions resulting from postulated accidents. The inspectors interviewed licensee personnel, walked down various portions of the plant, and reviewed licensee performance associated with radiation monitoring instrumentation, as described below:

- The inspectors performed walk downs and observations of selected plant radiation monitoring equipment and instrumentation, including portable survey instruments, area radiation monitors, continuous air monitors, personnel contamination monitors, portal monitors, and small article monitors. The inspectors assessed material condition and operability, evaluated positioning of instruments relative to the radiation sources or areas they were intended to monitor, and verified performance of source checks and calibrations.
- The inspectors evaluated the calibration and testing program, including laboratory instrumentation, whole body counters, post-accident monitoring instrumentation, portal monitors, personnel contamination monitors, small article monitors, portable survey instruments, area radiation monitors, electronic dosimetry, air samplers, and continuous air monitors.
- The inspectors assessed problem identification and resolution for radiation monitoring instrumentation. 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 three required samples of radiation monitoring instrumentation, as defined in Inspection Procedure 71124.05.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

a. Inspection Scope

The inspectors evaluated whether the licensee maintained gaseous and liquid effluent processing systems and properly mitigated, monitored, and evaluated radiological discharges with respect to public exposure. The inspectors verified that abnormal radioactive gaseous or liquid discharges and conditions, when effluent radiation monitors are out-of-service, were controlled in accordance with the applicable regulatory requirements and licensee procedures. The inspectors verified that the licensee's quality control program ensured radioactive effluent sampling and analysis adequately quantified and evaluated discharges of radioactive materials. The inspectors verified the adequacy of public dose projections resulting from radioactive effluent discharges. The inspectors interviewed licensee personnel and reviewed licensee performance in the following areas:

- During walk downs and observations of selected portions of the radioactive gaseous and liquid effluent equipment, the inspectors evaluated routine processing and discharge of effluents, including sample collection and analysis. The inspectors observed equipment configuration and flow paths of selected gaseous and liquid discharge system components, effluent monitoring systems, filtered ventilation system material condition, and significant changes to effluent release points.
- Calibration and testing program for process and effluent monitors, including National Institute of Standards and Technology (NIST) traceability of sources, primary and secondary calibration data, channel calibrations, set-point determination bases, and surveillance test results.
- Sampling and analysis controls used to ensure representative sampling and appropriate compensatory sampling. Reviews included results of the inter-laboratory comparison program,
- Instrumentation and equipment, including effluent flow measuring instruments, air cleaning systems, and post-accident effluent monitoring instruments.
- Dose calculations for effluent releases. The inspectors reviewed a selection of radioactive liquid and gaseous waste discharge permits and abnormal gaseous or liquid tank discharges, and verified the projected doses were accurate. The inspectors also reviewed 10 CFR Part 61 analyses and methods used to determine which isotopes were included in the source term. The inspectors reviewed land use census results, offsite dose calculation manual changes, and significant changes in reported dose values from previous years.
- Problem identification and resolution for radioactive gaseous and liquid effluent treatment. 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 six required samples of radioactive gaseous and liquid effluent treatment program, as defined in Inspection Procedure 71124.06.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

a. Inspection Scope

The inspectors evaluated whether the licensee's radiological environmental monitoring program quantified the impact of radioactive effluent releases to the environment and sufficiently validated the integrity of the radioactive gaseous and liquid effluent release program. The inspectors also verified that the licensee continued to implement the voluntary Nuclear Energy Institute (NEI)/Industry Ground Water Protection Initiative. The inspectors reviewed or observed the following items:

- The inspectors observed selected air sampling and dosimeter monitoring stations, sampler station modifications, and the collection and preparation of environmental samples. The inspectors reviewed calibration and maintenance records for selected air samplers, composite water samplers, and environmental sample radiation measurement instrumentation, and inter-laboratory comparison program results. The inspectors reviewed selected events documented in the annual environmental monitoring report and significant changes made by the licensee to the offsite dose calculation manual as the result of changes to the land census. The inspectors evaluated the operability, calibration, and maintenance of meteorological instruments and assessed the meteorological dispersion and deposition factors. The inspectors verified the licensee had implemented a sampling and monitoring program sufficient to detect leakage from SSCs with credible mechanism for licensed material to reach ground water and reviewed changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater.
- Groundwater protection initiative implementation, including assessment of groundwater monitoring results, identified leakage or spill events and entries made into 10 CFR 50.75(g) records, licensee evaluations of the extent of the contamination and the radiological source term, and reports of events associated with spills, leaks, and groundwater monitoring results.
- Problem identification and resolution for the radiological environmental monitoring program. 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 three required samples of radiological environmental monitoring program, as defined in Inspection Procedure 71124.07.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

a. Inspection Scope

The inspectors evaluated the effectiveness of the licensee's programs for processing, handling, storage, and transportation of radioactive material. The inspectors interviewed licensee personnel and reviewed the following items:

- Radioactive material storage, including waste storage areas including container labeling/markings and monitoring containers for deformation or signs of waste decomposition.
- Radioactive waste system, including walk-downs of the accessible portions of the radioactive waste processing systems and handling equipment. The inspectors also reviewed or observed changes made to the radioactive waste processing systems, methods for dewatering and waste stabilization, waste stream mixing methodology, and waste processing equipment that was not operational or abandoned in place.
- Waste characterization and classification, including radio-chemical sample analysis results for radioactive waste streams and use of scaling factors and calculations to account for difficult-to-measure radionuclides, and processes for waste classification including use of scaling factors and 10 CFR Part 61 analyses.
- Shipment preparation, including packaging, surveying, labeling, marking, placarding, vehicle checking, driver instructing, and preparation of the disposal manifests.
- Shipping records for Low Specific Activity (LSA) I, II, III; Surface Contaminated Objects (SCO) I, II; Type A; or Type B radioactive material or radioactive waste shipments.
- Problem identification and resolution for radioactive solid waste processing and radioactive material handling, storage, and transportation. 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 six required samples of radioactive solid waste processing, and radioactive material handling, storage, and transportation program, as defined in Inspection Procedure 71124.08.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

4OA1 Performance Indicator Verification (71151)

.1 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 2015 through June 2016 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, 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 2015 through June 2016 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, 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 2015 through June 2016 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, Units 1 and 2, as defined in Inspection Procedure 71151.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152)

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.

40A5 Other Activities

a. Inspection Scope

The inspectors performed a follow-up review of a licensee identified non-cited violation of 10 CFR 50.9, "Completeness and accuracy of information," documented in NRC Inspection Report 05000275/2015002 and 05000323/2015002 (ADAMS Accession Number ML15219A599). This non-cited violation, identified by the licensee, involved the deliberate falsification of fire protection transient combustible walkdown records, required to be performed by the Diablo Canyon Unit 1 and 2 Operating License, Conditions 2.C.(5) and 2.C.(4), respectively.

The inspectors reviewed fire protection records and licensee corrective action documents to ensure an adequate extent of condition evaluation was performed. The inspectors also reviewed transcripts of interviews conducted by the NRC's Office of Investigations.

b. Findings

The inspectors identified an additional example of the previous Severity Level IV non-cited violation of 10 CFR Part 50.9, documented in NRC Inspection Report 05000275/2015002 and 05000323/2015002. Title 10 CFR 50.9 requires, in part, that information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects. Contrary to the above, between May 20 and June 10, 2014, fire protection records, required by License Condition 2.C.(5) for Unit 1 and 2.C.(4)

for Unit 2, "Fire Protection," were not complete and accurate in all material respects. Specifically, the records of inspection of fire barrier and high energy line break (HELB) penetration seals completed using Procedure STP M-70A, "Inspection of Fire Barrier and HELB Penetration Seals," Revision 8, were incomplete and inaccurate. These records were incomplete and inaccurate because a licensee employee falsified completion of fire penetration seal inspections in the cable spreading room on the 128 foot elevation of the Auxiliary Building.

The NRC determined this violation to be an additional example of the previously documented licensee identified, Severity Level IV, non-cited violation in NRC Inspection Report 05000275/2015002 and 05000323/2015002 since the violation occurred during the same time period as the original violation and the same licensee employee was responsible for deliberately falsifying the fire protection records.

The additional example of the violation was entered into the licensee's correction action program as Notification 50865296. As immediate corrective actions, the licensee re-performed fire barrier and HELB penetration seals inspection in accordance with Procedure STP M-70A for seal inspections in the cable spreading room on the 128 foot elevation of the auxiliary building. No deficiencies were noted. (EA-16-104)

40A6 Meetings, Including Exit

Exit Meeting Summary

On August 4, 2016, the inspectors conducted a technical debrief of the triennial inspection Procedure 71111.07, "Heat Sink Performance" inspection to T. Baldwin, Director of Site Services, and other members of the licensee staff.

On August 4, 2016, the inspectors discussed the final licensed operator requalification program annual cycle results via telephone with Mr. R. Fortier, Operations Examination Developer, and on August 8, 2016, formally exited with Mr. Fortier via e-mail.

On August 11, 2016, the inspectors presented the radiation safety inspection results (Sections 2RS5, 2RS6, and 2RS7) to Mr. K. Johnston, Acting Station Director, and other members of the licensee staff.

On September 29, 2016, the inspector presented the radiation safety inspection results (Section 2RS8) to Mr. J. Welsch, Site Vice President, and other members of the licensee staff.

On October 5, 2016, the resident inspectors presented the inspection results to Mr. J. Nimick, Senior Director, Nuclear Services, 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

J. Bailey, Supervisor, Systems Engineering
T. Baldwin, Director, Nuclear Site Services
D. Evans, Director, Security & Emergency Services
R. Fortier, Operations Examination Developer
P. Gerfen, Senior Director Plant Manager
M. Ginn, Manager, Emergency Planning
D. Gonzales, Supervisor, Inservice Inspection
E. Halpin, Sr. Vice President, Chief Nuclear Officer Generation
H. Hamzehee, Manager, Regulatory Services
M. Hayes, Supervisor, Radiation Protection
A. Heffner, NRC Interface, Regulatory Services
J. Hinds, Director, Quality Verification
L. Hopson, Director Maintenance Services
T. Irving, Manager, Radiation Protection
K. Johnston, Director of Operations/ Acting Station Director
J. Loya, Manager, Quality Verification
M. McCoy, NRC Interface, Regulatory Services
C. Miller, Systems Engineering
J. Morris, Senior Advising Engineer
C. Murry, Director Nuclear Work Management
J. Nimick, Senior Director, Nuclear Services
D. Overland, Assistant Director, Maintenance
A. Peck, Director, Nuclear Engineering
R. Rogers, Supervisor, Radiation Protection
A. Warwick, Supervisor, Emergency Planning
J. Welsch, Site Vice President

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CP M-16	Severe Weather	9
OM1.ID4	Interface Requirements for Transmission & Distribution Facilities at DCP	7
CP M-12	Stranded Plant	7
TS5.ID1	System Engineering Program	25
OP O-28	Intake Management	22
CP M-16	Severe Weather	12
MA1.ID23	Review of Intake Preparedness for High Debris Loading Event	3
ENV.EM2	Ocean Jellyfish Influx Monitoring	1

Notifications

50695480	50696009	50872715	50872716	50872806
50699196	50825645	50833485	50514748	

Preventive Maintenance

64164305

Drawing

<u>Number</u>	<u>Title</u>	<u>Revision</u>
502110, Sh. 1	Single Line Diagram 500/230/25/12/4.16 kV Systems	21

Section 1R04: Equipment Alignment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
DCM S-3B	Auxiliary Feedwater System	23
OP-D-1:11	Auxiliary Feedwater System – Alignment Verification For Plant Startup	31
OP-J-6B:II-A	Diesel Generator 1-2 – Alignment Checklist	0

OP D-1:IV	Turbine Driven AFW Restart or make Available After an Overspeed Trip	15
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Notifications

50569346	50833614
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Work Order

64155735

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
107703	Auxiliary Feedwater System	69
106703	OVID Unit 2 Auxiliary Feedwater System	50
108003	Unit 2: Feedwater System	67
106721	OVID Diesel Engine Generator	67

Section 1R05: Fire Protection

Miscellaneous

<u>Number</u>	<u>Description</u>	<u>Revision</u>
Fire Pre-Plans	Diablo Canyon Fire Pre-plans	6
Fire Hazards Analysis	UFSAR: Fire Hazards Analysis	22

Notifications

50863479	50863477	50572486
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Drawings

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
0-AB-73	Fire Plan, Radiological Control Area Elev. 73' Unit 1 & 2	3
106718-10	OVID, Units 1 & 2 Inside Auxiliary Building	181
111906-16	Fire Protection, Auxiliary Building Elev. 73'	8
DC-693299-2	AUX. BLDG EL 73-0 (Isometric)	8
1-AB-85	Radiological Control Area (RCA) & H Block Elev. 85'	12
1-AB-100	Radiological Control Area (RCA) & H Block Elev. 100'	8

FHARE Eval 2013-011	Sprinkler Protected Doors Evaluation; FHARE 159	May 20, 2013
FHARE Eval 2012-008	Fire Rated Assemblies Evaluation; ECG 18.7	April 6, 2012

Section 1R07: Heat Sink Performance

Calculations

<u>Number</u>	<u>Title</u>	<u>Revision</u>
PME-0-21-TI-504	DG Jacket WTR RAD inlet and eng lube oil pmp disch temperature	0
0322-0024-01	EDG Jacket Water Temperature Vs. Load Design Basis Analysis	1
52.18.10	Evaluate ASW Pump Vaults	4-01

Drawings

<u>Number</u>	<u>Title</u>	<u>Revision</u>
468434-1	Ventilation Shaft Modification Intake Structure	3
663032-1	Doors W.T.Q.A.-Sliding Dog Type 26"x66" Medium Steel – 10 Dog 15 PSI Arrangement	B

Letters and Memoranda

<u>Number</u>	<u>Title</u>	<u>Date</u>
ATS 420.DC-16.14	Atmospheric Corrosion Rate of Low Carbon Steel at DCPP	August 9, 2016
DCL-90-027	Service Water System Problems Affecting Safety-Related Equipment	January 26, 1990
DCL-91-286 Supplemental Response to Generic Letter 89-13	Service Water System Problems Affecting Safety-Related Equipment	November 25, 1991
DCL-91-307	Tests and Analysis of Structural Concrete at the Intake Structure	December 19, 1991
PGE-94-691	Component Cooling Water Temperature and Flow Limits for Auxiliary Pumps	December 7, 1994
PGE-96-605	Evaluation of Auxiliary Pumps for Elevated Component Cooling Water Temperatures	September 3, 1996

Miscellaneous

Title

System Health Report for Unit 1 System 14 – Component Cooling Water

System Health Report for Unit 2 System 17B – Auxiliary Saltwater

System Health Report for Unit 1 System 17B – Auxiliary Saltwater

System Health Report for Unit 2 System 14 – Component Cooling Water

Vendor Document

<u>Number</u>	<u>Title</u>	<u>Revision</u>
DC 663216	Pacific Pumps Division –Dresser Industries Inc. Safety Injection Pumps	19

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
AD7.ID2	Daily Notification Review Team (DRT) & Standard Plant Priority Assignment Scheme	25
AP PK02-03	Unit 1 Annunciator Response “SI PPS TEMP/OC Trip”	10
AWP E-016	Inspection Guide – Maintenance Rule & License Renewal Structural Monitoring Programs – Civil	6
CAP A-9	Auxiliary Systems Sampling Schedule	34
MA.ID22	Heat Exchanger Program	2A
MIP C-7.0	Grouting and Repair of Concrete Defects	4
MP M-21-HX.2	Diesel Generator Lube Oil Heat Exchanger	5
OM7.ID1	Problem Identification and Resolution	49
OM7.ID12	Operability Determination	35
OM7.ID13	Technical Evaluation	
OP AP-10	Loss of Auxiliary Salt Water	11
OP F-5:III	Chemistry Control Limits and Action Guidelines for the Plant Support Systems	29
PEP C-17.13	Coatings Surveillance Program for the Saltwater Systems	1
PEP C-17.14	Concrete Surveillance Program for the Saltwater Systems	2
STP M-21-ENG.1	Diesel Engine Generator Inspection (Every Refueling Outage)	22
STP M-21-ENG.6	Diesel Engine Generator Inspection (Every Sixth Refueling Outage)	5

STP M-235C	ASW Piping Inspection at Intake Structure	3
STP M-9A2	Diesel Engine Generator 1-2 Routine Surveillance Test	10
STP P-SIP-11	Routine Surveillance Test of Safety Injection Pump 1-1	14

Notifications

A0184820	50317661	50514572	50514855	50526434
50568724	50575830	50658976	50804871	50865486
50865601	50866092	50866093	50866094	50866095
50866110	50866113	50866114	50866115	50584072
50658975				

Work Orders

64106682	64094121	64104709	64113309	64121524
54121523	60082830	60082831	60082832	60082833

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

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
OP1.DC10	Conduct of Operations	46A
AD7.ID14, Att 4	Risk Management Plan – Energized Hot Wash 500 kV Towers	September 21, 2016
R162S1	Deg Problems and Recovery	0A
OP AP-1	Excessive Reactor Coolant System Leakage	22
EOP F-0	Critical Safety Function Status Trees	20
ECA-0.3	Restore 4 kV Buses	19

Work Orders

64157260	64156902
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Section 1R12: Maintenance Effectiveness

Notifications

50864563	50864695	50867042	50867140	50866092
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50866485 50866484 50514855

Other

<u>Number</u>	<u>Description</u>	<u>Revision</u>
PC-69-01	Scoping Evaluation System 69: 230 kV	17

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-75F	4 kV Vital Bus F Undervoltage Relay Calibration	7
MP E-50.33A	Westinghouse Type SSV-T One Unit Voltage Relay	14
MP E-50.61	Basler Type BE1-27 Medium Inverse Undervoltage Relay Maintenance	8
AD7.ID14	Assessment of Integrated Risk	7
OP J-2:VII	Offsite Power Sources – Deenergizing SUT 1-1 & 2-1 for 230 kV Maintenance	15
OP J-2:VIII	Guidelines for Reliable Transmission Service for DCP	28

Notification

50301167

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
437533	Electrical Single Line Diagram Single Line Meter & Relay Diagram 4160 Volt System	43
437614	Electrical Schematic Diagram Bus Potential & Synchronizing 4160V System	36
437625	Electrical Wiring Diagram 4160V Bus Section “F” Automatic Transfer	32
448575	Electrical Wiring Diagram 4160 Volt Switchgear Bus “F” Cell 13	11
441286	Electrical Logic Diagram 4160 Volt Bus Section “F” Automatic Transfer	11

Work Order

60024242

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
DCM S-21	Diesel Engine System	26
Page IE-21.3b, Volume 9 Data	Diablo Canyon Power Plant Operations Data	July 6, 1994
Page IE-21.3a, Volume 9 Data	Diablo Canyon Power Plant Operations Data	July 6, 2001
Calculation No. 0322-0034-01	Analyses to Support Past Operability Evaluation of DEGs 2- 2 and 2-3 Due to Fuel Header-to-Fuel Inlet Special Cap Screw Failure and Cracking	April 2015
-	DCPP Vendor Technical Manual No. 6011476-322, "Maintenance Manual"	50
OM7.ID12	Operability Determination	34
STP V-3R4	Exercising Main Steam Isolation Bypass Valves	13
STP M-9A2	Diesel Engine Generator 1-2 Routine Surveillance Test	10
	Diablo Canyon Equipment Control Guidelines	
	Diablo Canyon Technical Specifications	
OP1.DC40	Operations Equipment Deficiency Tracking	8

Notifications

50862106	50838199	50042135	50652094	50866134
50866135	50861913	50862262	50867914	50682094
50868945	50394106	50402610	50669034	50701876
50703561	50803453	50821008	50821119	50825559
50847472	50852016	50855158	50871253	

Section 1R18: Plant Modifications

Other

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
LBIE 2010-008	License Basis Impact Evaluation, SI Test Header Project	1
14078101-MR- 101	Technical Report, GL 96-06 Thermal Overpressure Assessment	April 2015

Notifications

50864770 50586903 50586902

Section 1R19: Post-Maintenance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP M-9A1	Diesel Engine Generator 1-1 Routine Surveillance Test	9
DCM S-21	Diesel Engine System	26
STP M-9A2	Diesel Engine Generator 1-2 Routine Surveillance Test	10
STP M-91	Diesel Generator Start and Load Tracking	26A
MP I-3-L115	Steam Generator 1-3 Aux FW Supply Level Control Channel LCV-115 Calibration	22
STP V-2U3D	Exercising SG 1-3 AFW Supply Valves LCV-108 and LCV-115	11
STP V-3P6B	Exercising Valves LCV-115 and 113 Auxiliary Feedwater Pump Discharge	26

Work Orders

64164765 60083123 60088870 60093787 60093902

Notifications

50807526 50869581 50869683 50843432 50870033
50872938 50871986 50871987 50871988 50871994

Drawings

<u>Number</u>	<u>Description</u>	<u>Revision</u>
437579	Schematic Diagram 4 kV Diesel Generator Control No. 11 & 12	43
437580	Schematic Diagram 4 kV Diesel Generator Control No. 11 & 12	39

Section 1R22: Surveillance Testing

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
STP I-38-B.1	SSPS Train B Actuation Logic Testing in Modes 1, 2, 3, or 4	9

STP I-38-B.2	SSPS Train B SI Reset Timer and Slave Relay K602 Test in Modes 1, 2, 3, or 4	12
STP I-36-S4R16	Protection Set IV, Rack 16 Channel Operational Test	22
AD4.ID2	Plant Leakage Evaluation	11
STP R-10C	Reactor Coolant System Water Inventory Balance	46
STP M-16N	Operation of trains A and B Slave Relays K632 and K634	16

Notification

50868682

Work Orders

64140530 64140585

Section 1EP6: Drill Evaluation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
OM10.ID6	Equipment Important to Emergency Response	3
OM10.ID1	Maintaining Emergency Preparedness	14
	Diablo Canyon Power Plant Emergency Planning Scenario Synopsis/Event Description – Ingestion Pathway Drill	September 21, 2016

Notifications

50599999 50599765 50599009

Other

<u>Number</u>	<u>Title</u>	<u>Date</u>
ECTL1601	ERO Drill 8/24/16, DEP Opportunity #1 Scenario	August 24, 2016
ECTL1602	ERO Drill 8/24/16, Training Scenario	August 24, 2016

Section 2RS5: Radiation Monitoring Instrumentation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MP I-RX01	Initial On-Site Calibration of Portable Radiation Detection Instruments	5
RCP D-900	Performance Tests for Radiation Protection Instruments	56
RCP D-970	Radiation Protection Instrument Calibration Schedule	19
RCP D-981	Annual Verification of the J.L Shepherd Model 89 Shielded Calibrator	3
STP I-104B	Calibration of CCW Discharge Headers Radiation Monitors RM-17A and RM-17B	5
STP I-107B	Calibration of Miscellaneous Area Radiation Monitors RM-1, 2, 4, 6, 7, and 10	9
STP I-119B	Calibration of Fuel Handling Building Area Radiation Monitors RM-58 & RM-59	6
STP I-18AA2D	Radiation Source Calibration of RM-48 Area Monitor	6
STP I-39-R30.B	Containment High Range Area Radiation Monitor RM-30/RM-31 Calibration	14
STP I-39-R71.B	Calibration of Main Steam Line Radiation Monitors RM-71, 72, 73, 74	15

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
50857263	Quick Hit Self-Assessment: NRC Pre-Inspection 71124.05 Radiation Monitoring Instrumentation	July 26, 2016
152930028	2016 Radiation Protection Programs Audit Report	February 16, 2016

Notifications

50638952	50639291	50697677	50812696	50817720
50855525	50855527			

Radiation Monitoring System Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
64095074	I39R30.B Cal Hi Range Rad Mon 2-RM-31	April 15, 2016
64140283	I107B Cal Control Room Area Mon 0-RM-1	August 10, 2016
64083662	I107B Cal NSSS Sampling Room Mon 1-RM-6	February 19, 2015

64094552	I119B Cal Spent Fuel Pool Area 2-RM-58	June 6, 2015
64105678	I119B New Fuel Area Mon 1-RM-59	December 28 2015
64061360	I39R71.B Cal Main Steam Rad Mon 1-RM-72	September 14, 2014
64063485	I39R71.B Cal Main Steam Rad Mon 1-RM-73	December 16, 2014

Source Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
RS-001	Annual Verification of Calibration for the J.L. Shepherd Model 89 Irradiator (260 Ci Cs-137)	March 22, 2016
RS-002	Annual Verification of Calibration for the J.L. Shepherd Model 89 Irradiator (400 Ci Cs-137)	March 21, 2016
1789	Eckert & Ziegler – 1.0 Liter Solid in 130G in GA-MA Beaker (SN 85609-34)	October 1, 2011

Portable Radiation Instrument Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
RP 01.14.029	Ludlum Model 177	March 9, 2016
RP 03.07.039	Thermo 6112B (Teletector)	May 15, 2016
RP 03.12.017	Eberline R-02A	March 22, 2016
RP 03.14.008	Eberline ASP-1	March 29, 2016
RP 03.22.002	MGP AMP-100	October 5, 2015
RP 04.38.001	Thermo AMS-4	May 15, 2016
RP 06.13.001	Ludlum Model 3030	August 21, 2015

Stationary Radiation Instrument Calibration Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
66554	Tennelec Series 5XLB Alpha/Beta Counter	September 1, 2015
97-2391	FastScan Whole Body Counter Calibration: 85' Elevation	June 17, 2015
97-5119	FastScan Whole Body Counter Calibration: Dosimetry	June 16, 2015
RP 05.12.05	ARGOS-5AB Personnel Contamination Monitor	March 31, 2016
RP 05.13.07	GEM-5 Portal Monitor	March 31, 2016
RP 06.25.03	SAM12 Small Article Monitor	June 28, 2016

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
2016	System Health Report: Unit 1 – 1st Quarter	April 26, 2016
2016	System Health Report: Unit 2 – 1st Quarter	April 26, 2016
50381	Radiation Survey – Instrument Calibration Facility	August 8, 2016

Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CAP A-6A	Gaseous Radwaste Release Permit Generation Using REMS	2
CAP A-6B	Gaseous Radwaste Postrelease Summary Update Using REMS	0
CAP A-8	Off-Site Dose Calculations	37
CAP E-2:VI	Sampling Primary Chemistry Lab Fume Hood Exhaust	0
CAP E-5:1	Liquid Radwaste and Miscellaneous Discharge Sampling	8
CAP E-6:III	Secondary Sampling at 85' Auxiliary Building	1 / 2
CAP Q-6	Radiochemical Cross-Check Program	3
CY2.ID1	Radioactive Effluent Controls Program	13
CY2	Radiological Monitoring and Controls Program	7A
CY2.DC1	Radiological Monitoring System High Alarm Set-Point Control Program	3
RP1.ID11	Environmental Radiological Monitoring Procedure	13

Notifications

50816085	50639308	50834457	50659099	50637665
50636984	50640298	50652642	50688029	50652357
50624472	50641774	50636956	50654567	50655919

Radiation Monitor Calibrations

<u>Instrument Number</u>	<u>Description</u>	<u>Date</u>
0-RM-18	Liquid Radioactive Waste Discharge	March 2015
1-RM-14	Unit 1 Plant Vent Noble Gas Monitor	March 2016

1-RM-14R	Unit 1 Plant Vent Noble Gas Monitor – Redundant	March 2016
2-RM-14	Unit 2 Plant Vent Noble Gas Monitor	March 2016
2-RM-14R	Unit 2 Plant Vent Noble Gas Monitor – Redundant	March 2016
1-RM-24	Unit 1 Plant Vent Iodine Monitor	April 2015
1-RM-28	Unit 1 Plant Vent Particulate Monitor	April 2015
2-RM-87	Unit 2 Plant Vent High Range Noble Gas Monitor	July 2016

Release Permits

<u>Number</u>	<u>Title</u>	<u>Date</u>
2016-1-26	Containment	July 11, 2016
2016-1-27	Containment	July 11, 2016
2016-0-68	Liquid Radwaste	July 21, 2016

Ventilation System Filter Testing Records

<u>Number</u>	<u>Title</u>	<u>Date</u>
U1-STP M-3A	Unit 1, Auxiliary Building Ventilation System	October 2015
U1-STP M-41	Unit 1, Fuel Handling Building	January 2015
U1-STP M-53	Unit 1, Control Room Ventilation System	April 2015
U2-STP M-3A	Unit 2, Auxiliary Building Ventilation System	April 2016
U2-STP M-41	Unit 2, Fuel Handling Building Ventilation	July 2015
U2-STP M-53	Unit 2, Control Room Ventilation System	April 2015
PEP M-96	Technical Support Center (TSC) Ventilation System – DOP and Halide penetration Tests	October 2015

Miscellaneous

<u>Number</u>	<u>Title</u>	<u>Date</u>
2014	Annual Radioactive Effluent Release Report	April 29, 2015
2015	Annual Radioactive Effluent Release Report	April 27, 2016
50857264	Pre-Inspection QHSA of DCPP Chemistry Functions in NRC Procedure 71124, Attachments 05, 06, and 07 Focus Areas	July 20, 2016
50839230	Pre-Inspection QHSA of NRC Performance Indicator PR01 – RETS/ODCM Occurrences	April 8, 2016
N/A	Effluent Radiation Monitors Inoperable for >7 Days	August 2016
N/A	Maintenance Rule System 39 Radiation Monitors	August 2016

Section 2RS7: Radiological Environmental Monitoring Program

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
CY2	Radiological Monitoring and Controls Program	7A
CY2.ID1	Radioactive Effluent Controls Program	13
RP1.ID11	Environmental Radiological Monitoring Procedure	13
CAP A-8	Offsite Dose Calculations	37
RCP EM-1	Radiological Environmental Biological Sampling	12A
RCP EM-2	Radiological Environmental Air Sampling	14
RCP EM-3	Use of Panasonic Environmental Thermoluminescent Dosimeters	8
RCP EM-4	Area TLD Monitoring	4
RCP EM-5	DCPP Groundwater Sampling	5
RCP EM-21	GPI Well Maintenance Plan	0
RP1.ID13	DCPP Ground Water Protection Initiative Program	3
TS5.ID3	Buried Pipe and Tanks Program	5
RCP D-540	Humboldt Bay ISFSI – Radiation Protection Surveys	0
GL-QS-B-001	Gel Laboratories Quality Assurance Plan	30

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
152930028	2016 Radiation Protection Programs Audit	February 8, 2016
100555-0	National Institute of Standards and Technology	November 2, 2015
JQA-14-097	NUPIC Audit/Survey of GEL Laboratories, LLC	May 29, 2014
24255	NUPIC Audit/Survey of MIRION Technologies INC.	April 22, 2016

Notifications

50852035	50849290	50837902	50828842	50828646
50600291	50598509	50584618	50582121	50581368
50826745	50826744	50804416	50798548	50711226
50710898	50710007	50707798	50706355	50705207
50704588	50702149	50702148	50702016	50702013

50694988	50691605	50691328	50686075	50654567
50638090	50814106	50695725	50694538	50488860

Annual Reports

<u>Title</u>	<u>Date</u>
XOQDOQ Analysis for Calendar Year 2015 Based on the 2011-2015 Joint Frequency Distribution of Wind and Stability	March 30, 2016
2014 Annual Radiological Environmental Operating Report Diablo Canyon Power Plant	April 16, 2015
2015 Annual Radiological Environmental Operating Report Diablo Canyon Power Plant	April 4, 2016
2015 DCPD Land Use Census	

Groundwater Protection Documents

<u>Number</u>	<u>Title</u>	<u>Date</u>
	Effectiveness Review of Groundwater Protection Initiative formal self-assessment	November 17, 2014
0229627	Diablo Canyon Power Plant Site Conceptual Model Report	July 30, 2014

Meteorological Tower Calibrations

<u>Order</u>	<u>Title</u>	<u>Date</u>
64126761	Backup Met Facility Equipment Calibration	May 28, 2015
64131311	Backup Met Facility Equipment Calibration	January 14, 2016
64140949	Cal Primary Met Instrumentation Channel (PME)	February 9, 2016
64131071	Cal Primary Met Instrumentation Channel (PME)	August 21, 2015

Section 2RS8: Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation

Procedures

<u>Number</u>	<u>Title</u>	<u>Revision</u>
RCP D-631	Radioactive Material Shipments	11
RCP RW-3	Radioactive Waste Nuclide Fractions and Correlation Factors Determination	19
RCP RW-4	Solid Radioactive Waste Shipments	31
RCP RW-5	Receiving, Loading, and Releasing of Transport Vehicle for Radioactive Waste Shipment	15

CY2.ID1	Radioactive Effluent Controls Program	13
RP2.DC1	Radioactive Waste Classification Program	6
RP2.DC3	Radioactive Waste Process Control Program	9
RCP.RW-1	Collection & Packaging of LLRW	15

Audits and Self-Assessments

<u>Number</u>	<u>Title</u>	<u>Date</u>
50857266	Quick Hit Self-Assessment: NRC Pre-Inspection 71124.08 Radiation Monitoring Instrumentation	July 26, 2016
152930028	2016 Radiation Protection Programs Audit Report	February 16, 2016

Notifications

50484885	50639291	50803788	50873232
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Radioactive Material Shipments

<u>Number</u>	<u>Title</u>	<u>Date</u>
RMS-14-112A	Dry Active Waste Solid Material Filter Media	October 9, 2014
RMS-14-112B	Dry Active Waste Solid Material Filter Media	November 19, 2014
RMS-14-101	Dry Active Waste Solid for Processing & Disposal	October 9, 2014
RWS-15-003	Solidified Spent Metal Oxide-Resin for Disposal	April 01, 2015
RWS-15-002	Solidified Spent Metal Oxide-Resin for Disposal	March 25, 2015
RWS-15-001	Dewatered Spent Resin	February 24, 2015
RWS-14-003	Solidified Spent Filters in Cement for Disposal	December 3, 2014
RWS-14-002	Solidified Spent Filters in Cement for Disposal	July 24, 2014
RWS-14-001	Solidified Spent Filters in Cement for Disposal	July 16, 2014
RMS-15-106	Dry Active Waste Solid for Processing & Disposal	November 5, 2015
RMS-15-068	Dewatered Spent Resin for Processing & Disposal	July 16, 2015
RMS-15-029	Relief Valves 8010 for Rework	May 29, 2015

Miscellaneous Documents

<u>Number</u>	<u>Title</u>	<u>Revision / Date</u>
2014	Annual Radioactive Effluent Release Report	April 29, 2015
2015	Annual Radioactive Effluent Release Report	April 27, 2016
	Updated Safety Analysis Report – Chapter 11: Radioactive Waste Management	22
	Updated Safety Analysis Report – Chapter 12: Radiation Protection	22

Section 40A1: Performance Indicator Verification

Procedure

<u>Number</u>	<u>Title</u>	<u>Revision</u>
MA1.ID17	Maintenance Rule Monitoring Program	31

Notifications

50043028	50664473	50397381	50658301
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Other Document

<u>Number</u>	<u>Title</u>	<u>Date</u>
Diablo Canyon Consolidated Data Entry 4.0	MSPI Deviation Report Unit 1 and 2	July 2016

**The following items are requested for the
Occupational/Public Radiation Safety Inspection
at Diablo Canyon**

DATES:

**I/P 71124.05 - August 8-12, 2016
I/P 71124.06 – August 8-12, 2016
I/P 71124.07 – August 8-12, 2016
I/P 71124.08 - September 12-16, 2016**

Integrated Report 2016003

Inspection areas are listed in the attachments below.

Please provide the requested information on or before **July 19, 2016**.

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 Martin J. Phalen at (817) 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.

5. Radiation Monitoring Instrumentation (71124.05)

Date of Last Inspection: **July 7, 2014**

- A. List of contacts and telephone numbers for the following areas:
1. Effluent monitor calibration
 2. Radiation protection instrument calibration
 3. Installed instrument calibrations
 4. Count room and Laboratory instrument calibrations
- B. Applicable organization charts
- C. Copies of audits, self-assessments, vendor or NUPIC audits for contractor support and LERs, written since date of last inspection, related to:
1. Area radiation monitors, continuous air monitors, criticality monitors, portable survey instruments, electronic dosimeters, teledosimetry, personnel contamination monitors, or whole body counters
 2. Installed radiation monitors
- D. Procedure index for:
1. Calibration, use and operation of continuous air monitors, criticality monitors, portable survey instruments, temporary area radiation monitors, electronic dosimeters, teledosimetry, personnel contamination monitors, and whole body counters.
 2. Calibration of installed radiation monitors
- 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. Calibration of portable radiation detection instruments (for portable ion chambers)
 2. Whole body counter calibration
 3. Laboratory instrumentation quality control
- F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, related to the following programs:
1. Area radiation monitors, continuous air monitors, criticality monitors, portable survey instruments, electronic dosimeters, teledosimetry, personnel contamination monitors, whole body counters,
 2. Installed radiation monitors,
 3. Effluent radiation monitors
 4. Count room radiation instruments
- 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. Offsite dose calculation manual, technical requirements manual, or licensee controlled specifications which lists the effluent monitors and calibration requirements.
- H. Current calibration data for the whole body counter's.

- I. Primary to secondary source calibration correlation for effluent monitors.
- J. A list of the point of discharge effluent monitors with the two most recent calibration dates and the work order numbers associated with the calibrations.
- K. Radiation Monitoring System health report for the previous 12 months.

6. Radioactive Gaseous And Liquid Effluent Treatment (71124.06)

Date of Last Inspection: **July 7, 2014**

- A. List of contacts and telephone numbers for the following areas:
 - 1. Radiological effluent control
 - 2. Engineered safety feature air cleaning systems
- 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. Radioactive effluents
 - 2. Engineered Safety Feature Air cleaning systems
- D. Procedure indexes for the following areas
 - 1. Radioactive effluents
 - 2. Engineered Safety Feature Air cleaning systems
- 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. Sampling of radioactive effluents
 - 2. Sample analysis
 - 3. Generating radioactive effluent release permits
 - 4. Laboratory instrumentation quality control
 - 5. In-place testing of HEPA filters and charcoal adsorbers
 - 6. New or applicable procedures for effluent programs (e.g., including ground water monitoring programs)
- F. List of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, associated with:
 - 1. Radioactive effluents
 - 2. Effluent radiation monitors
 - 3. Engineered Safety Feature Air cleaning systems

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. 2014 and 2015 Annual Radioactive Effluent Release Report, or the two most recent reports.
- H. Current Copy of the Offsite Dose Calculation Manual.
- I. Copy of the 2014 and 2015 inter-laboratory comparison results for laboratory quality control performance of effluent sample analysis, or the two most recent results.

- J. Effluent sampling schedule for the week of the inspection.
- K. New entries into 10 CFR 50.75(g) files since date of last inspection.
- L. Operations department (or other responsible dept.) log records for effluent monitors removed from service or out of service.
- M. Listing or log of liquid and gaseous release permits since date of last inspection
- N. A list of the technical specification-required air cleaning systems with the two most recent surveillance test dates of in-place filter testing (of HEPA filters and charcoal adsorbers) and laboratory testing (of charcoal efficiency) and the work order numbers associated with the surveillances.
- O. System Health Report for radiation monitoring instrumentation. Also, please provide a specific list of all effluent radiation monitors that were considered inoperable for 7 days or more since November 2011. If applicable, please provide the relative Special Report and condition report(s).
- P. A list of all radiation monitors that are considered §50.65/Maintenance Rule equipment.
- Q. A list of all significant changes made to the Gaseous and Liquid Effluent Process Monitoring System since the last inspection. If applicable, please provide the corresponding UFSAR section in which this change was documented.
- R. A list of any occurrences in which a non-radioactive system was contaminated by a radioactive system. Please include any relative condition report(s).

7. Radiological Environmental Monitoring Program (71124.07)

Date of Last Inspection: **July 7, 2014**

- A. List of contacts and telephone numbers for the following areas:
 - 1. Radiological environmental monitoring
 - 2. Meteorological monitoring
- 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. Radiological environmental monitoring program (including contractor environmental laboratory audits, if used to perform environmental program functions)
 - 2. Environmental TLD processing facility
 - 3. Meteorological monitoring program
- D. Procedure index for the following areas:
 - 1. Radiological environmental monitoring program
 - 2. Meteorological monitoring program
- 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. Environmental Program Description
 - 2. Sampling, collection and preparation of environmental samples
 - 3. Sample analysis (if applicable)
 - 4. Laboratory instrumentation quality control

5. Procedures associated with the Offsite Dose Calculation Manual
 6. Appropriate QA Audit and program procedures, and/or sections of the station's QA manual (which pertain to the REMP)
- F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection, related to the following programs:
1. Radiological environmental monitoring
 2. Meteorological monitoring
- 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. Wind Rose data and evaluations used for establishing environmental sampling locations
- H. Copies of the 2 most recent calibration packages for the meteorological tower instruments.
- I. Copy of the 2014 and 2015 Annual Radiological Environmental Operating Report and Land Use Census, and current revision of the Offsite Dose Calculation Manual, or the two most recent reports.
- J. Copy of the environmental laboratory's inter-laboratory comparison program results for 2014 and 2015, or the two most recent results, if not included in the annual radiological environmental operating report.
- K. Data from the environmental laboratory documenting the analytical detection sensitivities for the various environmental sample media (i.e., air, water, soil, vegetation, and milk).
- L. Quality Assurance audits (e.g., NUPIC) for contracted services.
- M. Current NEI Groundwater Initiative Plan and status.
- N. Technical requirements manual or licensee controlled specifications which lists the meteorological instruments calibration requirements.
- O. A list of Regulatory Guides and/or NUREGs that you are currently committed to relative to the Radiological Environmental Monitoring Program. Please include the revision and/or date for the committed item and where this can be located in your current licensing basis/UFSAR.
- P. If applicable, per NEI 07-07, provide any reports that document any spills/leaks to groundwater since the last inspection.
- 8. Radioactive Solid Waste Processing, and Radioactive Material Handling, Storage, and Transportation (71124.08)**
Date of Last Inspection: **July 7, 2014**
- A. List of contacts and telephone numbers for the following areas:
1. Solid Radioactive waste processing
 2. Transportation of radioactive material/waste
- B. Applicable organization charts (and list of personnel involved in solid radwaste processing, transferring, and transportation of radioactive waste/materials)
- C. Copies of audits, department self-assessments, and LERs written since date of last inspection related to:

1. Solid radioactive waste management
 2. Radioactive material/waste transportation program
- D. Procedure index for the following areas:
1. Solid radioactive waste management
 2. Radioactive material/waste transportation
- 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. Process control program
 2. Solid and liquid radioactive waste processing
 3. Radioactive material/waste shipping
 4. Methodology used for waste concentration averaging, if applicable
 5. Waste stream sampling and analysis
- F. A summary list of corrective action documents (including corporate and sub-tiered systems) written since date of last inspection related to:
1. Solid radioactive waste
 2. Transportation of radioactive material/waste

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. Copies of training lesson plans for 49CFR172 subpart H, for radwaste processing, packaging, and shipping.
- H. A summary of radioactive material and radioactive waste shipments made from date of last inspection to present.
- I. Waste stream sample analyses results and resulting scaling factors for 2014 and 2015, or the two most recent results.
- J. Waste classification reports if performed by vendors (such as for irradiated hardware).
- K. A listing of all onsite radwaste storage facilities. Please include a summary or listing of the items stored in each facility, including the *total* amount of radioactivity and the *highest* general area dose rate.

Although it is not necessary to compile the following information, the inspector will also review:

- L. Training, and qualifications records of personnel responsible for the conduct of radioactive waste processing, package preparation, and shipping.