UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

May 21, 2019

James M. Welsch
Vice President, Nuclear Generation
And Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 56
Mail Code 104/6
Avila Beach, CA 93424

SUBJECT: HUMBOLDT BAY POWER PLANT, NRC INSPECTION REPORT 050-00133/2019-001

Dear Mr. Welsch:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on April 23-25, 2019, at your Humboldt Bay Power Plant, Unit 3 facility, near Eureka, California. The purpose of the inspection was to determine whether decommissioning activities were being conducted safely and in conformance with NRC requirements and the conditions of your license. The NRC inspectors discussed the results of the inspection with Bill Barley, Site Closure Manager, and other members of your staff at the conclusion of the onsite inspection on April 25, 2019. The enclosed report presents the results of this inspection.

The inspection examined activities conducted under your license as they relate to public health and safety, and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. The violation involves your failure to conduct response checks of all field instrumentation as required by the NRC-approved License Termination Plan. Because your staff identified the finding and entered it into your corrective action program, this violation is being treated as a non-cited violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. 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 Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region IV; and (2) the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made

available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS) accessible from the NRC Web Site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, if you choose to provide one, should not include any personal privacy or proprietary information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact Dr. Robert Evans at 817-200-1234, or the undersigned at 817-200-1156.

Sincerely,

/RA/

Heather J. Gepford, PhD, CHP, Chief
Materials Licensing and Decommissioning Branch
Division of Nuclear Materials Safety

Docket No. 050-00133
License No. DPR-7

Enclosure:
Inspection Report 050-00133/2019-001

cc w/enclosure:
B. Barley, Pacific Gas and Electric
H. Hamzehee, Pacific Gas and Electric
J. Post, Pacific Gas and Electric
J. Salman, Pacific Gas and Electric
P. Soenen, Pacific Gas and Electric
G. Perez, California Dept. of Health Services
R. Weisenmiller, California Energy Commission
Chairman, Humboldt County Board of Supervisors

U.S. NUCLEAR REGULATORY COMMISSION
Region IV

Docket No.	050-00133
License No.	DPR-7
Report:	050-00133/2019-001
Licensee:	Pacific Gas and Electric Co.
Facility:	Humboldt Bay Power Plant, Unit 3
Location:	1000 King Salmon Ave. Eureka, California 95503
Dates:	April 23-25, 2019
Inspectors:	Robert J. Evans, PhD, PE, CHP, Senior Health Physicist Materials Licensing and Decommissioning Branch Division of Nuclear Materials Safety Martha R. Poston, Health Physicist Materials Licensing and Decommissioning Branch Division of Nuclear Materials Safety
Approved by:	Heather J. Gepford, PhD, CHP, Chief Materials Licensing and Decommissioning Branch Division of Nuclear Materials Safety
Attachment:	Supplemental Inspection Information

Enclosure

EXECUTIVE SUMMARY

Humboldt Bay Power Plant, Unit 3
NRC Inspection Report 050-00133/2019-001

This U.S. Nuclear Regulatory Commission (NRC) inspection was a routine, announced inspection of decommissioning activities being conducted at the Humboldt Bay Power Plant, Unit 3 facility. In summary, the licensee was conducting decommissioning in accordance with site procedures, license requirements, and applicable NRC regulations, with one exception as described below.

Decommissioning Performance and Status Review at Permanently Shutdown Reactors

- The licensee conducted work in accordance with the general instructions provided in the Post-Shutdown Decommissioning Activities Report. The licensee staffed all positions as specified in the decommissioning quality assurance plan. The licensee continued to implement a cross-contamination prevention and survey program as required by the license and site procedures. The licensee implemented a fire protection program as required by the license and site procedures. (Section 1.2)

Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors

- The licensee implemented the corrective action program as required by the quality assurance plan. The licensee identified potential weaknesses and entered those findings into its corrective action program. Audits required by the quality assurance plan were conducted at the required frequency. (Section 2.2)

Occupational Radiation Exposure

- The licensee controlled occupational exposures in accordance with regulatory requirements. Surveys were conducted as needed using calibrated instruments in accordance with standard health physics practices. The discontinuation of routine air sampling and ambient gamma radiation surveys was supported by data collected by the licensee. (Section 3.2)

Solid Radioactive Waste Management and Transportation of Radioactive Materials

- The licensee packaged and shipped radioactive and exempt-quantity hazardous wastes in accordance with procedural and regulatory requirements. (Section 4.2)

Radioactive Waste Treatment, and Effluent and Environmental Monitoring

- The licensee implemented the effluent and environmental monitoring programs as required by the license. The licensee concluded that site decommissioning activities had a negligible impact on the environment and members of the public in 2018. (Section 5.2)

Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors

- The licensee was conducting final status surveys in accordance with the License Termination Plan and procedural requirements, with one exception. The licensee's failure to conduct daily response checks of all field instrumentation was identified as a non-cited

violation of the license. The inspectors conducted a confirmatory survey of portions of the former discharge canal area. No elevated measurements were identified, suggesting that the area had been effectively remediated by the licensee. (Section 6.2)

Report Details

Site Status

In July 1976, the Humboldt Bay Power Plant, Unit 3 facility was shut down for annual refueling and seismic modifications. In June 1983, Pacific Gas & Electric Company (the licensee) announced its intention to decommission the Unit 3 facility. In July 1985, the NRC issued Amendment No. 19 to change the status of the Unit 3 license to possess-but-not-operate. At that time, the plant was placed into SAFSTOR. The licensee completed the transfer of spent fuel from the spent fuel pool to the onsite independent spent fuel storage installation (ISFSI) by December 2008, and decommissioning of the Unit 3 facility commenced at that time.

At the time of the onsite inspection, the decommissioning activities in progress included onsite management of contaminated soils, packaging and transportation of contaminated and non-contaminated soils and other waste material, and final status surveying of land areas that had been remediated. Other work in progress included construction of roads, fences, and parking lots that will remain at the site after decommissioning has been completed. The licensee was also contouring and reseeding the site for drainage reasons. All structures planned to be demolished had been demolished, and all remaining structures will be repurposed at the end of the decommissioning project. The licensee plans to complete all field work by August 2019.

1 Decommissioning Performance and Status Review at Permanently Shutdown Reactors (71801)

1.1 Inspection Scope

The inspectors evaluated whether the licensee was conducting decommissioning activities in accordance with procedural, license, and regulatory requirements. The inspectors reviewed the status of decommissioning; licensee control and conduct of facility activities and operations; housekeeping; and fire protection. Plant tours were conducted to observe decommissioning activities in progress.

1.2 Observations and Findings

The Post-Shutdown Decommissioning Activities Report (PSDAR) provides a general description of the planned decommissioning activities (Agencywide Documents Access and Management System [ADAMS] Accession No. ML13213A160). The inspectors conducted site tours to observe work in progress. The observed work included excavation and contouring of soil, surveys of soil for reuse, and packaging of shipments for offsite disposal. Soil was being excavated, screened for radioactive and non-radioactive hazards, and staged for disposal or reuse as appropriate. The inspectors observed how the licensee was radiologically surveying soils for reuse at the site. The inspectors determined that the licensee was conducting work as generally described in the PSDAR.

As discussed in Section 3.0 of the PSDAR, the licensee developed a critical path method to reflect long-range planning and coordination for the project. The inspectors reviewed and discussed the current critical path report with licensee representatives. The critical path consisted primarily of outdoor construction projects such as parking lot and road construction. Many of these construction projects were needed to support the ISFSI and Humboldt Bay power plant, located adjacent to the decommissioning site.

Site staffing requirements were described in the Humboldt Bay Quality Assurance Plan (HBQAP), Revision 38, dated March 29, 2019. Figure 2 of the HBQAP provided the decommissioning organization chart. All positions shown on the organization chart were filled at the time of the inspection.

The inspectors questioned whether the Independent Management Review, an oversight program described in the HBQAP, was applicable to the decommissioning program. The HBQAP provided conflicting information about whether this independent group was responsible for providing oversight of decommissioning activities. Licensee representatives indicated that the Independent Management Review functions involved ISFSI operations, not decommissioning activities. The representatives indicated that the HBQAP would be revised to split the two activities (ISFSI and decommissioning) into two quality assurance plans, and the revised decommissioning quality assurance plan would not include a requirement for a management oversight review. The licensee is allowed by regulations to make changes to the HBQAP, without prior NRC approval, provided the changes do not reduce previous commitments made to the NRC.

License Condition 2.C.4 states that the licensee shall maintain a cross-contamination prevention and monitoring plan, to demonstrate compliance with the NRC's License Termination Rule (Title 10 to the *Code of Federal Regulations* [10 CFR] Part 20, Subpart E). The original license condition applied to the new Humboldt Bay power plant that was constructed adjacent to the decommissioning project. Since the condition was added to the license in 2007, the licensee continued to use the cross-contamination prevention and monitoring plan for different areas of the site that had been final surveyed and segregated from the potentially contaminated areas that had not been final surveyed.

The inspectors reviewed the licensee's control of areas under the cross-contamination prevention plan. At the time of the inspection, most of the site had been final surveyed and was being controlled under the licensee's cross-contamination prevention plan. The licensee used barrier ropes, signs, and administrative controls to limit movement of potentially contaminated material into these controlled areas.

The inspectors also reviewed the licensee's implementation of its cross-contamination monitoring plan. The licensee implemented procedure RCP FSS-13, "Area Surveillance Following Final Status Survey," Revision 3, dated May 2, 2017, to specify the periodic radiological monitoring requirements for areas that had been final status surveyed and segregated from the rest of the plant. The licensee also developed a matrix to specify the frequencies for conducting resurveys of areas, to verify that the areas had not been contaminated by site decommissioning activities. The licensee maintained a list of surveys completed, to demonstrate compliance with procedural requirements for periodic surveys. The last periodic survey of the Humboldt Bay Generating Station, the location specifically mentioned in the license, was conducted in March 2019. No evidence of cross contamination was identified.

Finally, the inspectors reviewed the status of the licensee's fire protection program. Section 5.5.1 of technical specifications, an appendix to the license, states that written procedures shall be established, implemented, and maintained covering activities including fire protection program implementation. Details about the fire protection program were provided in procedure HBAP A-13, "Fire Prevention Program," Revision 29 dated May 5, 2017. The procedure provided the administrative controls,

organization, and training necessary to implement the fire prevention program. The fire marshal, a member of the site staff, was responsible for implementing the fire prevention program.

At the time of the inspection, there were no remaining important to safety structures, systems, or components. In addition, there were no credited fire barriers or fire zones at the decommissioning site. The licensee no longer maintained a fire brigade at the site, and non-incipient stage firefighting was provided by the local municipal fire department. The existing fire loads included electrical, paper, trash, and chemicals sources. The strategy for fires included searching for victims and de-energizing any electrical sources. Two of the three remaining structures had sprinklers. For the rest of the site, dry chemical fire extinguishers were available for incipient stage fires. Two fire hydrants were available for onsite use, as needed.

The licensee managed hot work permits under the fire prevention program. In 2019, eight hot work permits were issued for work that involved sparks or open flames. The hot work permits contained the precautions and fire watch requirements. In addition to control of hot work permits, the fire prevention program included requirements for periodic review of fire protection features such as flow tests and fire extinguisher checks.

Fire prevention training included performance of periodic drills and qualification of fire watches. A fire drill was conducted in October 2018 that involved a mock fire and injured person. The local fire department participated in the drill, as well as ISFSI staff and the local ambulance service. The fire watch training requirements were established in a site implementing procedure that was not reviewed during the inspection. The licensee maintained a list of workers qualified to fill the position of fire watch.

The fire prevention program procedure requires periodic fire hazard analysis and fire protection program reviews. The last review was conducted in 2015. Although the procedure does not specify a frequency for these reviews, the inspectors discussed the advantages of timely fire protection program reviews with licensee staff.

1.3 Conclusions

The licensee conducted work in accordance with the general instructions provided in the PSDAR. The licensee staffed all positions as specified in the decommissioning quality assurance plan. The licensee continued to implement a cross-contamination prevention and survey program as required by the license and site procedures. The licensee implemented a fire protection program as required by the license and site procedures.

2 Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors (40801)

2.1 Inspection Scope

The inspectors evaluated the effectiveness of licensee controls to identify, resolve, and prevent problems that may degrade safety and the quality of decommissioning. Specifically, the inspectors reviewed the licensee's implementation of its corrective action and quality assurance audit programs.

2.2 Observations and Findings

The licensee was in the final stages of decommissioning and no important to safety systems or components remained onsite. However, several program areas continued to be controlled by the quality assurance program. These program areas included the radiation protection, final status survey, recordkeeping, and corrective action program.

The requirements for the corrective action program and quality assurance audits were provided in the HBQAP. The most recent HBQAP was submitted to the NRC by letter dated February 23, 2018 (ADAMS Accession No. ML18066A137). The inspectors reviewed that HBQAP and a revised quality assurance plan (Revision 38, dated April 2, 2019) which had not been submitted to the NRC. In both revisions of the HBQAP, Section 16 discussed the corrective action program and Section 18 discussed the audit program. Details about the programs were provided in implementing procedures. The inspectors concluded that the licensee implemented its corrective action and quality assurance audit programs in accordance with the two revisions of the HBQAP and associated implementing procedures.

Since the previous inspection, the licensee conducted the following audits: (1) a radiation protection program audit that included the offsite dose calculation manual and radiological environmental monitoring program, completed October 19, 2018; and (2) a radiation protection program assessment, completed December 15, 2019. Both audits were reviewed during the inspection. No items of concern were identified as part of the audit review. The audits met HBQAP requirements.

The inspectors reviewed portions of the licensee's corrective action program including a random sampling of SAP Notifications (SAPNs). (SAP is the name of the commercial software used by the corrective action program.) Since the previous inspection, the licensee opened 62 SAPNs. Of those, 28 SAPNs had been closed and 34 remained open. The inspectors reviewed a sample of both opened and closed SAPNs. The inspectors found that although the documentation for the closed SAPNs was not always present in the closure record, the licensee was able to provide all the needed documents to support the closures of the SAPNs. For the SAPNs reviewed, the inspectors found that the documentation of the corrective actions in progress or completed was comprehensive and of sufficient detail to support the completion of assigned actions within the SAPN. The inspectors determined that the corrective action program was implemented in accordance with the HBQAP.

2.3 Conclusions

The licensee implemented the corrective action program as required by the quality assurance plan. The licensee identified potential weaknesses and entered those findings into its corrective action program. Audits required by the quality assurance plan were conducted at the required frequency.

3 Occupational Radiation Exposure (83750)

3.1 Inspection Scope

The inspectors reviewed the licensee's occupational radiation exposure program for compliance with regulatory requirements. The review included control of external exposures, internal exposures, and contamination.

3.2 Observations and Findings

In 2015, the licensee conducted a study to determine if occupational monitoring was required to comply with regulatory requirements. The study concluded that since decommissioning efforts had removed most of the radioactive material from the site, occupational monitoring was not required. The licensee continued to conduct radiological surveys and contamination monitoring, in part, to confirm that occupational monitoring was not required. By letter dated, March 7, 2019 (ADAMS Accession No. ML19066A360), the licensee notified the NRC that individual monitoring was not required, and that no workers were assigned an occupational exposure for 2018.

The licensee continued to conduct surveys and sampling to verify that occupational monitoring was not required until the 3rd quarter of 2018. The monitoring conducted in the first three quarters of 2018 supported the assumptions made in the dose assessment discussed above. At the end of the 3rd quarter of 2018, the licensee discontinued routine air sampling and ambient gamma radiation surveys. The licensee concluded that these activities were no longer necessary as the site continued to transition into the final site restoration phase of decommissioning.

The licensee continued to conduct contamination surveys of equipment, staff, and building surfaces. The inspectors reviewed a selected sample of these contamination surveys and concluded that the records indicated that no contamination control issues were present at the site. The inspectors also spot checked the radiation survey equipment in use and concluded that the records indicated that survey meters were in calibration and were being source checked daily.

3.3 Conclusions

The licensee controlled occupational exposures in accordance with regulatory requirements. Surveys were conducted as needed using calibrated instruments in accordance with standard health physics practices. The discontinuation of routine air sampling and ambient gamma radiation surveys was supported by data collected by the licensee.

4 Solid Radioactive Waste Management and Transportation of Radioactive Materials (86750)

4.1 Inspection Scope

The evaluated whether the licensee properly processed, packaged, stored, and shipped radioactive material in accordance with procedural and regulatory requirements.

4.2 Observations and Findings

The inspectors reviewed procedures and records to determine whether the licensee was loading and shipping radioactive material in accordance with regulatory requirements. The inspectors also interviewed the individuals who implemented the shipping program. The inspectors concluded that the licensee was implementing the transportation program in accordance with regulatory and procedural requirements.

The licensee conducted three basic types of shipments - radioactive, non-radioactive but hazardous, and non-hazardous shipments. The inspectors reviewed a representative record of each type of shipment. The inspectors compared the completed shipment records to the requirements specified in the respective procedures. In general, the completed packages included verification of the waste profile, shipping paper, driver instructions, package and vehicle surveys, and verification of receipt of shipments at the respective disposal sites. The shipment records were thorough and complete. The licensee's staff used checklists to help ensure that the records were complete. The inspectors concluded that transportation activities were being implemented in accordance with the instructions provided in the applicable procedures.

The licensee provided a summary of the 2018 waste shipments in the annual radioactive effluent release report dated March 7, 2019 (ADAMS Accession No. ML19066A392). The records indicate that most shipments made in 2018 were exempt-quantity shipments that were sent to a hazardous waste disposal facility in Idaho. The NRC placed a limit on the quantities of waste material that can be disposed at the Idaho facility (see ADAMS Accession Nos. ML102870344, ML120620450, and ML12299A056). The licensee continued to maintained records documenting the amount of material shipped under each of the three exemption requests.

At the time of the inspection, the licensee had not exceeded any of the quantity limitations specified in the three exemption requests. The licensee had reached the 89 percent limit for the third exemption for solid, non-aqueous wastes. However, the licensee's staff indicated that most of these shipments had been completed, and it was unlikely that the licensee would need to ask the NRC for an increase in this, or any other, exemption limit.

4.3 Conclusions

The licensee packaged and shipped radioactive and exempt-quantity hazardous wastes in accordance with procedural and regulatory requirements.

5 Radioactive Waste Treatment, and Effluent and Environmental Monitoring (84750)

5.1 Inspection Scope

The inspectors reviewed the radioactive waste treatment and effluent and environmental monitoring programs to determine if the licensee is effectively controlling, monitoring, and quantifying releases of radioactive material in liquid, gaseous, and particulate forms to the environment. The inspectors' review included changes to the off-site dose calculation manual (ODCM), dose commitments to the public, and implementation of the radiological environmental monitoring program.

5.2 Observations and Findings

The technical specifications, an appendix to the license, state, in part, that the requirements of the ODCM, effluent control, and environmental monitoring programs are provided in the HBQAP. The inspectors reviewed the HBQAP, ODCM, annual radiological environmental monitoring report for 2018 (ADAMS Accession No. ML19109A017), and the annual radioactive effluent release report for 2018 (ADAMS Accession No. ML19066A392) during the inspection. The inspectors determined that the licensee implemented the effluent and environmental monitoring programs in accordance with the HBQAP, and public doses were well below the regulatory limits.

At the time of the inspection, there were no liquid or gaseous effluent releases. The liquid effluents program was suspended by the licensee in 2013 when the liquid radwaste system was taken out of service. Since 2013, liquid radioactive wastes have been shipped offsite for processing and disposal as needed. The licensee discontinued groundwater sampling in May 2017.

The potential for noble gas and iodine releases was eliminated when the spent fuel was placed into sealed containers in 2008. The licensee discontinued stack monitoring for particulate when the stacks were taken out of service in 2015. The licensee committed to monitoring releases from modular high-efficiency particulate air ventilation systems if they were used in decommissioning activities. According to the licensee's records, there were no modular ventilation system releases in 2018.

The environmental monitoring program included air particulate and external radiation exposure monitoring. The licensee maintained five air sampling stations, one offsite and four onsite. Air samples were collected and analyzed weekly for gross alpha and gross beta. Quarterly composite samples were analyzed for gamma isotopes, primarily cobalt-60 and cesium-137. The licensee's records indicated that all onsite air sampling results were comparable to background levels.

In addition to air sampling, the licensee monitored ambient gamma radiation levels using thermoluminescent dosimeters (TLDs). The ODCM requires a minimum of eight onsite stations at or within the site boundary fence line. The TLDs were exchanged quarterly. The licensee had 16 TLD stations in service for the majority of 2018. During the second quarter exchange for 2018, TLD Station T-10 was discovered to be missing – the post, housing, and TLD had been removed as part of decommissioning activities on site. The licensee reestablished Station T-10 and worked with decommissioning planning staff to identify and move TLD stations as work progressed. Over the course of remainder of 2018, station T-11 was relocated twice to accommodate decommissioning activities, and stations T-2, T-10, and T-9 were each relocated once. The highest ambient gamma radiation levels were measured at TLD station T-9. This station is located onsite near the north-northeastern site boundary. This location averaged 15.9 millirem per quarter with a background average of 12.6 millirem per quarter.

The licensee assessed the dose to members of the public on an annual basis. The licensee's assessment for 2018 concluded that public doses were less than 1 millirem per year, well below the 100 millirem per year regulatory limit. The licensee's annual radiation protection program review concluded that site decommissioning activities did not have measurable radiological impacts on the environment or members of the public.

5.3 Conclusions

The licensee implemented the effluent and environmental monitoring programs as required by the license. The licensee concluded that site decommissioning activities had a negligible impact on the environment and members of the public in 2018.

6 Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors (83801)

6.1 Inspection Scope

The inspectors evaluated whether the licensee was conducting final status surveys in accordance with the requirements specified in the License Termination Plan (LTP) and site procedures. The inspectors observed in-process surveys and conducted an independent confirmatory survey.

6.2 Observations and Findings

a. Confirmatory Surveys

Section 5 of the LTP provides the requirements for final status surveys (ADAMS Accession No. ML18066A137). Site procedures were developed to provide detailed instructions for conducting and documenting these surveys. During the inspection, the licensee conducted final site restoration surveys in five survey units located near the former discharge canal. This location was previously used for short-term storage of excavated soils prior to reuse onsite. The inspectors observed the licensee's performance of its final site restoration surveys, and the inspectors conducted an independent confirmatory survey in the same area.

The licensee conducted two types of final surveys, final status surveys and final site restoration surveys. Final status surveys were conducted on open land areas immediately after excavation. Typically, these areas were backfilled with soil. The backfill material was either site soil that had been surveyed for reuse, or clean soil imported from offsite sources. After backfilling, the licensee conducted final site restoration surveys to confirm that the as-left conditions met the same release requirements as final status surveys.

During the inspection, the licensee conducted final site restoration surveys of five survey units near the former discharge canal. The discharge canal was originally classified as a Class 1 area per Section 5.2.2 of the LTP. The area was previously excavated, and final status surveyed. The licensee subsequently backfilled the area with soil that had been surveyed and cleared for reuse. The licensee developed final status survey planning worksheets for the five survey units. The total surface area that was surveyed was approximately 2,238 square meters.

The final site restoration surveys consisted of survey scans and soil sampling. The scans were conducted on 100 percent of the surface area, since the area had been previously classified as a Class 1 area. The action level for the scan surveys was set at 1,000 counts per minute above background. In practice, any radioactivity that was distinguishable from background was flagged for additional surveys and soil sampling. The licensee's staff conducted a tailboard briefing and job safety analysis prior to performance of the survey. The inspectors confirmed that the surveyors conducted the

surveys using the methodology described in the LTP and site procedures. The inspectors noted that the licensee's scan survey action level was more conservative than specified in the LTP and site procedures. The licensee's surveyors did not identify radioactivity above the action level.

The licensee collected soil samples from the area in a systematic manner. Site procedures required additional split samples for quality control purposes. The licensee analyzed the samples onsite for concentrations of gamma emitting radionuclides. Selected samples were shipped offsite for laboratory analysis for hard-to-detect radionuclides. The results of the soil sampling were not available at the end of the onsite inspection period.

The inspectors reviewed the licensee's instrument calibration and functional test records for the instrumentation used during the surveys. The records indicated that the meters had been calibrated prior to use, and the daily checks indicate that the meters were functional before and after the surveys. Finally, the inspectors reviewed the training records for the technicians performing the survey, and the records were found to be up to date.

The inspectors conducted a confirmatory scan survey in conjunction with the licensee's final site restoration surveys. The inspectors used a Ludlum Model 2221 survey meter with Model 44-10 probe (NRC No. 076572, calibration due date of July 19, 2019) and Radeye SX survey meter with SPA-3 probe (Serial No. 52210, calibration due date of March 3, 2020). The survey was conducted after the area had been backfilled, but prior to installation of the top soil. The inspectors did not identify radioactivity in concentrations distinguishable from background during the confirmatory survey.

b. Instrument Response Checks

Humboldt Bay Power Plant license DPR-7, License Condition 2.C.5., "License Termination Plan (LTP)", states, in part, NRC License Amendment No. 45 approves the LTP. Section 5.4.4.3, "Response Checks," states, in part, response checks are performed daily before instrument use and again at the end of use to ensure proper field survey instrument response and operation.

In February 2019, the licensee's staff became aware that it had not conducted daily instrument response checks for the in-situ object characterization system (ISOCS), the licensee's gamma spectroscopy instrument designed for use in the field. One reason for the oversight involved the licensee's classification of the ISOCS equipment. The licensee's staff previously considered the ISOCS to be laboratory instrumentation instead of field instrumentation.

In response to the finding, the licensee's staff added the finding to its corrective action program (SAPN 1450541). The proposed corrective actions included procedure revisions, training, and review of all measurements previously collected using the ISOCS instrumentation. At the time of the onsite inspection, the records review was still in progress.

The inspectors concluded that the licensee's failure to conduct daily response checks of the ISOCS instrumentation as required by the LTP was a violation of License Condition 2.C.5 of License DPR-7 (NCV 050-00133/1901-001). Because this issue was

licensee identified and entered into the licensee's NRC-approved corrective action program, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC's Enforcement Policy.

6.3 Conclusions

The licensee was conducting final status surveys in accordance with the LTP and procedural requirements, with one exception. The licensee's failure to conduct daily response checks of the ISOCS instrument was identified as a non-cited violation of the License Condition 2.C.5 of the license. During confirmatory surveys of portions of the former discharge canal area, the inspectors identified no measurements distinguishable from background.

7 Exit Meeting Summary

The inspectors presented the inspection results to the licensee's representatives at the end of the onsite inspection on April 25, 2019. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was provided to the inspectors during the inspection.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Anderson, Count Room Supervisor, BHI
A. Barkley, Project Manager, APTIM
B. Barley, Site Closure Manager
M. Blake, Final Status Survey Engineer, BHI
D. Gilson, Program Manager, APTIM
B. Lopez, Licensing
G. Madison, Final Status Survey Engineering Supervisor
W. Parish, Radiation Protection Consultant
K. Rowberry, Site Closure
J. Salmon, Deputy Director
D. Smith, Site Superintendent, APTIM

INSPECTION PROCEDURES (IPs) USED

IP 71801	Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 40801	Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors
IP 83750	Occupational Radiation Exposure
IP 86750	Solid Radioactive Waste Management and Transportation of Radioactive Materials
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 83801	Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors

ITEMS OPENED, CLOSED AND DISCUSSED

Opened

050-00133/1901-01 NCV Failure to conduct instrument response checks of ISOCS

Closed

050-00133/1901-01 NCV Failure to conduct instrument response checks of ISOCS

Discussed

None

Attachment

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	*Code of Federal Regulations*
HBQAP	Humboldt Bay Quality Assurance Plan
IP	Inspection Procedure
ISFSI	independent spent fuel storage installation
ISOCS	in-situ object characterization system
LTP	License Termination Plan
NCV	non-cited violation
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PSDAR	Post-Shutdown Decommissioning Activities Report
SAPN	SAP Notification
TLD	thermoluminescent dosimeter

HUMBOLDT BAY POWER PLANT INSPECTION REPORT 050-00133/2019-001, DATED MAY 21, 2019

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ADAMS ACCESSION NUMBER: ML19135A315

■ SUNSI Review By: RJE	ADAMS: ■ Yes ☐ No	☐ Sensitive ■ Non-Sensitive	☐ Non-Publicly Available ■ Publicly Available	Keyword NRC-002

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