



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

March 13, 2012

Mr. John T. Conway
Senior Vice President-Energy Supply
& Chief Nuclear Officer
Pacific Gas and Electric Company
P. O. Box 3
Mail Code 104/6/601
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SUBJECT: NRC INSPECTION REPORT 050-00133/12-007

Dear Mr. Conway:

This refers to the inspection conducted on February 13-17, 2012, at the Humboldt Bay Power Plant, Unit 3 facility, in Eureka, California. The enclosed report presents the results of this inspection. This inspection was an examination of activities conducted under your license as they relate to safety and 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. In summary, the inspector determined that you were conducting decommissioning activities in accordance with license and regulatory requirements. The preliminary inspection results were presented to your staff at the conclusion of the onsite inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," 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 documents system (ADAMS), accessible from the NRC's Web site at [HTTP://www.nrc.gov/reading-rm/adams.html](http://www.nrc.gov/reading-rm/adams.html). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact Dr. Gerald Schlapper, Health Physicist at 817-200-1273 or the undersigned at 817-200-1191.

Sincerely,
/RA/

D. Blair Spitzberg, PhD, Chief
Repository and Spent Fuel Safety Branch

Docket: 050-00133
License: DPR-7
Enclosure:
NRC Inspection Report 050-00133/11-008

Pacific Gas and Electric Company

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U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket: 050-00133

License: DPR-7

Report: 050-00133/12-007
Licensee: Pacific Gas and Electric Company

Facility: Humboldt Bay Power Plant, Unit 3

Location: 1000 King Salmon Avenue
Eureka, California 95503

Dates: February 13-17, 2012

Inspector: Gerald Schlapper, PhD, PE, CHP, Health Physicist
Repository and Spent Fuel Safety Branch

Approved by: D. Blair Spitzberg, PhD, Chief
Repository and Spent Fuel Safety Branch

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

Humboldt Bay Power Plant, Unit 3
NRC Inspection Report 050-00133/12-007

This inspection was a routine, announced inspection of decommissioning activities being conducted at the Humboldt Bay Power Plant (HBPP), Unit 3 facility. In summary, the licensee was conducting site activities in compliance with regulatory and license requirements. On the first day of the scheduled inspection the site experienced an earthquake. As observed by the inspector, the licensee responded as per procedure and license and regulatory requirements. During the inspection, a worker contacted a 480 volt electrical cable, a near miss to a serious injury. The licensee initiated a safety standown for activities within the turbine building to address this safety concern.

Self-assessment, Auditing, and Corrective Action

The licensee conducted self-assessments, audits and corrective actions in accordance with license and regulatory requirements. (Section 1)

Decommissioning Performance and Status Review

At the time of the inspection, decommissioning remains on schedule and within budget. There are decisions to be made in the near term that could impact schedule and costs although the sequence of some activities was adjusted to accommodate challenges of scheduling. The licensee conducted decommissioning activities in accordance with license and regulatory requirements. Radioactive postings and boundaries were maintained in accordance with regulatory requirements. During the inspection, a worker initiated action created an electrical hazard in a radiological area which could have resulted in significant injury or death to a worker. The licensee initiated a work standown to investigate the event. (Section 2)

Maintenance and Surveillance at Permanently Shutdown Reactors

The licensee conducted maintenance and surveillance in accordance with license and regulatory requirements. (Section 3)

Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors

The licensee performed characterization surveys of portions of the site in accordance with license and regulatory requirements. During the inspection, confirmatory sampling and surveys were performed by Oak Ridge Institute for Science and Education (ORISE), an NRC contractor. A separate report from ORISE will be forwarded once sample analysis is complete. (Section 4)

Response to Earthquake

A magnitude 5.6 earthquake occurred on February 13, 2012 at 1:07 PM local time, northeast of Eureka and 35 miles from the Humboldt Bay Power Plant. The licensee responded to the event following their emergency procedures and in compliance with license and regulatory requirements. There was no significant damage identified to licensed facilities. (Section 5)

Report Details

Summary of Plant Status - Unit 3

During the inspection, the Humboldt Bay Power Plant (HBPP), Unit 3, was being decommissioned by the licensee in accordance with commitments made in its Post Shutdown Decommissioning Activities Report, dated June 30, 2009. The licensee has completed the process of analyzing options and has decided to section the reactor vessel prior to disposal. Sectioning of the vessel is currently projected for calendar year 2013.

1 Self-assessment, Auditing, and Corrective Action (40801)

1.1 Inspection Scope

The inspector evaluated whether the licensee conduct of self-assessment, auditing and implementation of the corrective action program were in accordance with license and regulatory requirements.

1.2 Observations

The inspector reviewed on-site quality verification assessments of selected activities. These audits fulfill the requirements of the HBPP Quality Assurance (QA) Plan, L-4, Volume 4, Rev 28. One assessment selected for review was a corrective action effectiveness review of the design process, linked to failures in design and implementation of the Liquid Radioactive Waste System. The assessment reviewed applicable requirements from the Design Change Procedure HBAPC-1 and verified that those requirements were implemented during the design process. Also reviewed by the auditor was the design change package to verify that adequate guidance was provided to address the design changes. A second assessment was of the Multi-Agency Radiation Site Survey Manual, NUREG-1575 (MARSSIM) characterization survey planning and survey area preparation of the Liquid Fuel Oil Storage Tank Area (LOFA) as proposed by the site Final Status Survey (FSS) group. The auditor concluded that the survey met the required rigor of a final status survey. Regarding the handling of safeguards information, the licensee had noted an adverse trend in handling of safeguard information. The auditor of this area noted that corrective actions have been identified and are in the process of being implemented to prevent recurrence. The licensee audit of the site Emergency Plan identified significant concerns. Condition Reports were generated and tracked in the licensee's corrective action program. Implementation of these corrective actions will be reviewed in a future inspection. Inspector review of these audit reports indicate that the site management supports the independent review of problems. Analysis of corrective actions was noted in all audit reports. Detailed procedures were developed to ensure these actions occurred.

The QA program also includes an independent review function implemented by the Nuclear Safety Oversight Committee (NSOC). The committee is chartered to provide an independent review of the Independent Spent Fuel Storage Installation (ISFSI) or Unit 3 changes, tests, experiments and procedures which constitute a change to the HB ISFSI as described in the ISFSI Final Safety

Analysis Report (FSAR) or the HBPP Unit 3 Decommissioning Safety Analysis Report (DSAR). In addition the NSOC is charged with ensuring that reportable events are investigated and corrected in a timely manner in order to reduce the probability of recurrence of such events. The inspector reviewed selected minutes of the NSOC meetings and noted that the meetings have been held on a quarterly basis and that future meetings will also conform to this requirement. Quorum and committee makeup requirements were satisfied.

High risk activities on-site are reviewed by the Site Readiness Review Board to ensure that planning is complete, required equipment is available and that work is ready to proceed. The Board is to review the potential hazards and mitigation actions associated with radiologically significant decommissioning activities (RSDA). The intent is to better ensure protection of the public, site workers and the environment. The inspector attended a meeting of the Readiness Review Board on February 15, 2012, that served as part of the readiness review for the Chimney Lift. Details of the effort, specific requirements, contingency planning and concerns were presented and discussed. Attendees and participants were noted and action items assigned as appropriate.

1.3 Conclusions

The licensee conducted self-assessments, audits and corrective actions in accordance with license and regulatory requirements.

2 Decommissioning Performance and Status Review (71801)

2.1 Inspection Scope

The inspector evaluated whether the licensee and its contracted workforce were conducting decommissioning activities in accordance with license and regulatory requirements.

2.2 Observations

The licensee's project team continues to work to determine the end state of decommissioning and key assumptions associated with various options. The licensee plans to submit the License Termination Plan (LTP) to the NRC to include proposal of the final end state and cleanup standards in 2012. As a part of initiating this process early, a feasibility study for caisson removal is currently underway. The licensee completed removal of steam piping, feed water piping and other plant systems from the turbine building. A proof of concept effort to surface decontaminate one of the turbine rooms is underway to permit development of specifications to prepare the turbine area for possible demolition during 2012. Studies and requests for bids for the remainder of the project scope of work are being developed to allow the licensee to better define and sequence the project during 2014 and 2015 in order to meet a forecasted project completion date of June 30, 2016.

On Wednesday February 15, 2012, the facility experienced a near miss safety event when a live 480 volt line was penetrated by a worker. Based on an update provided by the licensee, two electricians were working within the Radiological

Controlled Area, installing an additional 480 volt line through a penetration patch. The electricians were wearing standard HBPP Personal Protective Equipment (PPE) which includes use of leather gloves. The penetration contained two live 480 volt lines, two water lines and a smaller lower voltage electrical line and was sealed with foam. One of the electricians decided to use a four foot hollow metal pipe to push through the foam and allow for installation of the new 480 volt line. As the pipe was pushed through the foam, it penetrated a live 480 volt cable. The circuit tripped at a load center that supplies power to the turbine building resulting in loss of power to the turbine building. The electrician did not notice any electrical shock. The inspector observed workers exiting the turbine building and noted that a safety stand down of work in the turbine building was issued. The licensee also made a courtesy notification by email to both the NRC's Project Manager and Region IV office. An investigation was initiated and a condition report issued to document the event. The inspector attended briefings where workers were informed of the status and significance of this near miss. A Technical Review Group (TRG) was formed to investigate the event. Results of the TRG efforts will be reviewed in a future inspection.

The inspector observed ongoing work in the reactor building and other locations on-site. Workers were observed to be in compliance with requirements of the applicable Radiation Work Permit (RWP). Radiological postings on fences and at entrances to the restricted area were clearly visible, and postings met the requirements of 10 CFR Part 20. Use of ventilation and glove bag enclosures were also noted. Based on data supplied by the licensee, the inspector noted that the actual personnel exposures through the end of January 2012 of 15.4 Man-Rem compares favorably to an estimated level of 19.0 Man-Rem. The inspector reviewed training of general employees (GET) and radiation workers (RW) to include in class observation and review of additional power point instructional material. Examinations were also reviewed to ensure that terminal learning objectives were tested. The inspector concluded that the site follows a systematic approach to training for GET and RW training. The licensee requires annual training and an annual whole body count for continued non-escorted access to the radiological control area. The inspector verified while entering the area that the Sentinel entry control system provided positive control to prevent entry of personnel who did not comply with these requirements.

2.3 Conclusions

The licensee conducted decommissioning activities in accordance with license and regulatory requirements. Radiation postings and boundaries were maintained in accordance with regulatory requirements. Ongoing work was conducted following applicable procedures and in accordance with license and regulatory requirements. During the inspection, a worker initiated action created an electrical hazard in a radiological area which could have resulted in significant injury or death to a worker. The licensee initiated a work standown to investigate the event.

3 Maintenance and Surveillance (62801)

3.1 Inspection Scope

The inspector evaluated the licensee's program for maintenance and surveillance to ensure that the program was in accordance with license and regulatory requirements.

3.2 Observations

The HBPP has been in SAFSTOR shutdown since 1984. During active decommissioning, systems have been removed from service. In order to accommodate these changes but remain compliant with license and regulatory requirements, the licensee established a database of required tests, calibrations, and maintenance. Upcoming requirements are flagged and output on a routine basis is reviewed by SAFSTOR supervision. Review of selected data by the inspector noted that requirements were met. The licensee confirmed as noted by the inspector that removal of decommissioned systems from the database can lag removal of the system from service.

As a follow up to a previous inspection (IR 050-00133/11-08), the inspector reviewed the status of the Radioactive Effluent Liquid Process Monitor System (RLEMS). Updating of this system which monitors radioactivity in liquid discharges prior to release to the environment involves installation of a new detection system and a change in system location. The modification when complete, tested and placed into service replaces the detector, preamplifier and cable between the preamplifier and ratemeter. During an earlier inspection it was noted that full acceptance of the RLEMS had not been completed due to the fact, that system trips due to an unknown cause. When the system trips, liquid discharge to the environment is not permitted so there are no unmonitored discharges. Investigation continues as to the cause of the system trips and operation of this system will be a subject of future inspections.

3.3 Conclusions

The inspector reviewed maintenance of systems still required during SAFSTOR and found it to be compliant with license and regulatory requirements.

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

4.1 Inspection Scope

The inspector reviewed the licensee program for characterization surveys of the Fuel Oil Tank Area (FOTA) to determine whether the licensee conducted these efforts in accordance with license and regulatory requirements. The inspector observed the licensee conduct characterization surveys combined with a confirmatory side by side survey by the Oak Ridge Institute of Science and Engineering (ORISE). The ORISE effort will generate independent radiological data for use by NRC in evaluating adequacy and accuracy of the licensee's soil sampling and direct measurement efforts.

4.2 Observations

Due to the very limited size of the Humboldt Bay Power Plant site, the licensee has found it necessary to survey decontaminated and decommissioned areas and then backfill or pave over areas to allow for further decommissioning activities such as storage of materials. The licensee has removed a fuel oil tank and plans to utilize the area for other purposes. The fuel oil tank area (FOTA) is located in the northwest section of the site and covers approximately 3000 square meters. Data collected during walkover gamma measurements and soil sampling by the licensee and ORISE will be reviewed as presented in a final report to be forwarded to NRC. This will allow NRC to assess whether classifications based on the MARSSIM process are appropriate, whether any radionuclides of concern are detected above background levels and whether the quality of data is such that comparison to screening values and derived FOTA specific derived concentration guidelines (DCGLs) is possible. The inspector observed the licensee conducted surveys in accordance with their plan and procedures. The ORISE survey team conducted their surveys in accordance with their survey procedures and quality program requirements. Selected soil samples and data from the gamma walkover effort that was collected onsite was returned to the ORISE laboratory in Oak Ridge, TN, for analysis and interpretation. Sample analysis will be performed in accordance with ORISE Procedures. Measurements and sampling locations will be documented in the ORISE final report on detailed survey maps.

4.3 Conclusions

Preliminary results of the confirmatory surveys conducted by ORISE indicate that the licensee conducted an adequate and accurate survey of the FOTA following accepted techniques prescribed in MARSSIM and in accordance with license and regulatory requirements. Once analysis of samples is complete, ORISE will supply a final project report to NRC.

5 Response to Earthquake of February 13, 2012

5.1 Inspection Scope

The inspector was present during the licensee's response to the earthquake event of February 13, 2012, and observed activities to ensure compliance with procedural, license and regulatory requirements.

5.2 Observations and Findings

At 1:07 PM while the inspector was in route to the site an earthquake of magnitude 5.5 occurred 35 miles northeast of Eureka. At approximately 1:15 PM the licensee as a courtesy notified the inspector of the event by phone. Based on a timetable of events supplied by the licensee, Procedure EOP-5, Earthquake, was initiated at 1:08 PM. The licensee noted that at approximately 1:10 PM, a high level alarm was received on a waste tank but after acknowledgement, the alarm soon cleared, indicating possible sloshing within the tank. The inspector arrived on-site at approximately 1:30 PM, concurrent with arrival of the on-call

Emergency Coordinator. The inspector observed that the Emergency Procedure had been implemented and noted adherence by the licensee to requirements. Licensee personnel completed a full site tour and noted no abnormalities. At approximately 3:00 PM, all requirements of the procedure had been met and the procedure was terminated. No abnormalities were noted.

5.3 Conclusions

The licensee response to the earthquake event followed their procedure and was in accordance with license and regulatory requirements.

6 Exit Meeting

The inspector reviewed the scope and preliminary findings of the inspection during an exit meeting that was conducted at the conclusion of the onsite inspection on February 16, 2012. The licensee did not identify as proprietary any information provided to, or reviewed, by the inspector.

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

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INSPECTION PROCEDURES USED

IP 40801 Self-assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors
IP 62801 Maintenance and Surveillance at Permanently Shutdown Reactors
IP 71801 Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 83801 Inspection of Remedial and Final Surveys at Permanently Shutdown Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

CFR	<i>Code of Federal Regulations</i>
HBPP	Humboldt Bay Power Plant
IP	NRC Inspection Procedure
ISFSI	independent spent fuel storage installation
ODCM	Offsite Dose Calculation Manual
RCRA	Resource Conservation and Recovery Act
RWP	Radiation Work Permit