UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

August 3, 2007

Mr. John S. Keenan
Senior Vice President – Generation and Chief Nuclear Officer
Pacific Gas and Electric Company
P.O. Box 770000, Mail Code B32
San Francisco, California 94177-0001

SUBJECT: NRC INSPECTION REPORT 050-00133/07-003

Dear Mr. Keenan:

An NRC inspection was conducted on July 10 -13, 2007, at your Humboldt Bay Power Plant Unit 3 facility. This inspection was an examination of activities conducted under your license as they relate to safety and compliance of the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection included reviews of your organization and management controls, safety reviews, design changes and modifications, spent fuel pool safety, maintenance and surveillance, decommissioning performance, occupational radiation exposure, and radioactive waste treatment, effluent and environmental monitoring. On July 13, 2007, at the conclusion of the site visit, an exit briefing was conducted with Mr. Loren Sharp, Director and Plant Manager, and other members of your staff. The enclosed report presents the scope and results of that 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 any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/Adams.html. To the extent possible, your response, if any, 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 the undersigned at (817) 860-8191 or Emilio M. Garcia at (530) 756-3910.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

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

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NRC Inspection Report 050-00133/07-003

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08/01/2007	08/03/2007

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	050-00133
License No.:	DPR-7
Report No.:	050-00133/07-003
Licensee:	Pacific Gas and Electric Company (PG&E)
Facility:	Humboldt Bay Power Plant (HBPP), Unit 3
Location:	1000 King Salmon Avenue Eureka, California 95503
Dates:	July 10 - 13, 2007
Inspector:	Emilio M. Garcia, Health Physicist Fuel Cycle and Decommissioning Branch, Region IV
Accompanied by:	John B. Hickman, Project Manager Reactor Decommissioning Branch, Office of Federal and State Materials and Environmental Management Programs Thomas H. Youngblood, Jr., Health Physicist Reactor Decommissioning Branch, Office of Federal and State Materials and Environmental Management Programs
Approved By:	D. Blair Spitzberg, Ph.D., Chief Fuel Cycle and Decommissioning Branch, Region IV
Attachments:	Supplemental Inspection Information
ADAMS Entry:	IR 05000133-07-03, on 07/09-13/07; Pacific Gas & Electric Co.; Humboldt Bay, Unit 3. No Violations.

EXECUTIVE SUMMARY

Humboldt Bay Power Plant, Unit 3
NRC Inspection Report 050-00133/07-003

The Humboldt Bay Power Plant (HBPP), Unit 3 was shutdown in 1976. The facility has been in a SAFSTOR status since shutdown with minimal decommissioning activity. This routine inspection was conducted to review the licensee's organization and management controls, safety reviews, design changes and modifications, spent fuel pool safety, maintenance and surveillance, decommissioning performance, occupational radiation exposures, and radioactive waste treatment, effluent and environmental monitoring.

Organization, Management and Cost Controls

- The licensee had sufficient staff to conduct the work in progress, including an ample number of certified fuel handlers. The onsite review committee was functioning in accordance with quality assurance program requirements. The composition, organization and charter of the offsite review committee were under review at the time of the inspection. The offsite review committee had yet to meet in 2007 (Section 1).

Safety Reviews, Design Changes, and Modification

- The licensee's safety review program was conducted in compliance with 10 CFR 50.59 requirements. The licensee had established and implemented a non-conformance program that was in compliance with Quality Assurance Plan requirements (Section 2).

Spent Fuel Pool Safety

- The licensee was maintaining the SFP water level and water chemistry in accordance with Technical Specifications requirements and Defueled Safety Analysis Report commitments (Section 3).

Maintenance and Surveillance

- The licensee had implemented a maintenance program which met the requirements of the Maintenance Rule provided in 10 CFR 50.65 (Section 4).

Decommissioning Performance and Status Review

- Radiological conditions of the facility were properly posted. Housekeeping and facility conditions were effectively controlled (Section 5).

Occupational Radiation Exposure

- The audit of the radiation protection program conducted in 2006 met applicable requirements. The licensee's radiological occurrence report system had properly documented and evaluated radiation protection deficiencies. The inspector concluded that changes made to the number of personnel, equipment, and procedures since the last inspection had a positive effect on occupational radiation protection. The licensee was maintaining an effective program to control and monitor occupational radiation exposures (Section 6).

Radioactive Waste Treatment, Effluent and Environmental Monitoring

- The audit of the radiation protection program, which included the effluent and environmental monitoring conducted in 2006 met applicable requirements. The offsite dose calculation manual was revised in March 2007. A new Radioactive Liquid Effluent Monitoring System was installed and declared operational in March 2007 (Section 7).

- The radioactive waste process and liquid effluent monitors were operational, properly calibrated and were being maintained as specified in the offsite dose calculation manual (Section 7).

- The Annual Radiological Environmental Monitoring and the Annual Radioactive Effluent Release Report for calender year 2006 were submitted on a timely basis and met applicable requirements. Radioactivity levels in the sampled media were generally consistent with previous years and were below the NRC required reportable levels. The releases of radioactivity in gaseous and liquid effluents in 2006 did not exceed applicable regulatory limits (Section 7).

Report Details

Summary of Plant Status

Humboldt Bay Power Plant, Unit 3, is currently in decommissioning SAFSTOR status. Unit 3 received an operating license from the Atomic Energy Commission on August 28, 1962. On July 2, 1976, Unit 3 was shutdown for annual refueling and seismic modifications. This work was suspended in December 1980, and in June 1983, PG&E announced its intention to decommission the unit. Unit 3 has been essentially in SAFSTOR since July 1985. On July 19, 1988, NRC approved the licensee's SAFSTOR plan and amended the license to a possess-but-not-operate status. The license will expire on November 9, 2015. The facility has undergone minimal decommissioning activities since shutdown.

1.0 Organization, Management, and Cost Controls (36801)

1.1 Inspection Scope

The inspector reviewed site staffing and the onsite and offsite safety review committees for compliance with regulatory requirements, site procedures, and licensee commitments.

1.2 Observations and Findings

a. Site Organization

Technical Specifications 5.2.1 provides the requirements for the onsite and offsite organizations necessary for the safe storage of irradiated fuel. The onsite nuclear organization chart was provided in site procedure Humboldt Bay Administrative Procedure (HBAP) A-1, HBPP Organization and Staff Qualifications," Appendix 6.4, Revision 25. This procedure had not been revised since the last inspection in March 2007. The inspector compared the actual structure in place at the time of the inspection to the procedure requirements. All staff positions had been filled, except two. The positions of Decommissioning Project Manager and the Unit 3 Operations Manager remained opened as of the time of the inspection. The position of Unit 3 Supervisor had been filled by the individual who previously served as an interim appointment.

The position of Director and Plant Manager had been filled on June 1, 2007, with a new individual. The licensee had verified and documented that the individual met or exceeded the minimum qualifications of ANSI N18.1 - 1971 for the position of Nuclear Plant Manager.

Section 5.2.2 of Technical Specifications states that at least one certified fuel handler (CFH) shall be onsite when fuel is in the spent fuel pool (SFP). As of July 12, 2007, there were 17 CFHs employed by the licensee. The licensee stated that this staffing level permitted meeting the Technical Specification requirements.

b. Onsite and Offfsite Review Committees

The Quality Assurance Plan, Revision 20, provides the requirements for the Plant Staff Review Committee (PSRC) and the Nuclear Safety Oversight Committee (NSOC). The inspector reviewed the implementation of the committees to ensure compliance with quality assurance program requirements.

The PSRC was the onsite group that reviewed proposed changes, tests and experiments, plant modifications, procedure revisions, and other issues having nuclear safety significance. As of July 11, 2007, the PSRC had met 19 times during 2007. The inspector reviewed the PSRC meeting minutes from March to June 2007. Minutes documented that the quorum requirements had been met and provided a list of all subjects reviewed. The committee reviewed and approved, as appropriate, proposed procedure changes, temporary procedures, plant modifications, negative trends, and nonconformances. Reasons were documented when proposed changes or procedures were rejected by the committee.

The NSOC provided high level review and oversight of site activities including the PSRC. The NSOC was required to meet at least twice per year. The only site person that was a member of this committee was the plant manager. The committee had not yet met in 2007. The Licensing Supervisor stated that the composition, organization and charter of the NSOC were under review at the time of the inspection. Although no meeting was scheduled, the Licensing Supervisor expected that the first meeting of the year would occur in September.

1.3 Conclusions

The licensee had sufficient staff to conduct the work in progress, including an ample number of certified fuel handlers. The onsite review committee was functioning in accordance with quality assurance program requirements. The composition, organization and charter of the offsite review committee were under review at the time of the inspection. The offsite review committee had yet to meet in 2007.

2.0 Safety Reviews, Design Changes, and Modifications (37801)

2.1 Inspection Scope

The inspector conducted reviews of the licensee's design change and nonconformance programs to ensure compliance with the requirements of 10 CFR 50.59 and Quality Assurance Plan requirements.

2.2 Observations and Findings

a. Design Change Process

Licensee procedure HBAP C-19, "Licensing Basis Impact Evaluation (LBIE)," Revision 21, establishes the requirements for evaluating potential effects on licensing basis documents from proposed changes to the facility, procedures, test or experiments. This procedure was used to determine if 10 CFR 50.59 evaluations were required and

whether prior NRC approval was required before implementing the changes. The inspector reviewed selected design change packages to ascertain whether the changes included a safety review or safety screening and adequate explanation of the change being proposed. The inspector reviewed five design change notices issued since this area was last inspected in March 2007. Each package included a safety screen that included consideration of the requirements of 10 CFR 50.59. Other attributes considered included impacts on decommissioning and whether changes were required to be implemented in licensing basis documents, site procedures, and site drawings. All safety screens were complete. None of the changes involved a full safety evaluation. Further, the design change notices provided sufficient detail to explain what was being changed.

b. Nonconformance Reports

Section 3.1.4 of the Quality Assurance Plan states that measures shall be established for documenting, reviewing, and dispositioning of quality problems and non-conformances. During 2006, four non-conformance reports (NCRs) were opened. The NCRs were discussed in inspection report 05000133/2006003. No additional NCRs had been opened. At the time of this inspection, two of the 2006 NCRs remained open pending completion of corrective actions to prevent recurrence (CAPR).

NCR 06-04 had been initiated by the previous Plant Manager to evaluate and resolve an apparent weakness in the standard test procedure scheduling process. This NCR was provided for closure evaluation to on June 2007 and returned to the plant on June 27, 2007, because the documented corrective actions did not reflect the actions taken and other actions were incomplete. NCR 06-02 relates to what the licensee originally characterized as an unexplained significant increase in the liquid radioactive waste tank activity. At the time of the inspection, the quality verification staff was reviewing this NCR to verify closure of all required actions.

2.3 Conclusions

The licensee's safety review program was conducted in compliance with 10 CFR 50.59 requirements. The licensee had established and implemented a non-conformance program that was in compliance with Quality Assurance Plan requirements.

3.0 Spent Fuel Pool Safety (60801)

3.1 Inspection Scope

The inspector reviewed the licensee's control of the SFP to ensure compliance with Technical Specifications requirements and Defueled Safety Analysis Report (DSAR) commitments.

3.2 Observations and Findings

The inspector conducted a tour of the SFP area and reviewed plant records to ensure the safe storage of the fuel and other irradiated items in the pool. Technical Specifications 3.1.1 states that the SFP water level shall be at an elevation of greater

than 10.5 feet. At the time of the inspection, the water level was 10.80 feet. The inspector also confirmed that the low water level alarm was set at 10.67 feet as required by the DSAR.

Technical Specifications 3.1.3 states that the SFP liner water level shall be at an elevation less than +9 inches (0.75 feet). The liner water level was -0.04 feet during the inspection. The inspector also confirmed that the licensee was monitoring both SFP level and liner water level at the frequencies established in Technical Specifications surveillance requirements.

To prevent inadvertent drainage of the SFP, the licensee had sealed the stop valve on the SFP drain, removed the piping beyond the stop valve and placed a blind flange on the pipe stem. On July 11, 2007, the inspector toured the pipe gallery area and verified that these were the conditions of SFP drain. The inspector also verified that procedure HBAP C-9 #1 listed the SFP drain stop valve as a sealed or locked valve.

Section 2.3.1.1 of the DSAR states that two sources of makeup water will be maintained for the SFP. The inspector interviewed operations staff personnel and determined that the two waters sources were the demineralized water storage tank and fire water. The DSAR specifies that a minimum of 2,000 gallons shall be maintained in the demineralized water storage tank. The demineralized water storage tank level indicator displays tank level in inches. The 2000 gallon limit amounts to 53.5 inches. On July 13, 2007, the tank level was 73.0 inches or 4149 gallons. In addition, the fire water system was available for emergency supply of water.

Table 5.2 of the DSAR provides the limits for SFP water chemistry and radioactivity levels. Details of this requirement were documented in site procedure STP 3.6.5, "Monthly Spent Fuel Pool Water Quality Check," Revision 44. The pool water was routinely sampled for pH, conductivity and cesium-137 activity. The inspector reviewed the plant records for March 29, 2006 through June 20, 2007. The licensee had collected pool water samples on a monthly frequency as required by the DSAR and had analyzed the samples for the required chemical constituents. Since March 2006, all parameters remained within DSAR limits.

The licensee continued tracking the SFP demineralizer differential pressure. The Radiation Protection Manager stated that if current trends continued it was unlikely that the resins would need to be replaced prior to fuel transfer to the independent spent fuel storage installation (ISFSI).

During sorting of irradiated components in the interim storage containers, the licensee staff located 9 small items that it appear to be fuel pellet fragments. The licensee staff concluded that these fragments were originally on the energy absorber, and had been moved to an interim storage container when the energy absorber was removed from the SFP. The licensee was storing these items in a separate interim storage container. It is expected that as cleanup of the SFP continues additional small fuel fragments will be found. Upon completion of the SFP cleanup these items and any additional suspect items found would be evaluated to determine if they were fuel fragments and should be stored with other fuel fragments previously identified.

3.3 Conclusions

The licensee was maintaining the SFP water level and water chemistry in accordance with Technical Specifications requirements and Defueled Safety Analysis Report commitments.

4.0 Maintenance and Surveillance (IP 62801)

4.1 Inspection Scope

The inspector reviewed the licensee's maintenance and surveillance program for compliance with the Maintenance Rule requirements, 10 CFR 50.65.

4.2 Observations and Findings

The licensee's maintenance program remained generally as described in Inspection Report 05000133/2005003. Administrative procedures HBAP C-40, "Maintenance Program" and HBAP C-40 #1, "Maintenance Rule Compliance," described the licensee's program for complying with the Maintenance Rule. The licensee had identified 17 Structures, Systems or Components (SSCs) that were subjected to the Maintenance Rule. The licensee had developed surveillance test procedures (STPs) to monitor the SSCs subject to the Maintenance Rule as required by 10 CFR 50.65(a)(1).

The inspector reviewed the licensee method to assure the timely conduct of STPs. The licensee used administrative procedure HBAP C-3#2, "Scheduling of Plant and Equipment Tests" for keeping the STP schedules updated and for issuing the weekly reminders to the test coordinators. The STP schedule and weekly reminders were maintained in paper records. The licensee was testing a computer based system to update the STP schedule and to generate the weekly reminders.

The STP schedule had been maintained.

4.3 Conclusions

The licensee had implemented a maintenance program that met the requirements of the Maintenance Rule provided in 10 CFR 50.65.

5.0 Decommissioning Performance and Status Review (IP 71801)

5.1 Inspection Scope

The inspector conducted tours of the site to evaluate whether facility conditions were being effectively controlled during SAFSTOR.

5.2 Observations and Findings

The inspector toured the fuel handling building, the Unit 3 control room, and other areas of the facility. Radiological postings were visible and met the requirements of 10 CFR Part 20. Housekeeping and facility conditions were effectively controlled. Most

of the areas in the facility were free of radiological contamination and were accessible without the need of protective clothing. No safety concerns were observed during the tours. The control room indicators associated with monitoring SFP water and liner levels were confirmed to be functional.

5.3 Conclusions

Radiological conditions of the facility were properly posted. Housekeeping and facility conditions were effectively controlled.

6.0 Occupational Radiation Exposure (IP 83750)

6.1 Inspection Scope

The inspector reviewed the licensee's recent radiation protection program audit and their radiological occurrence reporting system. The inspector interviewed the radiation protection manager and the radiation protection engineer to determine if any of the changes that had been made to the organization, personnel, facilities, equipment, programs, or procedures since the last inspection had a negative affect on occupational radiation protection. The licensee's personnel radiation monitoring program and associated reports submitted were inspected for compliance with applicable regulatory requirements and commitments.

6.2 Observations and Findings

a. Audits and Appraisals

10 CFR 20.1101 required each license to conduct, at least annually, a review of their radiation protection program content and implementation. The controlling procedure for conducting this review is Humboldt Bay Administrative Procedure HB-C200, "Requirements for the HBPP Radiation Protection Program."

The inspector reviewed EDMS #062500018, the biennial audit of the Radiation Protection, Radioactive Materials Packaging and Transportation, and Radioactive Waste Processing and Process Control Program. This audit was performed October 9 through 20, 2006. The individuals that conducted the audit were independent of the HBPP organization and did not report to any managers at HBPP. This audit identified 7 quality problems and made 17 recommendations. The licensee had opened problem reports (SAP Notifications) for all quality problems and recommendations identified in the audit. The licensee had addressed the quality problems and recommendations identified in the audit and had completed all of the actions.

To document and evaluate identified radiation protection deficiencies, the licensee had established the Radiological Occurrence Report (ROR) system. This program was guided by Radiation Control Procedure RCP-2F, "Radiological Occurrence Reports." The ROR system classified occurrences as Level 1 or Level 2. Level 1 is minor radiological occurrences that may be below the threshold for a plant problem report. Level 2 is radiological occurrences that violated procedures, policies and NRC directives or that require a higher than Level 1 attention. Records maintained by the licensee

indicated that 31 RORs were issued in 2006 of which 8 were Level 2. As of July 10, 2007, six RORs had been initiated in calendar year 2007 of which 2 were Level 2. The Level 2 RORs were identified as Level 2 because they required a higher attention than Level 1, such as assigning dose to an individual. None of the Level 2s were the result of violated procedures, policies nor NRC directives. The licensee had effectively followed its process for reporting, documenting, and evaluating radiological occurrences.

b. Changes

There had been no changes in organization, since this area was last reviewed during the March 27-31, 2006, inspection. The licensee had added three senior radiation protection technicians and one decontamination technician as temporary additions to support the pool cleanup work and the independent spent fuel storage installation project.

The licensee had acquired three new digital telescoping detector radiation instruments for site use. New operating and testing procedures were been developed and would be implemented prior to placing these instruments into service.

Four radiation control standards and 41 radiation control procedures had been revised, or had been initially issued since this area was last inspected in September 12-14, 2005. The inspector selected two standards and three procedures for review. The reviews indicated that procedure changes implemented by the licensee provided improvements or clarifications for the existing procedures. The inspector concluded that these procedure changes had a positive effect on the program.

c. External and Internal Exposure Control and Other Radiation Protection Inspection Areas

The inspector interviewed the Radiation Protection Engineer and Dosimetry Coordinator about the occupational radiation exposure control program, and examined occupational dosimetry records from January 1, 2006, through June 30, 2007. The records indicated that no individual had been classified as a declared pregnant worker and that no planned special exposures had been conducted.

The licensee used thermo luminescent dosimeters (TLDs) provided by the Diablo Canyon Nuclear Power Plant. Diablo Canyon was accredited under the National Voluntary Laboratory Accreditation Program for the type of dosimeters used. This accreditation is valid through September 30, 2007.

During calender year 2006, the licensee had monitored 143 individuals with TLDs for external radiation exposure and 41 individuals with breathing zone air samples for internal exposures. During calendar year 2006, there were 17 incidents of personnel contamination and 2 in 2007 as of July 10. Not all personnel contaminations resulted in dose being assigned to the individual. When dose assignment was required the licensee used Varskin Model 2 computer code to evaluate the dose associated with the skin contamination. The cumulative total effective dose equivalent (TEDE) during 2006 for all individuals monitored was 4.086 rem; 4.002 rem from external exposure, deep dose equivalent (DDE) and 0.084 rem to internal exposure or committed effective dose equivalent (CEDE). CEDE was calculated based on the results from breathing zone air

samples results. The individual with the highest exposure during calendar year 2006 received 0.658 rem TEDE, 0.649 rem DDE and 0.009 rem CEDE. The highest CEDE was 0.030 rem. During calender year 2006, other dose measurements for shallow dose, lens of the eye dose, and extremity dose were all below applicable limits.

The licensee identified two cases where the ratio of TLD to electronic dosimeter (ED) readings for an individual radiation worker wearing the two dosimeters during the same period differed by more than 25 percent. A problem report was initiated that was still open. Preliminary results of the evaluation found that during the first quarter of 2007 when comparing TLD vs ED in about 70 percent of the TLD results were higher than the ED. The licensee is continuing to evaluate the reason for this discrepancy, but believes that it was due to not applying a geometry factor to the ED. All doses assigned were based on the TLD readings

6.3 Conclusions

The audit of the radiation protection program conducted in 2006 met applicable requirements. The licensee's radiological occurrence report system had properly documented and evaluated radiation protection deficiencies. The inspector concluded that changes made to the number of personnel, equipment, and changes procedures since the last inspection had a positive effect on occupational radiation protection. The licensee was maintaining an effective program to control and monitor occupational radiation exposures.

7.0 Radioactive Waste Treatment and Effluent and Environmental Monitoring (84750)

7.1 Inspection Scope

The inspector interviewed cognizant personnel and reviewed selected documents to determine if any significant changes had been made by the licensee that affected (1) the licensee's liquid and airborne radwaste, water chemistry, and radiological environmental monitoring organization or (2) the offsite dose calculation manual (ODCM). The inspector reviewed the status of radioactive waste process and effluent monitors. The 2006 Annual Radiological Environmental Monitoring and the 2006 Annual Radioactive Effluent Release Reports were reviewed.

7.2 Observations and Findings

a. Audits and Appraisals

As noted in Section 6.1a above, the inspector reviewed EDMS #062500018, the biennial audit of the Radiation Protection, Radioactive Materials Packaging and Transportation, and Radioactive Waste Processing and Process Control Program. This audit was performed October 9 through 20, 2006. The individuals that conducted the audit were independent of the HBPP organization and did not report to any managers at HBPP. This audit identified 7 quality problems and made 17 recommendations. The licensee had opened problem reports (SAP Notifications) for all quality problems and recommendations identified in the audit. The licensee had addressed the quality

problems and recommendations identified in the audit and had completed all of the actions.

b. Changes

This area was last inspected March 27-31, 2006. There had been no significant changes made to the site radiological monitoring organization. The licensee last updated the ODCM to Revision 13, on March 2, 2007. This change has not yet been formally reported to the NRC. It will be reported with issuance of the Annual Radioactive Effluent Release Report for 2007. This change to the ODCM was required to address changes to the radwaste system. A new Radioactive Liquid Effluent Monitoring System was declared operation on March 19, 2007. New components included scintillation detector, analyzer, activity monitor, system indications including alarms, high alarm trip feature, and power supply. The only components not changed in the Radioactive Waste Liquid Effluent Monitoring System were the radioactive check source, liquid sampler and the associated piping.

b. Process and Effluent Monitors

Section 2.1 of the ODCM specified that the radioactive liquid effluent monitoring instrumentation shall have at least one channel of gross radioactivity monitoring providing the capability to automatically terminate the effluent release based on gross activity at all times. The surveillances for this instrument included daily channel check, quarterly source check and functional test, and annual channel calibration. As noted above a new Radioactive Liquid Effluent Monitoring System was declared operational on March 19, 2007. The inspector reviewed selected records of surveillances performed on this instrument and concluded that the instrument was being maintained as required by the ODCM. The instrument was last calibrated on March 2, 2007, and was operational at the time of the site visit.

During the revision of the ODCM, the licensee staff identified an error on the formula used for setting the Radioactive Liquid Effluent Monitor (RLEM) alarm. A problem report, SAPN 1242451, was opened to evaluate this problem. The evaluation concluded that this error could have resulted in liquid releases exceeding the 10 CFR Part 20 Appendix B limit only if an inadvertent discharge with no circulating water pumps operating occurred. The licensee reviewed their records and determined that no inadvertent discharges had occurred and all discharges had at least one circulating pump operational.

c. Annual Radiological Environmental Monitoring Report for 2006

Technical Specification 5.7.2 required that an Annual Radiological Environmental Monitoring Report be submitted to the NRC prior to May 1 covering the previous calendar year. On April 30, 2007, the licensee submitted the 2006 report. This report indicated that direct radiation, surface water, and groundwater and were being monitored as required. Airborne, ingestion and terrestrial pathway monitoring was not required by the ODCM. The environmental report submitted as part of the SAFSTOR license request established baseline conditions for those pathways. The licensee monitors direct radiation at 16 locations onsite. The onsite locations were slightly higher this year

than in previous years. The licensee attributed the slight increase to the movement and storage of radioactive resin onsite. Radioactivity levels in other sampled media were consistent with previous years and all results were below the NRC required reportable levels.

a. Annual Radioactive Effluent Release Report for 2006

Technical Specification 5.7.3 required that an Annual Radioactive Effluent Release Report be submitted prior to April 1 of each year. In accordance with 10 CFR 50.36(a), the report must cover the activities of the previous calender year. On March 28, 2007, the licensee submitted the 2006 Annual Radioactive Effluent Release Report on a timely basis. The report included summaries of radioactive gaseous and liquid releases from the site. The report concluded that the releases of radioactivity in gaseous and liquid effluents were well below the 10 CFR 50 Appendix I numerical as low as reasonably achievable (ALARA) guidelines and that the maximum potential direct radiation dose although slightly increase over previous years remained well below the limits of 10 CFR 20.1302(b)(2(ii).

There were no abnormal gaseous or liquid releases during 2005. There were eight liquid batch releases during 2006 and no continuous liquid releases. There were no batch gaseous releases during 2006.

In 2006, no solid radioactive waste was disposed.

The ODCM was not revised during this 2006.

7.3 Conclusions

The audit of the radiation protection program, which included the effluent and environmental monitoring conducted in 2006 met applicable requirements. The offsite dose calculation manual was revised in March 2007. A new Radioactive Liquid Effluent Monitoring System was installed and declared operational March 2007.

The radioactive waste process and liquid effluent monitors were operational, properly calibrated and were being maintained as specified in the offsite dose calculation manual.

The Annual Radiological Environmental Monitoring and the Annual Radioactive Effluent Release Report for calender year 2006 were submitted on a timely basis and met applicable requirements. Radioactivity levels in the sampled media were generally consistent with previous years and were below the NRC required reportable levels. The releases of radioactivity in gaseous and liquid effluents in 2006 did not exceed applicable regulatory limits.

8.0 Exit Meeting

On July 13, 2007, at the conclusion of the site visit, the inspector presented to the plant manager and other licensee staff members the preliminary results of the inspection. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT 1

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel:

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C. Caldwell, Unit 3 Supervisor
J. Chadwick, Senior Radiation Protection Engineer
J. Davis, Radiation Protection Engineer
Z. Easley, Security Supervisor
G. Bierbaum, Design Engineer
V. Jensen, Quality Control Supervisor
G. Mason, Quality Assurance Supervisor
L. Sharp, Director and Plant Manager - Nuclear
L. Pulley, ISFSI Manager
M. Smith, Engineering Manager
D. Sokolsky, Licensing Supervisor
R. Sorensen, Programs Coordinator
R. Willis, Plant Manager Fossil

INSPECTION PROCEDURES USED

IP 36801	Organization, Management, and Cost Controls
IP 37801	Safety Reviews, Design Changes, and Modifications
IP 60801	Spent Fuel Pool Safety
IP 62801	Maintenance and Surveillances
IP 71801	Decommissioning Performance and Status Review
IP 83750	Occupational Radiation Exposure
IP 84750	Radioactive Waste Treatment, Effluent and Environmental Monitoring

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

ALARA	As Low As Reasonably Achievable
CAPR	Corrective Actions to Prevent Recurrence
CEDE	Committed Effective Dose Equivalent
CFH	Certified Fuel Handler
DDE	Deep Dose Equivalent
DSAR	Defueled Safety Analysis Report
ED	Electronic Dosimeter
HBAP	Humboldt Bay Administrative Procedure
IP	Inspection Procedure
LBIE	Licensing Basis Impact Evaluation
NCRs	Non-Conformance Reports
NSOC	Nuclear Safety Oversight Committee
ODCM	Offsite Dose Calculation Manual
PSRC	Plant Staff Review Committee
RLEM	Radioactive Liquid Effluent Monitor
ROR	Radiological Occurrence Report
SAPN	SAP Notification (Problem Report)
SFP	Spent Fuel Pool
SSCs	Structure, System or Components
STPs	Surveillance Test Procedures
TEDE	Total Effective Dose Equivalent
TLDs	Thermo Luminescent Dosimeters

ATTACHMENT 2

PARTIAL LIST OF DOCUMENTS REVIEWED

Audits and Appraisals

- EDMS # 062500018, HBPP Radiation Protection, Radioactive Materials Packaging and Transportation, and Radioactive Waste Processing and Process Control Program Audit report, performed October 10 through 20, 2006, report approved November 10, 2006.

Corrective Action Program Documents (SAPN & Nonconformance Reports)

- Corrective Action Program Report SAPN 1242451, Discrepancy between the ODCM calculations used for setting the Radioactive Liquid Effluent Monitor (RLEM) alarm and the basis for the calculations.

Procedures

- Humboldt Bay Administrative Procedure (HBAP) A-1, HBPP Organization and Staff Qualifications," Appendix 6.4, Revision 25, effective September 7, 2006.
- Humboldt Bay Administrative Procedure HBAP C-3 #2, "Scheduling of Plant and Equipment Tests," Revision 21B, effective April 5, 2007.
- Humboldt Bay Administrative Procedure HBAP C-19, "Licensing Basis Impact Evaluation (LBIE)," Revision 21, effective March 31, 2006.
- Humboldt Bay Administrative Procedure, HBAP C-40, "Maintenance Program," Revision 18, effective July 12, 2007.
- Humboldt Bay Administrative Procedure, HBAP C-40 #1, "Maintenance Rule Compliance," Revision 4, effective January 11, 2007.
- Humboldt Bay Radiation Control Standard HBRCS-2, "Controlling Total Effective Dose Equivalent As Low As Reasonably Achievable," Revision 8, effective March 23, 2007.
- Humboldt Bay Radiation Control Standard RCS-12, "Respiratory Protection Program," Revision 3, effective March 23, 2007.
- Humboldt Bay Radiation Control Procedure RCP-2D, "Evaluation of Internal Deposition of Radioactive Material," Revision 30, effective December 1, 2005.
- Humboldt Bay Radiation Control Procedure RCP-2F, "Radiological Occurrence Reports," Revision 7, effective September 16, 2002.
- Humboldt Bay Radiation Control Procedure RCP-4I, "Occupational Exposure Reporting (NRC Form 5)," Revision 2A, effective May 11, 2006.

Data Sheets

- List of Certified fuel Handlers as of July 12, 2007.
- Attachment 10.1, Surveillance Test Procedure 3.21.4, Radioactive Liquid Effluent Monitor Source Check, Calibration, and Channel Functional Test, Revision 43, performed March 2, 2007.
- Attachment 8.1, Surveillance Test Procedure 3.21.3, Weekly Radioactive Liquid Effluent Monitor Checks, Revision 46, performed March 2, March 6, March 8, March 13, March 19, March 20, March 22, and March 27, 2007.

Reports

- Annual Radioactive Effluent Release Report for 2006, HBL-07-004, March 28, 2007.
- Annual Radiological Environmental Monitoring Report for 2006, HBL-07-009, April 30, 2007.