

Pacific Gas and Electric Company
Humboldt Bay Power Plant
Terry Nelson
Nuclear Director and Plant Manager

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July 31, 2006

PG&E Letter HBL-06-17



Mr. Stuart A. Richards, Deputy Director
Division of Inspection and Regional Support
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Docket No. 50-133, OL-DPR-7
Humboldt Bay Power Plant, Unit 3
Groundwater Protection – Data Collection Questionnaire

Dear Mr. Richards:

The nuclear industry, in conjunction with the Nuclear Energy Institute, has developed a questionnaire to facilitate the collection of groundwater data at commercial nuclear reactor sites. The objective of the questionnaire is to compile baseline information about the current status of site programs for monitoring and protecting groundwater and to share that information with NRC. The completed questionnaire for Humboldt Bay Power Plant, Unit 3 is enclosed.

This submittal contains no new regulatory commitments.

Please contact John Albers at 707-444-0877 if you have questions about the enclosed information.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Nelson'.

TERRY NELSON

Enclosure

cc: USNRC Document Control Desk
Bruce S. Mallett
John B. Hickman
Emilio M. Garcia
Ralph Andersen, Nuclear Energy Institute

NMSSO1

Designated original
per T. Gorham

**Industry Groundwater Protection Initiative
Voluntary Data Collection Questionnaire**

Plant: Humboldt Bay Power Plant

1. *Briefly describe the program and/or methods used for detection of leakage or spills from plant systems, structures, and components that have a potential for an inadvertent release of radioactivity from plant operations into groundwater.*

Since Unit 3 is in SAFSTOR status only limited operations are currently performed. Most systems that contained radioactive liquids during operation have been drained. The spent fuel pool has a leakage monitoring system in place. All tanks containing radioactive liquids are monitored daily for level changes. Unexplained trends in tank levels are investigated. Periodic inspections of the plant are conducted to identify leaks or other abnormal conditions.

2. *Briefly describe the program and/or methods for monitoring onsite groundwater for the presence of radioactivity released from plant operations.*

Groundwater monitoring is performed by sampling five monitoring wells located to detect leakage from the spent fuel pool. Four of the wells are located inside the Unit 3 yard and one of the wells is located outside of Unit 3 on the site property. Three of the five wells are located down gradient of Unit 3. Sampling of these monitoring wells is performed quarterly. The samples are routinely analyzed for gamma emitting isotopes, Gross Alpha/Beta, and Tritium.

Alpha and Beta radioactivity analyses of the saline ground water are less effective than Tritium and gamma radioactivity analyses for monitoring potential spent fuel pool leakage. The Offsite Dose Calculation Manual (ODCM) does not currently require Alpha and Beta radioactivity analyses to be part of the SAFSTOR Radiological Effluent Monitoring Program (REMP). Nevertheless, Alpha and Beta radioactivity analyses are performed as a matter of plant policy.

The high salinity of the groundwater makes the achievement of the required minimum detectable activities (MDAs) problematic for gross Alpha and Beta radioactivity. Because of this problem, starting in the first quarter of 2006, isotopic Am-241 and isotopic Sr-90 analysis of the groundwater wells has been performed for samples that are unable to meet the required MDAs.

Groundwater leakage into the reactor caisson is also routinely sampled. The caisson sump is sampled monthly, and analyzed for gamma emitters and Tritium as a matter of plant policy.

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Routine MDAs are:

Cs-137	18 pCi/L
Surface water H-3	400 pCi/L (ODCM required MDA = 3000 pCi/L)
Other waters H-3	400 pCi/L (ODCM required MDA = 2000 pCi/L)
Gross Beta	4 pCi/L
Gross Alpha	3 pCi/L
Sr-90	5 pCi/L
Am-241	1 pCi/L

Additional non-routine samples were collected in January 2006 from the three wells down gradient of the offgas tunnel. These were analyzed for gamma emitters, gross Alpha and Sr-90. No activity was detected above the detection limits.

3. *If applicable, briefly summarize any occurrences of inadvertent releases of radioactive liquids that had the potential to reach groundwater and have been documented in accordance with 10 CFR 50.75(g).*

Numerous spills of radioactive liquids occurred during plant operations from 1963 to 1976. The following information is from appendix 6.1 of Humboldt Bay Administrative Procedure (HBAP) D-500 "Documenting Site Contamination During SAFSTOR". It is used to document spills in accordance with 10CFR 50.75(g).

<u>Area/Incident:</u>
Acid Tank water spill/Gate 5
Overflow of LRW Concentrator
Overflow of Condensate Tank
Overflow of Condensate Demineralizers
Ultrasonic Water spill
Radwaste Spills
Condensate Pump spill to Yard Drain

Specific details and other known contamination events are documented in HBAP D-500.

In addition, in August of 2005 a leak of contaminated resin occurred in the offgas tunnel. This leak was determined not to have released radioactivity outside of the offgas tunnel.

**Industry Groundwater Protection Initiative
Voluntary Data Collection Questionnaire**

4. *If applicable, briefly summarize the circumstances associated with any onsite or offsite groundwater monitoring result indicating a concentration in groundwater of radioactivity released from plant operations that exceeds the maximum contaminant level (MCL) established by the USEPA for drinking water.*

No concentrations of radioactivity above USEPA MCL's have been detected in onsite groundwater. Offsite groundwater is not routinely monitored due to the nature of site hydrology. This hydrology makes the contamination of offsite groundwater extremely unlikely.

5. *Briefly describe any remediation efforts undertaken or planned to reduce or eliminate levels of radioactivity resulting from plant operations in soil or groundwater onsite or offsite.*

Unit 3 is currently in SAFSTOR status. Decommissioning is scheduled to begin after the ISFSI is constructed and loaded with HBPP fuel. The levels of radioactivity in the soil onsite will be reduced as necessary to meet decommissioning requirements. No concentrations of radioactivity above USEPA MCL's have been detected in onsite groundwater. No radioactivity above background has been detected in soil offsite. Due to the nature of site hydrology, no offsite groundwater contamination is likely to have occurred.