

Pacific Gas and Electric Company

Nuclear Regulatory Services, A10A  
333 Market Street  
P.O. Box 770000  
San Francisco, CA 94177  
415/973-2466  
Fax 415/973-0074

James A. Sexton  
Manager  
Nuclear Regulatory Services

March 30, 1994

PG&E Letter HBL-94-017



U.S. Nuclear Regulatory Commission  
Attn: Kenneth E. Perkins  
1450 Maria Lane  
Walnut Creek, CA 94596

Docket No. 50-133, OL-DPR-7  
Humboldt Bay Power Plant, Unit 3  
Annual Facility Status and Survey Report for 1993

Dear Mr. Perkins:

Enclosed is the Humboldt Bay Power Plant Unit 3 "Annual Facility Status and Survey Report" for 1993. This report is required by Section VII.H.1 of the Humboldt Bay Power Plant Unit 3 Technical Specifications.

Sincerely,

A handwritten signature in cursive script that reads 'James A. Sexton'.

James A. Sexton

cc: Lawrence G. Bell  
Stewart W. Brown  
Document Control Desk  
Humboldt Distribution

Enclosure

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bcc: JPDillon (333/A1073)  
RCParker (HBPP)  
MVSundsmo (333/A1082)

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ENCLOSURE

HUMBOLDT BAY POWER PLANT

UNIT 3

ANNUAL FACILITY STATUS AND SURVEY REPORT

JANUARY 1 THROUGH DECEMBER 31, 1993

## ENCLOSURE

PACIFIC GAS AND ELECTRIC COMPANY  
ANNUAL FACILITY STATUS AND SURVEY REPORT FOR  
HUMBOLDT BAY POWER PLANT UNIT 3, COVERING THE PERIOD  
JANUARY 1 THROUGH DECEMBER 31, 1993

This annual report is required by Section VII.H.1 of the Humboldt Bay Power Plant Unit 3 Technical Specifications. This report describes the status of the facility, and presents the results of facility measurements made during the period January 1 through December 31, 1993.

## A. FACILITY STATUS

The facility remained in SAFSTOR status during the report period.

## B. MEASUREMENT RESULTS

1. Section V.A.4 of the Technical Specifications describes four offsite environmental monitoring stations, and requires [for thermoluminescent dosimetry (TLDs)] that the average and maximum values for the monitoring results be reported annually. These data are reported in Table 1.
2. Section V.A.6 of the Technical Specifications describes onsite environmental monitoring stations. Section V.B.6.b requires that (for TLDs) the average and maximum values for the monitoring results be reported annually. These data are reported in Table 2.
3. Section V.A.6 of the Technical Specifications describes a continuous sampler for water in the discharge canal. Section V.B.6.a requires that (for other than dip samples) the average and maximum values for the monitoring results be reported annually. The results of samples of the discharge canal are summarized in Table 3.
4. Section V.A.6 of the Technical Specifications describes five groundwater monitoring wells constructed in the vicinity of Unit 3. Section V.B.6.c requires that the average and maximum values for the monitoring results (gross alpha, gross beta, total gamma activity, and tritium) be reported annually. These data are reported in Table 4.
5. Section VI.B.1.c of the Technical Specifications requires that the caisson sump water be sampled and analyzed monthly (for total alpha, beta, and gamma activity), and that the average and maximum values for the results be reported annually. These data are reported in Table 5.

TABLE 1

## OFFSITE ENVIRONMENTAL MONITORING STATIONS - 1993

Station Number	TLD Exposure Measurements (mR)			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
1	10.8±0.4	13.5±0.4	11.6±0.6	10.5±0.6
2	11.6±0.4	14.6±0.8	12.4±0.6	11.4±0.6
14	10.5±0.8	13.3±0.7	10.7±0.5	9.9±0.3
25	9.7±0.5	13.1±0.4	11.0±0.4	9.6±0.4

Parameter	Calculated Parameters (mR)			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Average	10.7±0.3	13.6±0.3	11.4±0.3	10.4±0.2
Maximum	11.6±0.4	14.6±0.8	12.4±0.6	11.4±0.6

## Notes:

1. These exposures are reported for a standardized period of 90 days.

TABLE 2

## ONSITE ENVIRONMENTAL MONITORING STATIONS - 1993

Station Number	TLD Exposure Measurements (mR)			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
T1	14.7 ± 2.4	16.9 ± 0.9	14.3 ± 0.7	12.1 ± 0.5
T2	12.4 ± 0.7	13.8 ± 0.7	14.0 ± 0.6	11.3 ± 0.6
T3	12.0 ± 0.4	12.6 ± 0.5	12.6 ± 0.6	10.9 ± 0.3
T4	12.1 ± 0.7	12.8 ± 0.4	13.2 ± 0.5	10.9 ± 0.3
T5	12.2 ± 0.7	12.9 ± 0.4	13.4 ± 1.1	11.1 ± 0.5
T6	12.3 ± 0.5	13.0 ± 0.4	13.3 ± 0.4	11.2 ± 0.4
T7	13.4 ± 0.8	14.4 ± 0.6	15.4 ± 0.9	12.2 ± 0.2
T8	11.7 ± 0.6	12.3 ± 0.7	13.4 ± 0.9	10.9 ± 0.2
T9	12.2 ± 0.7	12.9 ± 0.4	13.8 ± 0.6	11.5 ± 0.4
T10	10.9 ± 0.6	11.8 ± 0.5	13.4 ± 0.5	10.5 ± 0.6
T11	12.3 ± 0.6	12.9 ± 0.3	13.7 ± 0.5	11.0 ± 0.4
T12	11.6 ± 0.7	14.6 ± 0.7	13.5 ± 0.5	11.9 ± 0.2
T13	11.1 ± 0.6	15.4 ± 0.3	13.7 ± 0.6	11.4 ± 0.4
T14	11.8 ± 0.5	16.0 ± 0.8	13.3 ± 0.4	11.6 ± 0.5
T15	11.8 ± 0.6	15.2 ± 0.8	13.8 ± 0.8	12.0 ± 0.6
T16	11.5 ± 0.6	15.5 ± 0.4	13.0 ± 0.5	11.1 ± 0.4
T17	10.8 ± 0.5	13.2 ± 0.5	12.8 ± 0.4	10.9 ± 0.4

Parameter	Calculated Parameters (mR)			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Average	12.1 ± 0.2	13.9 ± 0.1	13.6 ± 0.2	11.4 ± 0.1
Maximum	14.7 ± 2.4	16.9 ± 0.9	15.4 ± 0.9	12.2 ± 0.2

## Notes:

1. These exposures are reported for a standardized period of 90 days.
2. Station T17 is an offsite background station. Its results are not included in the calculated parameters.

TABLE 3

## DISCHARGE CANAL SAMPLE RESULTS

Sample Date	Gamma Activity (pCi/l)	Tritium Activity (pCi/l)
01/07/93	Not Detected	(37 ± 188)
01/14/93	Not Detected	(28 ± 188)
01/21/93	Not Detected	(10 ± 187)
01/28/93	Not Detected	(-86 ± 186)
02/04/93	Not Detected	(-12 ± 185)
02/11/93	Not Detected	(-127 ± 182)
02/18/93	Not Detected	(-82 ± 183)
02/25/93	Not Detected	(-7 ± 186)
03/04/93	Not Detected	(-21 ± 198)
03/11/93	Not Detected	(-199 ± 182)
03/18/93	Not Detected	(-80 ± 188)
03/25/93	Not Detected	(-66 ± 186)
04/01/93	Not Detected	(11 ± 154)
04/08/93	Not Detected	(-77 ± 163)
04/15/93	Not Detected	(-81 ± 143)
04/22/93	Not Detected	(243 ± 170)
04/29/93	Not Detected	(54 ± 159)
05/06/93	Not Detected	(120 ± 194)
05/13/93	Not Detected	(-107 ± 157)
05/20/93	Not Detected	(57 ± 192)
05/27/93	Not Detected	(-68 ± 176)
06/03/93	Not Detected	(-135 ± 189)
06/10/93	Not Detected	(-166 ± 144)
06/17/93	Not Detected	(-187 ± 203)
06/24/93	Not Detected	(-49 ± 180)
07/01/93	Not Detected	(-97 ± 181)
07/08/93	Not Detected	(-146 ± 191)
07/15/93	Not Detected	(-105 ± 178)
07/22/93	Not Detected	(-88 ± 180)
07/29/93	Not Detected	(-1 ± 184)
08/05/93	Not Detected	(-132 ± 185)



TABLE 3 - DISCHARGE CANAL SAMPLE RESULTS - (cont'd)

Sample Date	Gamma Activity (pCi/l)	Tritium Activity (pCi/l)
08/12/93	Not Detected	(-119 ± 189)
08/19/93	Not Detected	(-190 ± 177)
09/16/93	Not Detected	(102 ± 198)
09/23/93	Not Detected	(24 ± 189)
09/30/93	Not Detected	(-68 ± 193)
10/07/93	Not Detected	(16 ± 179)
10/14/93	Not Detected	(-13 ± 179)
10/21/93	Not Detected	(42 ± 180)
10/28/93	Not Detected	(209 ± 192)
11/04/93	Not Detected	(125 ± 187)
11/12/93	Not Detected	(226 ± 191)
11/18/93	Not Detected	(-45 ± 170)
11/24/93	Not Detected	(54 ± 190)
12/02/93	Not Detected	(4 ± 173)
12/09/93	Not Detected	(58 ± 183)
12/16/93	Not Detected	(-61 ± 166)
12/22/93	Not Detected	(52 ± 184)
12/29/93	Not Detected	(148 ± 177)

Calculated Parameters	Gamma Activity (pCi/l)	Tritium Activity (pCi/l)
Average	Note 4	(-20 ± 25)
Maximum	Note 4	(243 ± 170)

## Notes:

1. The sample date is the end of the weekly sample period.
2. Gamma measurements are performed on the original sample, with results corrected to the time of sampling. Naturally occurring isotopes are not reported. The maximum lower limits of detection (LLDs) for Co-60, Cs-134 and Cs-137 are 16, 15, and 18 pCi/l, respectively. Results that are at or below these LLDs are enclosed in parentheses.
3. Tritium analysis is performed on a measured aliquot of distilled sample. The reported values are net measurements above instrumental background. Results that are at or below the typical minimum detectable activity (500 pCi/l) are enclosed in parentheses.
4. Average and maximum values are based only on reported values for composite samples. 'Not Detected' samples are not included.



TABLE 4

## GROUNDWATER MONITORING WELL RESULTS

Monitor Well Number	Sample Date	Alpha Activity (pCi/l)	Beta Activity (pCi/l)	Gamma Activity (pCi/l)	Tritium Activity (pCi/l)
MW-1	02/24/93	(0.4 ± 0.4)	6 ± 6	Not Detected	(318 ± 191)
MW-2	02/24/93	(-1 ± 0)	5 ± 4	Not Detected	(69 ± 183)
MW-4	02/24/93	(0.1 ± 0.4)	(0.1 ± 4)	Not Detected	(63 ± 183)
MW-6	02/24/93	(0 ± 2)	(2 ± 4)	Not Detected	(-72 ± 178)
MW-11	02/24/93	(0.3 ± 0.4)	5 ± 5	Not Detected	1420 ± 127

MW-1	05/25/93	(1 ± 8)	(-3 ± 0)	Not Detected	(157 ± 193)
MW-2	05/25/93	(0 ± 2)	(1 ± 2)	Not Detected	(100 ± 191)
MW-4	05/25/93	(3 ± 5)	(1 ± 3)	Not Detected	(18 ± 188)
MW-6	05/25/93	(-0.6 ± 0)	(0.3 ± 2)	Not Detected	(11 ± 188)
MW-11	05/25/93	4 ± 12	(-3 ± 0)	Not Detected	1330 ± 231

MW-1	08/24/93	(0.8 ± 3)	(-5 ± 0)	Not Detected	(378 ± 208)
MW-2	08/24/93	(1 ± 2)	(-2 ± 0)	Not Detected	(-41 ± 195)
MW-4	08/24/93	5 ± 6	(4 ± 3)	Not Detected	(206 ± 190)
MW-6	08/24/93	(0.7 ± 2)	(-1 ± 0)	Not Detected	(98 ± 193)
MW-11	08/24/93	(3 ± 6)	(-3 ± 0)	Not Detected	1370 ± 236

MW-1	11/24/93	6 ± 11	(0.8 ± 6)	Not Detected	(249 ± 197)
MW-2	11/24/93	(-0.3 ± 0)	(2 ± 2)	Not Detected	(-142 ± 185)
MW-4	11/24/93	(0 ± 18)	10 ± 7	Not Detected	(-72 ± 187)
MW-6	11/24/93	(-0.3 ± 0)	(1 ± 2)	Not Detected	(-126 ± 185)
MW-11	11/24/93	9 ± 20	5 ± 7	Not Detected	1370 ± 233

TABLE 4 - CONTINUED

## GROUNDWATER MONITORING WELL RESULTS

Calculated Parameters (By Monitor Well Number)	Alpha Activity (pCi/l)	Beta Activity (pCi/l)	Gamma Activity (pCi/l)	Tritium Activity (pCi/l)
Average: MW-1	(2.1 ± 3.5)	(-0.3 ± 2.1)	Note 3	(276 ± 99)
Average: MW-2	(-0.1 ± 0.7)	(1.5 ± 1.2)	Note 3	(-4 ± 94)
Average: MW-4	(2.0 ± 4.9)	(3.8 ± 2.3)	Note 3	(54 ± 94)
Average: MW-6	(-0.1 ± 0.7)	(0.6 ± 1.2)	Note 3	(-22 ± 93)
Average: MW-11	4.1 ± 6.0	(1.0 ± 2.2)	Note 3	1373 ± 106

Maximum: MW-1	(6 ± 11)	6 ± 6	Note 3	(378 ± 208)
Maximum: MW-2	(1 ± 2)	5 ± 4	Note 3	(100 ± 191)
Maximum: MW-4	5 ± 6	10 ± 7	Note 3	(206 ± 190)
Maximum: MW-6	(1 ± 2)	(2 ± 4)	Note 3	(98 ± 193)
Maximum: MW-11	9 ± 20	5 ± 5	Note 3	1420 ± 127

## Notes:

1. Reported values are net measurements (above instrumental background). The typical minimum detectable activities for the analyses for gross alpha, gross beta, and tritium are 3, 4, and 500 pCi/l, respectively. Values that are at or below the typical minimum detectable activity are enclosed in parentheses.
2. Gamma measurements are performed on the original sample, with results corrected to the time of sampling. Naturally occurring isotopes are not reported. The maximum lower limits of detection (LLDs) for Co-60, Cs-134, and Cs-137 are 16, 15, and 18 pCi/l, respectively.
3. Average and maximum values are based only on reported values. 'Not Detected' results and 'Less Than' results are not included.

TABLE 5

## CAISSON SUMP WATER SAMPLE RESULTS

Date	Alpha Activity (pCi/l)	Beta Activity (pCi/l)	Gamma Activity (pCi/l)	
			Cs-137	Co-60
01/13/93	(346 ± 574)	(-106 ± 1783)	Not Detected	Not Detected
02/10/93	(0 ± 313)	(-682 ± 1735)	Not Detected	Not Detected
03/10/93	(-217 ± 255)	(715 ± 1783)	Not Detected	Not Detected
04/07/93	(118 ± 589)	(107 ± 1782)	Not Detected	Not Detected
05/05/93	(-107 ± 328)	(-924 ± 1738)	Not Detected	Not Detected
06/02/93	(217 ± 394)	(692 ± 1774)	Not Detected	Not Detected
06/29/93	(214 ± 328)	(581 ± 1731)	Not Detected	Not Detected
07/28/93	(-108 ± 255)	(1085 ± 1772)	Not Detected	Not Detected
08/25/93	(-106 ± 324)	(1184 ± 1745)	Not Detected	Not Detected
09/22/93	(0 ± 262)	(1403 ± 1813)	Not Detected	Not Detected
10/20/93	(129 ± 394)	(-518 ± 1810)	Not Detected	(8.8 ± 4.6)
11/17/93	(-265 ± 406)	(164 ± 1845)	Not Detected	Not Detected
12/15/93	(54 ± 273)	(-370 ± 1742)	Not Detected	Not Detected

Calculated Parameters	Alpha Activity (pCi/l)	Beta Activity (pCi/l)	Gamma Activity (pCi/l)	
			Cs-137	Co-60
Average	(21 ± 104)	(256 ± 492)	Note 3	(8.8 ± 4.6)
Maximum	(346 ± 574)	(1403 ± 1813)	Note 3	(8.8 ± 4.6)

## Notes:

- Gamma activity measurements are performed on the original sample, with results corrected to the time of sampling. Naturally occurring isotopes are not reported. The typical gamma activity lower limit of detection (LLD) is approximately 10 pCi/l for Cs-137 and approximately 10 pCi/l for Co-60. Results that are at or below these values are enclosed in parentheses.
- Alpha/Beta analysis is performed on a measured aliquot of sample. The typical LLD for the analysis is approximately 500 pCi/l and 4000 pCi/l for Alpha and Beta, respectively. Results that are at or below these values are indicated in parentheses.
- Average and maximum values are based only on reported values. 'Not Detected' results and 'Less Than' results are not included.