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PG&E Letter HBL-14-009

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

10 CFR 50.75 (f)
10 CFR 50.82 (8) (v)
10 CFR 50.82 (8) (vii)

Docket No. 50-133, DPR-7
Humboldt Bay Power Plant, Unit 3
Decommissioning Funding Report for Humboldt Bay Power Plant, Unit 3

Dear Commissioners and Staff:

Pacific Gas and Electric Company (PG&E) is submitting its decommissioning funding report for Humboldt Bay Power Plant (HBPP), Unit 3, pursuant to the requirements of 10 CFR 50.75 (f), 10 CFR 50.82 (8) (v), and 10 CFR 50.82 (8) (vii).

Humboldt Bay Unit 3

At the end of calendar year 2013, the market value of the HBPP Unit 3 (220 MWt) decommissioning trust funds was \$191.5 million. PG&E estimates it will need to collect an additional \$384.1 million over four years, beginning in 2014, based on a site-specific decommissioning cost estimate prepared by PG&E staff and approved by the California Public Utilities Commission's Final Decision D.14-02-24 Nuclear Decommissioning Cost Triennial Proceeding (NDCTP). The NDCTP application is based on actual bids for remaining HBPP civil work scope, costs for removal of underground reactor caisson, cost associated with a delay in the Department of Energy's acceptance of site-stored spent fuel, cost to remediate site radioactivity to nuclear resident farmer criteria, and updated remaining decommissioning costs based on actual past HBPP decommissioning data versus industry estimates.

The market value of the HBPP trust is lower than the minimum amount of the NRC decommissioning estimate of \$714.3 million (2014 dollars) that was calculated pursuant to the requirements specified in 10 CFR 50.75(c), which is based on a minimum 1200 MWt plant. This is due to \$363.0 million having been spent on NRC decommissioning activities through December 2013, and an estimate to complete of \$520.6 million for the NRC radiological scope.

PG&E is confident the HBPP trust, with the noted additional contributions, will be sufficient to ensure successful decommissioning and maintaining the spent fuel in an independent spent fuel storage installation (ISFSI) at HBPP until 2025, based on the December 2012 site-specific decommissioning cost estimate prepared by PG&E staff.

FOME20
FSME



Supporting Cost Estimates

Based on a December 2012 site-specific cost estimate prepared by PG&E staff, PG&E estimates that the NRC decommissioning costs are approximately \$883.6 million (including \$363.0 million disbursed from the Trust(s) through December 2013 and \$520.6 million future radiological removal costs) for HBPP, Unit 3, in 2014 dollars. These costs do not include site restoration (\$.8 million), or spent fuel management until 2025 (\$144.9 million). To assure that sufficient funds will be available for decommissioning, PG&E established external sinking trust fund accounts for HBPP, Unit 3.

Supporting Enclosures

Enclosures 1 through 4 provide supporting documentation for this report.

Enclosure 1 provides decommissioning funding status information in a format suggested by Nuclear Energy Institute (NEI) and the NRC.

Enclosure 2 provides information on the escalation of the required decommissioning funding amounts to 2014 dollars. As required by 10 CFR 50.75(c)(2), and using NUREG-1577, "Standard Review Plan on Power Reactor Licensee Financial Qualifications and Decommissioning Funding Assurance," Revision 1, and NUREG-1307, "Report on Waste Burial Charges," Revision 15, the information includes escalation factors for energy, labor, and waste burial costs.

Enclosure 3 is a cash flow of the total decommissioning of HBPP that identifies the monies for NRC scope (removal of radiological contamination), site restoration (including the non-radiological work), and the spent fuel management.

Enclosure 4 contains the Variance of the 2013 forecast of \$164,897,911 as submitted in HBL-13-003, "Decommissioning Funding Report for Humboldt Bay Power Plant, Unit 3," dated April 1, 2013, to the actual expenditures for 2013 of \$98,615,488.

The PG&E decommissioning cost estimate report prepared for the 2012 NDCTP filing for HBPP, Unit 3, which provides cost estimates for the decommissioning of the nuclear, non-nuclear facilities, and spent fuel management, including operation of the ISFSI in 2011 dollars is not included in this submittal. This document was included in the PG&E Letter HBL-13-003.

PG&E makes no new or revised regulatory commitments (as defined by NEI 99-04) in this letter. Should you have any questions, please contact Mr. Bob Kapus at (707) 444-0810.



Loren D. Sharp, Director and Plant Manager – Humboldt Bay Power Plant Nuclear, has been delegated the authority of Edward D. Halpin, Senior Vice President and Chief Nuclear Officer, to sign submittals to the NRC from Humboldt Bay Power Plant.

Sincerely,

Ed Halpin
Senior Vice President and Chief Nuclear Officer

Enclosures

cc/enc: Marc Dapas
John B. Hickman
INPO
HBPP Humboldt Distribution

**NRC Decommissioning Funding Status Report
Humboldt Bay Power Plant - Unit 3 (220 MWt)**

**NRC Decommissioning Funding Status Report
Humboldt Bay Power Plant - Unit 3 (220 MWt)**

As provided in 10 CFR 50.75(f)(1), each power reactor licensee is required to report to the NRC on a calendar year basis, beginning March 31, 1999, and annually thereafter, on the status of its decommissioning funding for each reactor that it owns and has already closed.

On December 12, 2012, Pacific Gas & Electric (PG&E) submitted the 2012 Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) to the California Public Utilities Commission (CPUC) for the remaining scope of work to complete the decommissioning of the radiological scope, the non-radiological scope, and spent fuel management of Humboldt Bay Power Plant (HBPP), Unit 3, in the amount of \$727.6 million in 2011 dollars. On February 27, 2014, the CPUC issued Phase 1 Decision D.14-02-24 that approved the remaining scope of work however reduced the funding by \$47.2 million in 2011 dollars. There was no specificity identified by the CPUC of the scope related to this \$47.2 million reduction, this funding was not a disallowance, and therefore can be recovered in PG&E's 2015 NDCTP filing if found to be prudent. The collection of funding (Item 3) is based on the reduced remaining funding of \$680.4 million per the CPUC Decision, using the escalation and rate of return assumptions included in the December 12, 2012, NDCTP filing. PG&E anticipates the Phase 2 decision from the CPUC in late 2014 that will include the escalation and rate of return factors to be used in the financial collection analysis. The Phase 2 decision may have an impact in the values shown in Items 3, 4, and 8, which will be reflected in the 2015 Assurance of Funding letter.

\$ In Millions

1. The minimum decommissioning fund estimate, pursuant to 10 CFR 50.75 (b) and (c).¹

January 2014 dollars

\$ 714.3

(HBPP is a shutdown unit with a Site Specific Cost Study; Therefore, the minimum decommissioning fund estimate is based on the Site Specific Cost Study shown in item 8 of this enclosure.)

2. The amount accumulated at the end of the calendar year preceding the date of the report for items included in 10 CFR 50.75 (b) and (c). (Alternatively, the total amount accumulated at the end of the calendar year preceding the date of the report can be reported here

¹ * The NRC formulas in section 10CFR50.75(c) include only those decommissioning costs incurred by licensees to remove a facility or site safely from service and reduce residual radioactivity to levels that permit: (1) release of the property for unrestricted use and termination of the license; or (2) release of the property under restricted conditions and termination of the license. The cost of dismantling or demolishing non-radiological systems and structures is not included in the NRC decommissioning cost estimates. The costs of managing and storing spent fuel on site until transfers to DOE are not included in the cost formulas.

if the cover letter transmitting the report provides the total estimate and indicates what portion of that estimate is for items not included in 10 CFR 50.75 (b) and (c)).

Market Value (December 2013 dollars) \$ 191.5

3. A schedule of the annual amounts remaining to be collected for items in 10 CFR 50.75 (b) and (c). (Alternatively, the annual amounts remaining to be collected can include items beyond those required in 10 CFR 50.75 (b) and (c), if the cover letter transmitting the report provides a total cost estimate and indicates what portion of that estimate is for items that are not included in 10 CFR 50.75 (b) and (c).

Amount remaining \$ 384.1
Number of years to collect 2014-2017 4 years
Annual amount to be collected \$96.0

4. The assumptions used regarding escalation in decommissioning cost, rates of earnings on decommissioning funds (assumes trust will be gradually converted to a more conservative, all fixed income portfolio after 2010), and rates of other factors used in funding projections (all values below are from the 2012 NDCTP filing).

Escalation in decommissioning costs Rate of Return 2.6%

5. Any contracts upon which the licensee is relying pursuant to 10 CFR 50.75(e)(1)(v); None
6. Any modifications to a licensee's current method providing financial assurance occurring since the last submitted report. None
7. Any material changes to trust agreements. None
8. CPUC Submittal in 2014 Dollars in Millions:

Total Project (Decommission 2014)	\$ 1,029.3
Scope Excluded from NRC calculations	\$ 0.8
Scope of ISFSI from Licensing to Decommissioning in 2025	\$ 144.9
Scope Decommissioned and Disbursed from Trust(s)	\$ 363.0
Total NRC Decommissioning Remaining Scope	\$ 520.6

2013 Decommissioning Estimate
(page 1)

Composite Escalation
(page 2)

Development of E Component
(page 3 - 7)

Development of L Component
(page 8 - 11)

Development of B Component
(page 12)

Nuclear Regulatory Commission
 Estimate of Decommission Costs for Boiling Water Reactor (BWR)
 In 2014

HBPP
 BWR
 (\$ in millions)
 Jan 1986 Estimate \$114.80

	(Table 2.1 in NUREG 1307 Rev 14
Escalated to 1999	128.9 has no value for 1999 Burial)
Escalated to 2000	400.2 (\$360.9 in 2000 Submittal)
Escalated to 2001	354.1 (\$425.3 in 2001 Submittal)
Escalated to 2002	357.4 (\$445.6 in 2002 Submittal)
Escalated to 2003	373.8 (\$430.1 in 2003 Submittal)
Escalated to 2004	388.0 (\$439.6 in 2004 Submittal)
Escalated to 2005	416.8 (\$453.2 in 2005 Submittal)
Escalated to 2006	519.2 (\$494.3 in 2006 Submittal)
Escalated to 2007	538.3 (\$548.6 in 2007 Submittal)
Escalated to 2008	564.4 (\$590.9 in 2008 Submittal)
Escalated to 2009	574.6 (\$573.8 in 2009 Submittal)
Escalated to 2010	594.5 (\$596.6 in 2010 Submittal)
Escalated to 2011	626.5 (\$619.0 in 2011 Submittal)
Escalated to 2012	659.9 (\$645.4 in 2012 Submittal)
Escalated to 2013	687.1 (\$687.2 in 2013 Submittal)
Escalated to 2014	714.3

Jan 1986 based on 10 CFR 50.75 (c) Table of minimum amounts
 BWR based on minimum 1200 MWt = $(\$104 + (.009 \times \text{MWt}))$ million per unit
 where BWR less than 1200 MWt use P=1200 MWt, HBPP 220 MWt

Composite Escalation

Enclosure 2
PG&E Letter HBL-14-009

Calculating Overall Escalation Rate

BWR	Dec-05	Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13	Weight (1)
L (Labor)	2.0600	2.1218	2.1939	2.2536	2.2784	2.3175	2.3711	2.4061	2.4638	0.65
E (Energy)	1.9106	1.9808	2.4513	1.8323	2.0402	2.3945	2.7719	2.8265	2.7651	0.13
B (Burial)	13.3331	13.8744	14.4164	15.0096	15.6028	16.5439	17.4856	18.4273	19.3690	0.22

(1) from NUREG 1307 Revision 15, Report on Waste Burial Charges, Section 2 Summary, Page 3 ... where A, B, and C are the fractions of the total 1986 dollar costs that are attributable to labor (0.65), energy (0.13), and burial (0.22), respectively, and sum to 1.0.

BWR

Combined Escalation Rate for:

Dec-06	Dec-07	Dec-08	Dec-09	Dec-10	Dec-11	Dec-12	Dec-13
4.6891	4.9163	5.0052	5.1788	5.4573	5.7484	5.9854	6.2221

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.2

Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/04/14) and WPU0543 Industrial Electric Power (as of 03/04/14)

	PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils	REBASED TO 1986 = 100		Energy Escalation Factor (E) for BWR (Humboldt)
			PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power BWR wt = 0.54	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils BWR wt = 0.46	
Dec-99	126.5	72.9	1.0000	1.0000	1.0000
Jan-00	126.8	75.3	1.0024	1.0329	1.0164
Feb-00	126.7	87.9	1.0016	1.2058	1.0955
Mar-00	126.7	89.7	1.0016	1.2305	1.1069
Apr-00	126.8	83.1	1.0024	1.1399	1.0656
May-00	128.6	82.9	1.0166	1.1372	1.0721
Jun-00	133.6	86.2	1.0561	1.1824	1.1142
Jul-00	136.2	88.7	1.0767	1.2167	1.1411
Aug-00	137.4	91.6	1.0862	1.2565	1.1645
Sep-00	137.8	110.1	1.0893	1.5103	1.2830
Oct-00	134.1	108.6	1.0601	1.4897	1.2577
Nov-00	130.9	108.4	1.0348	1.4870	1.2428
Dec-00	132.7	100.6	1.0490	1.3800	1.2013
Jan-01	136.4	96.1	1.0783	1.3182	1.1887
Feb-01	136.4	91.6	1.0783	1.2565	1.1603
Mar-01	136.5	83.1	1.0791	1.1399	1.1070
Apr-01	135.1	86.2	1.0680	1.1824	1.1206
May-01	136.2	94.2	1.0767	1.2922	1.1758
Jun-01	148.4	90.2	1.1731	1.2373	1.2026
Jul-01	149.5	81.3	1.1818	1.1152	1.1512
Aug-01	148.9	83.2	1.1771	1.1413	1.1606
Sep-01	148.2	93	1.1715	1.2757	1.2195
Oct-01	143.8	76.8	1.1368	1.0535	1.0985
Nov-01	137.3	70.5	1.0854	0.9671	1.0310
Dec-01	136.9	56.6	1.0822	0.7764	0.9415
Jan-02	136.3	58.3	1.0775	0.7997	0.9497
Feb-02	135.4	59.6	1.0704	0.8176	0.9541
Mar-02	135.7	69.1	1.0727	0.9479	1.0153
Apr-02	135.4	76.4	1.0704	1.0480	1.0601
May-02	137.9	75	1.0901	1.0288	1.0619
Jun-02	143.6	71.4	1.1352	0.9794	1.0635
Jul-02	144.9	75.5	1.1455	1.0357	1.0950
Aug-02	145.0	77.9	1.1462	1.0686	1.1105
Sep-02	145.8	89.5	1.1526	1.2277	1.1871
Oct-02	140.0	95.1	1.1067	1.3045	1.1977
Nov-02	139.5	82.8	1.1028	1.1358	1.1180
Dec-02	139.6	84.6	1.1036	1.1605	1.1297
Jan-03	140.3	95.7	1.1091	1.3128	1.2028
Feb-03	140.6	120.4	1.1115	1.6516	1.3599

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.2

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			PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power BWR wt = 0.54	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils BWR wt = 0.46	
Mar-03	143.3	128.9	1.1328	1.7682	1.4251
Apr-03	144.3	98.3	1.1407	1.3484	1.2363
May-03	145.1	85.5	1.1470	1.1728	1.1589
Jun-03	148.3	87.2	1.1723	1.1962	1.1833
Jul-03	151.6	90.1	1.1984	1.2359	1.2157
Aug-03	151.3	94.1	1.1960	1.2908	1.2396
Sep-03	152.0	88.2	1.2016	1.2099	1.2054
Oct-03	147.4	97.8	1.1652	1.3416	1.2463
Nov-03	142.7	93.0	1.1281	1.2757	1.1960
Dec-03	142.9	95.8	1.1296	1.3141	1.2145
Jan-04	143.1	106.8	1.1312	1.4650	1.2848
Feb-04	143.1	100.8	1.1312	1.3827	1.2469
Mar-04	143.1	107.8	1.1312	1.4787	1.2911
Apr-04	143.1	115.2	1.1312	1.5802	1.3378
May-04	144.2	116	1.1399	1.5912	1.3475
Jun-04	152.4	111.5	1.2047	1.5295	1.3541
Jul-04	152.2	119.3	1.2032	1.6365	1.4025
Aug-04	154.0	131.1	1.2174	1.7984	1.4846
Sep-04	154.0	136.8	1.2174	1.8765	1.5206
Oct-04	145.8	161.7	1.1526	2.2181	1.6427
Nov-04	144.9	153.6	1.1455	2.1070	1.5878
Dec-04	146.2	133.8	1.1557	1.8354	1.4684
Jan-05	148.9	138.5	1.1771	1.8999	1.5096
Feb-05	148.0	146	1.1700	2.0027	1.5530
Mar-05	148.1	169.4	1.1708	2.3237	1.7011
Apr-05	148.7	170.9	1.1755	2.3443	1.7131
May-05	151.1	165.3	1.1945	2.2675	1.6881
Jun-05	159.7	180.6	1.2625	2.4774	1.8213
Jul-05	162.1	186.2	1.2814	2.5542	1.8669
Aug-05	162.5	194.5	1.2846	2.6680	1.9210
Sep-05	162.8	209.9	1.2870	2.8793	2.0194
Oct-05	159.5	252.0	1.2609	3.4568	2.2710
Nov-05	161.1	199.1	1.2735	2.7311	1.9440
Dec-05	161.4	193.6	1.2759	2.6557	1.9106
Jan-06	167.0	191.8	1.3202	2.6310	1.9231
Feb-06	168.6	190.0	1.3328	2.6063	1.9186
Mar-06	167.4	199.2	1.3233	2.7325	1.9715
Apr-06	169.6	221.9	1.3407	3.0439	2.1242
May-06	170.8	231.4	1.3502	3.1742	2.1892
Jun-06	181.2	238.1	1.4324	3.2661	2.2759

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.2

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			PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power BWR wt = 0.54	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils BWR wt = 0.46	
Jul-06	181.9	231.6	1.4379	3.1770	2.2379
Aug-06	180.2	241.4	1.4245	3.3114	2.2925
Sep-06	181.0	203.1	1.4308	2.7860	2.0542
Oct-06	171.2	198.1	1.3534	2.7174	1.9808
Nov-06	167.2	198.2	1.3217	2.7188	1.9644
Dec-06	167.8	200.4	1.3265	2.7490	1.9808
Jan-07	171.9	180.0	1.3589	2.4691	1.8696
Feb-07	175.7	191.5	1.3889	2.6269	1.9584
Mar-07	172.1	215.1	1.3605	2.9506	2.0919
Apr-07	173.1	231.8	1.3684	3.1797	2.2016
May-07	179.2	225.3	1.4166	3.0905	2.1866
Jun-07	186.7	222.4	1.4759	3.0508	2.2003
Jul-07	187.0	237.8	1.4783	3.2620	2.2988
Aug-07	187.6	225.5	1.4830	3.0933	2.2237
Sep-07	188.4	238.9	1.4893	3.2771	2.3117
Oct-07	182.7	243.3	1.4443	3.3374	2.3151
Nov-07	180.3	288.2	1.4253	3.9534	2.5882
Dec-07	180.0	266.7	1.4229	3.6584	2.4513
Jan-08	181.9	273.8	1.4379	3.7558	2.5042
Feb-08	180.0	280.2	1.4229	3.8436	2.5364
Mar-08	183.1	339.6	1.4474	4.6584	2.9245
Apr-08	185.2	352.5	1.4640	4.8354	3.0149
May-08	189.5	384.9	1.4980	5.2798	3.2377
Jun-08	191.9	410.5	1.5170	5.6310	3.4094
Jul-08	196.1	423.8	1.5502	5.8134	3.5113
Aug-08	197.1	343.9	1.5581	4.7174	3.0114
Sep-08	195.9	335.1	1.5486	4.5967	2.9507
Oct-08	193.0	279.0	1.5257	3.8272	2.5844
Nov-08	187.7	218.2	1.4838	2.9931	2.1781
Dec-08	188.3	163.0	1.4885	2.2359	1.8323
Jan-09	190.3	159.8	1.5043	2.1920	1.8207
Feb-09	190.3	145.6	1.5043	1.9973	1.7311
Mar-09	187.6	136.8	1.4830	1.8765	1.6640
Apr-09	186.9	159.9	1.4775	2.1934	1.8068
May-09	190.5	158.6	1.5059	2.1756	1.8140
Jun-09	193.3	183.7	1.5281	2.5199	1.9843
Jul-09	196.2	165.2	1.5510	2.2661	1.8799
Aug-09	194.7	196.1	1.5391	2.6900	2.0685
Sep-09	194.9	186.6	1.5407	2.5597	2.0094
Oct-09	189.9	193.3	1.5012	2.6516	2.0304

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.2

Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/04/14) and WPU0543 Industrial Electric Power (as of 03/04/14)

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			PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power BWR wt = 0.54	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils BWR wt = 0.46	
Nov-09	186.0	207.8	1.4704	2.8505	2.1052
Dec-09	186.0	197.5	1.4704	2.7092	2.0402
Jan-10	186.3	220.7	1.4727	3.0274	2.1879
Feb-10	186.1	200.2	1.4711	2.7462	2.0577
Mar-10	189.0	217.0	1.4941	2.9767	2.1761
Apr-10	188.8	231.5	1.4925	3.1756	2.2667
May-10	192.0	226.0	1.5178	3.1001	2.2457
Jun-10	197.8	212.4	1.5636	2.9136	2.1846
Jul-10	199.8	209.3	1.5794	2.8711	2.1736
Aug-10	200.8	221.4	1.5874	3.0370	2.2542
Sep-10	200.0	220.0	1.5810	3.0178	2.2420
Oct-10	194.6	235.8	1.5383	3.2346	2.3186
Nov-10	190.9	245.3	1.5091	3.3649	2.3628
Dec-10	191.4	250.0	1.5130	3.4294	2.3945
Jan-11	193.1	260.4	1.5265	3.5720	2.4674
Feb-11	194.4	278.8	1.5368	3.8244	2.5891
Mar-11	195.0	307.5	1.5415	4.2181	2.7727
Apr-11	194.1	325.1	1.5344	4.4595	2.8800
May-11	196.9	315.1	1.5565	4.3224	2.8288
Jun-11	205.7	316.9	1.6261	4.3471	2.8777
Jul-11	215.3	311.5	1.7020	4.2730	2.8846
Aug-11	216.6	296.9	1.7123	4.0727	2.7981
Sep-11	215.8	306.5	1.7059	4.2044	2.8552
Oct-11	206.6	299.6	1.6332	4.1097	2.7724
Nov-11	204.0	322.7	1.6126	4.4266	2.9071
Dec-11	204.4	301.0	1.6158	4.1289	2.7719
Jan-12	201.1	308.8	1.5897	4.2359	2.8070
Feb-12	200.3	316.5	1.5834	4.3416	2.8522
Mar-12	199.8	330.8	1.5794	4.5377	2.9403
Apr-12	198.1	327.1	1.5660	4.4870	2.9096
May-12	201.5	315.6	1.5929	4.3292	2.8516
Jun-12	207.7	284.6	1.6419	3.9040	2.6825
Jul-12	221.5	287.9	1.7510	3.9492	2.7622
Aug-12	222.1	313.4	1.7557	4.2990	2.9257
Sep-12	222.8	330.4	1.7613	4.5322	3.0359
Oct-12	214.1	334.1	1.6925	4.5830	3.0221
Nov-12	212.3	311.6	1.6783	4.2743	2.8725
Dec-12	213.8	303.3	1.6901	4.1605	2.8265
Jan-13	199.2	303.6	1.5747	4.1646	2.7661
Feb-13	199.4	327.7	1.5763	4.4952	2.9190

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.2

Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/04/14) and WPU0543 Industrial Electric Power (as of 03/04/14)

	PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils	REBASED TO 1986 = 100		Energy Escalation Factor (E) for BWR (Humboldt)
			PPI for Fuels & Related Products (2000 = 100) (P) = Industrial Energy Power BWR wt = 0.54	PPI for Light Fuel Oils (2000=100) (F) = Light Fuel Oils BWR wt = 0.46	
Mar-13	199.0	308.7	1.5731	4.2346	2.7974
Apr-13	198.8	303.9	1.5715	4.1687	2.7662
May-13	203.5	296.4	1.6087	4.0658	2.7390
Jun-13	211.9	294.9	1.6751	4.0453	2.7654
Jul-13	211.4	300.4	1.6711	4.1207	2.7979
Aug-13	210.4	307.4	1.6632	4.2167	2.8378
Sep-13	210.3	315.3	1.6625	4.3251	2.8873
Oct-13	203.0	306.3	1.6047	4.2016	2.7993
Nov-13	199.9	294.8	1.5802	4.0439	2.7135
Dec-13	200.3	302.7	1.5834	4.1523	2.7651

Oct 13 through Dec 13 are Preliminary Values from PPI Indices.

Based on Base Year 2000 being the indice values Dec 1999, January 2014 base will be December 2013.

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.1

Using Regional Indices SERIES ID: CIU2010000002401 (as of 03/04/14)

Note 1: The Base Labor factor was re-indexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (2005=100)	Labor Escalation Factor
Dec-05	100	2.06000
Jan-06		
Feb-06		
Mar-06	100.6	2.07236
Apr-06		
May-06		
Jun-06	101.8	2.09708
Jul-06		
Aug-06		
Sep-06	102.5	2.11150
Oct-06		
Nov-06		
Dec-06	103	2.12180
Jan-07		
Feb-07		
Mar-07	104.2	2.14652
Apr-07		
May-07		
Jun-07	104.9	2.16094
Jul-07		
Aug-07		
Sep-07	105.7	2.17742
Oct-07		
Nov-07		
Dec-07	106.5	2.19390
Jan-08		
Feb-08		
Mar-08	107.8	2.22068

Development of L Component

Enclosure 2
PG&E Letter HBL-14-009

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.1

Using Regional Indices SERIES ID: CIU2010000002401 (as of 03/04/14)

Note 1: The Base Labor factor was re-indexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (2005=100)	Labor Escalation Factor
Dec-05	100	2.06000
Apr-08		
May-08		
Jun-08	108.4	2.23304
Jul-08		
Aug-08		
Sep-08	109.3	2.25158
Oct-08		
Nov-08		
Dec-08	109.4	2.25364
Jan-09		
Feb-09		
Mar-09	109.9	2.26394
Apr-09		
May-09		
Jun-09	110	2.26600
Jul-09		
Aug-09		
Sep-09	110.3	2.27218
Oct-09		
Nov-09		
Dec-09	110.6	2.27836
Jan-10		
Feb-10		
Mar-10	111.3	2.29278
Apr-10		
May-10		
Jun-10	111.7	2.30102

Development of L Component

Enclosure 2
PG&E Letter HBL-14-009

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.1

Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/04/14)

Note 1: The Base Labor factor was re-indexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (2005=100)	Labor Escalation Factor
Dec-05	100	2.06000
Jul-10		
Aug-10		
Sep-10	112.3	2.31338
Oct-10	110	
Nov-10		
Dec-10	112.5	2.31750
Jan-11		
Feb-11		
Mar-11	113.5	2.33810
Apr-11		
May-11		
Jun-11	114.3	2.35458
Jul-11		
Aug-11		
Sep-11	114.6	2.36076
Oct-11		
Nov-11		
Dec-11	115.1	2.37106
Jan-12		
Feb-12		
Mar-12	115.7	2.38342
Apr-12		
May-12		
Jun-12	116.3	2.39578
Jul-12		
Aug-12		
Sep-12	116.8	2.40608

Development of L Component

Enclosure 2
PG&E Letter HBL-14-009

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 15, Section 3.1

Using Regional Indices SERIES ID: CIU20100000002401 (as of 03/04/14)

Note 1: The Base Labor factor was re-indexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (2005=100)	Labor Escalation Factor
Dec-05	100	2.06000
Oct-12		
Nov-12		
Dec-12	116.8	2.40608
Jan-13		
Feb-13		
Mar-13	117.6	2.42256
Apr-13		
May-13		
Jun-13	118.5	2.44110
Jul-13		
Aug-13		
Sep-13	119.2	2.45552
Oct-13		
Nov-13		
Dec-13	119.6	2.46376

Development of Burial Escalation

Developed from NUREG-1307 Revision 15

Table 2.1 "VALUES OF B SUB-X AS A FUNCTION OF LLW BURIAL SITE, WASTE VENDOR, AND YEAR" (Summary for non-Atlantic Compact)

Revised to Bx Values for Generic LLW Disposal Site are assumed to be the same as that provided for the Atlantic Compact, for lack of a better alternative at this time.

Revised to Bx Values for Generic LLW Disposal Site are assumed to be Combination of Compact-Affiliated and Non-Compact Facility for HBPP.

	BWR Burial Costs (South Carolina)	BWR Restated to 1986 = 100
1986	1.561	1.0000
1987		
1988	1.831	1.1730
1989		
1990		
1991	2.361	1.5125
1992		
1993	9.434	6.0436
1994	9.794	6.2742
1995	10.42	6.6752
1996	10.379	6.6489
1997	13.837	8.8642
1998	13.948	8.9353
1999		
2000	16.244	10.4061
2001	16.474	10.5535
2002	16.705	10.7015
2003	17.337	11.1063
2004	17.970	11.5119
2005	19.391	12.4222
2006	20.813	13.3331
2007	21.658	13.8744
2008	22.504	14.4164
2009	23.430	15.0096
2010	24.356	15.6028
2011	25.825	16.5439
2012	27.295	17.4856
2013	28.765	18.4273
2014	30.235	19.3690

Table 2.1 Note (e) Bx values for the generic site are assumed to be the same as that provided for the Atlantic Compact for lack of a better alternative at this time.

Note (f) Effective with NUREG-1307, Revision 8 (Ref.3) an alternative disposal option was introduced in which the bulk of the LLW is assumed to be dispositioned by waste vendors and/or disposed of at a non-compact disposal facility.

Note (g) Effective with NUREG1307, Revision 15, the nomenclature for the two disposal options, referred to as "Direct Disposal" and "Direct Disposal with Vendors" in previous revisions of NUREG-1307, is changed to "Compact-Affiliated Disposal Facility Only" and "Combination of Compact-Affiliated and Non-Compact Disposal Facilities" to better describe the options.

2013 has no information in NUREG-1307 Rev 15. 2013 is an estimate that is calculated by applying the average % change between 2010 and 2012 and adding to the 2012 base.

2014 has no information in NUREG-1307 Rev 15. 2014 is an estimate that is calculated by applying the average % change between 2010 and 2012 and adding to the 2013 base.

Enclosure 3
PG&E Letter HBL-14-009

**Decommissioning Cash Flow
Humboldt Bay Power Plant - Unit 3 (220 MWt)**

**Humboldt Bay Power Plant
Decommissioning Cash Flow (Note 1)**

2014 Dollars

Year	NRC	NON - NRC	SPENT FUEL MANAGEMENT	TOTAL	Cumulative Decommission Estimate	
1996	\$1,678,452			\$1,678,452	\$1,678,452	
1997	\$8,663,216			\$8,663,216	\$10,341,668	
1998	\$5,573,757		\$344,408	\$5,918,165	\$16,259,833	
1999	\$723,490		\$2,281,454	\$3,004,944	\$19,264,777	
2000	\$85,241		\$2,736,091	\$2,821,332	\$22,086,109	
2001	\$89,543		\$398,012	\$487,555	\$22,573,664	
2002	\$994,127		\$113,704	\$1,107,831	\$23,681,495	
2003	\$494,838		\$2,539,476	\$3,034,314	\$26,715,809	
2004	\$491,070		\$1,444,628	\$1,935,698	\$28,651,507	
2005	\$161,506		\$1,671,769	\$1,833,275	\$30,484,782	
2006	\$1,073,612		\$3,546,617	\$4,620,229	\$35,105,011	
2007	\$4,474,247		\$9,240,172	\$13,714,419	\$48,819,430	
2008	\$12,590,383		\$28,485,988	\$41,076,371	\$89,895,801	
2009	\$32,901,391		\$3,179,956	\$36,081,347	\$125,977,148	
2010	\$56,957,494		\$5,734,776	\$62,692,270	\$188,669,418	
2011	\$60,585,531		\$5,495,157	\$66,080,688	\$254,750,106	
2012	\$81,508,992		\$4,577,577	\$86,086,569	\$340,836,675	
2013	\$93,994,101		\$4,621,387	\$98,615,488	\$439,452,163	\$439,452,163 Actual
2014	\$156,578,721	\$379,500	\$4,942,502	\$161,900,723	\$601,352,886	\$628,635,591 Actual + Equivalent Liquidation
2015	\$99,215,233	\$329,511	\$4,942,502	\$104,487,245	\$705,840,131	\$630,996,877 Actual + Market Value
2016	\$90,055,942	\$109,837	\$5,221,191	\$95,386,971	\$801,227,101	
2017	\$60,976,426		\$5,221,191	\$66,197,617	\$867,424,718	
2018	\$57,351,712		\$5,192,759	\$62,544,471	\$929,969,189	
2019	\$55,361,813		\$5,192,959	\$60,554,772	\$990,523,961	
2020	\$1,085,095		\$5,427,347	\$6,512,442	\$997,036,403	
2021			\$5,245,249	\$5,245,249	\$1,002,281,652	
2022			\$5,134,176	\$5,134,176	\$1,007,415,828	
2023			\$5,134,176	\$5,134,176	\$1,012,550,003	
2024			\$5,877,775	\$5,877,775	\$1,018,427,778	
2025			\$10,913,081	\$10,913,081	\$1,029,340,859	
TOTAL	\$883,665,933	\$818,848	\$144,856,079	\$1,029,340,860		

- 1) Cash Flow is based on construction of ISFSI and Fuel removed from HBPP in 2025 (Assumes DOE Used Fuel Repository opens in 2024 allowing HBPP Fuel to be shipped during 2024-2025) Trust account value of \$189.2 million is Expense Equivalent Liquidation Value.
- 2) Market Value of Trust as of 12/2013 was \$191.5 million, actual expended as of 12/2013 was \$439.5 Million

**Variance of the 2013 Forecast
Humboldt Bay Power Plant - Unit 3 (220 MWt)**

Estimated Costs:

2013 Forecast per PG&E Letter HBL-13-003, Enclosure 4, dated April 1, 2013, in 2013 dollars:

NRC Scope (Radiological)	\$159,567,437
Non-NRC Scope	\$ 380,160
Spent Fuel Management	\$ 4,950,314

Actual Costs:

2013 Actual Incurred Costs, provided in PG&E Letter HBL-14-009, Enclosure 3, dated March 31, 2014, reflects the actuals for 2013 in nominal dollars.

NRC Scope (Radiological)	\$ 93,994,101
Non-NRC Scope	\$ 0
Spent Fuel Management	\$ 4,621,387

Variance:

NRC Scope (Radiological)	\$ 65,573,336
Non-NRC Scope	\$ 380,160
Spent Fuel Management	\$ 328,927

Due to the delay in receiving approval from the California Public Utilities Commission (CPUC) to February 27, 2014, of PG&E's 2012 Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) filed December 21, 2012, the Civil Works scope for remediation of the discharge canal, pretrenching of the slurry wall, and facilities demolition were delayed resulting in deferral of this work scope and activities associated with this scope.

Spent Fuel Management variance was the result of a decrease in Security Officer overtime.