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10 CFR 50.75

PG&E Letter DCL-11-039

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

Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
Decommissioning Funding Report for Diablo Canyon Power Plant Units 1 and 2

Dear Commissioners and Staff:

PG&E is submitting the decommissioning fund report for Diablo Canyon Power Plant (DCPP) Units 1 and 2, pursuant to the requirements of 10 CFR 50.75(f).

Diablo Canyon Units 1 and 2

At the end of calendar year 2010, the market value of the DCPP Units 1 (3411 MWt) and 2 (3411 MWt) decommissioning trust fund Market value was $807.5 million and $1,083.1 million respectively. Based on the site-specific decommissioning cost estimate prepared by TLG Services, Inc., and adjusted per the Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) Decision 10-07-047 from the California Public Utilities Commission (CPUC), PG&E is confident that the DCPP Units 1 and 2 decommissioning trust fund balance in 2024 and 2025 will meet the minimum NRC decommissioning amount of $580.3 million (2011 dollars) for each unit that was calculated pursuant to the requirements specified in 10 CFR 50.75(c).

Supporting Cost Estimates

Based on site-specific cost estimates prepared by TLG Services, Inc. and the NDCTP Decision 10-07-047, PG&E has estimated that the decommissioning costs are approximately $583.9 million for DCPP Unit 1 and $546 million for Unit 2 in 2011 dollars. These costs do not include site restoration of the facilities ($258.6 million) nor spent fuel management costs after shutdown of the Units ($637.4 million).

To assure that sufficient funds will be available for decommissioning, PG&E has established separate external sinking trust fund accounts for DCPP Units 1 and 2.

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Supporting Enclosures

Supporting documentation for this report is included as Enclosures 1 through 4.

Enclosure 1 provides decommissioning funding status information in a format suggested by NEI and the NRC.

Enclosure 2 provides information on the escalation of the required decommissioning funding amounts from 1986 dollars to 2011 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 14, the information includes escalation factors for energy, labor, and waste burial costs.

Enclosure 3 provides the TLG Services, Inc. decommissioning cost estimate report prepared in March 2009 for PG&E's DCPP Units 1 and 2. The TLG Services, Inc. cost estimate has then been adjusted to reflect the costs in 2011 dollars per CPUC Decision 10-07-047. The report provides cost estimates for decommissioning of both nuclear and non-nuclear facilities, including the independent spent fuel storage installation (ISFSI).

Enclosure 4 contains the TLG Services, Inc. decommissioning cost estimate report prepared in March 2009 for PG&E's DCPP Units 1 & 2. The report provides cost estimates for the decommissioning of the nuclear, non-nuclear facilities, and spent fuel management including operation of the ISFSI.

There are no Regulatory commitments in this letter. Should you have any questions in regard to this document please feel free to call Mr. Bob Kapus at (707) 444-0810.

Sincerely,

John T. Conway
Senior Vice President – Energy Supply and Chief Nuclear Officer

Enclosures
cc/enc: Elmo E. Collins, NRC Region IV
James T. Polickoski, NRC Project Manager
Alan B. Wang, NRC Project Manager
INPO
Diablo Distribution

NRC Decommissioning Funding Status Report

Diablo Canyon Power Plant – Units 1 (3411 MWt) and 2 (3411 MWt)

NRC Decommissioning Funding Status Report
Diablo Canyon Power Plant - Units 1 (3411 MWt) & 2 (3411 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 on March 31, 1999, and every 2 years thereafter, on the status of its decommissioning funding for each reactor or share of reactor it owns.

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

	$ in Millions
Value in January 2011 dollars	Unit 1 $580.3
	Unit 2 $580.3

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 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 2010 dollars)	Unit 1 $ 807.5
	Unit 2 $1,083.1

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)). (See item 6 of this enclosure describing the collection of additional funds)

Unit 1 amount remaining ($4.7 million for 3 years beginning 2010)	$14.2
Unit 2 amount remaining ($4.4 million for 3 years beginning 2010)	$13.2

[1] * The NRC formulas in section 10 CFR 50.75(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 nonradiological systems and structures is not included in the NRC decommissioning cost estimates. The costs of managing and storing spent fuel on site until transfer to Department of Energy are not included in the cost formulas.

4. The assumptions used regarding escalation in decommissioning cost, rates of earnings on decommissioning funds (anticipates that the portfolio of each trust will be gradually converted to a more conservative all income portfolio beginning in 2020 for Unit 1 and Unit 2), and rates of other factors used in funding projections;

   Escalation in decommissioning costs

Rate of Return on Qualified Trust Unit 1 2010	5.01 percent
Rate of Return on Qualified Trust Unit 1 2011	4.96 percent
Rate of Return on Qualified Trust Unit 1 2012	4.92 percent
Rate of Return on Qualified Trust Unit 1 2013	4.88 percent
Rate of Return on Qualified Trust Unit 1 2014	4.85 percent
Rate of Return on Qualified Trust Unit 1 2015	4.82 percent
Rate of Return on Qualified Trust Unit 1 2016	4.80 percent
Rate of Return on Qualified Trust Unit 1 2017	4.78 percent
Rate of Return on Qualified Trust Unit 1 2018	4.77 percent
Rate of Return on Qualified Trust Unit 1 2019	4.75 percent
Rate of Return on Qualified Trust Unit 1 2020	4.37 percent
Rate of Return on Qualified Trust Unit 1 2021	4.01 percent
Rate of Return on Qualified Trust Unit 1 2022	3.67 percent
Rate of Return on Qualified Trust Unit 1 2023	3.35 percent
Rate of Return on Qualified Trust Unit 1 2024	3.05 percent
Rate of Return on Qualified Trust Unit 1 (Post 2025)	2.95 percent
Rate of Return on Qualified Trust Unit 2 2010	5.01 percent
Rate of Return on Qualified Trust Unit 2 2011	4.96 percent
Rate of Return on Qualified Trust Unit 2 2012	4.91 percent
Rate of Return on Qualified Trust Unit 2 2013	4.88 percent
Rate of Return on Qualified Trust Unit 2 2014	4.85 percent
Rate of Return on Qualified Trust Unit 2 2015	4.82 percent
Rate of Return on Qualified Trust Unit 2 2016	4.80 percent
Rate of Return on Qualified Trust Unit 2 2017	4.78 percent
Rate of Return on Qualified Trust Unit 2 2018	4.77 percent
Rate of Return on Qualified Trust Unit 2 2019	4.75 percent
Rate of Return on Qualified Trust Unit 2 2020	4.37 percent
Rate of Return on Qualified Trust Unit 2 2021	4.01 percent
Rate of Return on Qualified Trust Unit 2 2022	3.67 percent
Rate of Return on Qualified Trust Unit 2 2023	3.35 percent
Rate of Return on Qualified Trust Unit 2 2024	3.05 percent
Rate of Return on Qualified Trust Unit 2 (Post 2025)	2.95 percent

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. California Public Utilities Commission (CPUC) Submittal in 2011 dollars in millions:

Total Unit 1 (Decommission 2024)	$ 857.5
Scope Excluded from NRC calculations	$ 97.9
Spent Fuel Management	$ 175.7
Total NRC Decommissioning Costs	$ 583.9
Total Unit 2 (Decommission 2025)	$1,168.9
Scope Excluded from NRC calculations	$ 160.7
Spent Fuel Management	$ 461.7
Total NRC Decommissioning Costs	$ 546.5

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2011 Decommissioning Estimate U1

Nuclear Regulatory Commission
Estimate of Decommission Costs for PWR DCPP Unit 1 in 2011

	DCPP PWR (millions)	
Jan 1986 Estimate	$105	
Escalated to 1999	$118.2	(Table 2.1 in NUREG 1307, Revision 10, has no value for 1999 Burial)
Escalated to 2000		(No Submittal Required)
Escalated to 2001	$333.8	($396.7 in 2001 Submittal)
Escalated to 2002		(No Submittal Required)
Escalated to 2003	$347.5	($404.8 in 2003 Submittal)
Escalated to 2004		(No Submittal Required)
Escalated to 2005	$404.2	($427.2 in 2005 Submittal)
Escalated to 2006		(No Submittal Required)
Escalated to 2007	$495.8	($494.8 in 2007 Submittal)
Escalated to 2008		(No Submittal Required)
Escalated to 2009	$541.4	
Escalated to 2010	$560.7	(No Submittal Required)
Escalated to 2011	$580.3	

Jan 1986 based on 10 CFR 50.75 (c) Table of minimum amounts
BWR based on minimum 1, 200 MWt = ($104 + (.009xMWt)) million per unit

Jan 1986 based on 10 CFR 50.75 (c) Table of minimum amounts
PWR Greater than or equal to 3400 MWt = $105 million per unit
between 1200 MWt and 3400 MWt (for PWR less than 1200 MWt, use P=1200MWt $75+0.0088P)

2011 Decommissioning Estimate U2

Nuclear Regulatory Commission
Estimate of Decommission Costs for PWR DCPP Unit 2 in 2011

	DCPP PWR (millions)	
Jan 1986 Estimate	$105	
Escalated to 1999	$118.2	(Table 2.1 in NUREG 1307, Revision 10, has no value for 1999 Burial)
Escalated to 2000		(No Submittal Required)
Escalated to 2001	$333.8	($396.7 in 2001 Submittal)
Escalated to 2002		(No Submittal Required)
Escalated to 2003	$347.5	($404.8 in 2003 Submittal)
Escalated to 2004		(No Submittal Required)
Escalated to 2005	$404.2	($427.2 in 2005 Submittal)
Escalated to 2006		(No Submittal Required)
Escalated to 2007	$495.8	($494.8 in 2007 Submittal)
Escalated to 2008		(No Submittal Required)
Escalated to 2009	$541.4	
Escalated to 2010	$560.7	(No Submittal Required)
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Jan 1986 based on 10 CFR 50.75 (c) Table of minimum amounts
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PWR Greater than or equal to 3400 MWt = $105 million per unit
between 1200 MWt and 3400 MWt (for PWR less than 1200 MWt, use P=1200MWt $75+0.0088P)

Composite Escalation

Calculating Overall Escalation Rate

PWR	Jan-86	Jan-99	Jan-00	Jan-01	Jan-02	Jan-03	Jan-04	Jan-05	Jan-06	Jan-07	Jan-08	Jan-09	Jan-10	Jan-11	Weight (1)
L (Labor)	1.0000	1.5624	1.6370	0.9365	0.9733	1.0122	1.0612	1.0958	2.0724	2.1465	2.2207	2.2639	2.2948	2.3216	0.65
E (Energy)	1.0000	0.8499	1.0297	1.1850	0.9909	1.2027	1.2164	1.4656	1.8306	1.7950	2.3262	1.7850	2.0766	2.3063	0.13
B (Burial)	1.0000	0.0000	10.8039	10.9840	11.1633	11.3430	13.0733	13.3951	13.7247	14.0626	15.0364	15.6922	16.2646	16.8999	0.22

PWR
Combined Escalation Rate for:

Jan-86	Jan-99	Jan-00	Jan-01	Jan-02	Jan-03	Jan-04	Jan-05	Jan-06	Jan-07	Jan-08	Jan-09	Jan-10	Jan-11
1.0000	1.1260	3.5748	3.1793	3.2174	3.3098	3.7241	3.8497	4.6044	4.7224	5.0538	5.1559	5.3398	5.5268

(1) From NUREG 1307, Revision 12, 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.

(2) Jan-01, Jan-03, Jan-05, and Jan-07 B (Burial) value in this table see calculation notes in Development of B Component spreadsheet

Development of B Component

Development of Burial Escalation
Developed from NUREG-1307 Revision 14
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 (Assumed to be same as that provided for the Atlantic Compact) for lack of a better alternative at this time.

	PWR Burial Costs (South Carolina)	**PWR Restated to 1986 = 100**
1986	1.678	1.0000
1987		
1988	2.007	1.1961
1989		
1990		
1991	2.494	1.4863
1992		
1993	11.408	6.7986
1994	11.873	7.0757
1995	12.824	7.6424
1996	12.771	7.6108
1997	15.852	9.4470
1998	15.886	9.4672
1999		0.0000
2000	18.129	10.8039
2001		0.0000
2002	18.732	11.1633
2003	19.034	11.3430
2004	21.937	13.0733
2005	22.477	13.3951
2006	23.030	13.7247
2007	23.597	14.0626
2008	25.231	15.0364
2009	26.332	15.6922
2010	27.292	16.2646
2011	28.358	16.8999

Table 2.1 Note ('c) From 7/1/95 through 6/30/2000 access was allowed for all states except North Carolina. Effective 7/1/2000 rates are based on whether a waste generator is or is not a member of the Atlantic Compact.

2001 has no information in NUREG-1307 Revision 12. 2001 is an estimate that is calculated by applying the average percent change between 2000 and 2002 and adding to the 2000 base.

2003 has no information in NUREG-1307 Revision 12. 2003 is an estimate that is calculated by applying the average percent change between 2002 and 2004 and adding to the 2002 base.

2005 has no information in NUREG-1307 Revision 12. 2005 is an estimate that is calculated by applying the average percent change between 2004 and 2006 and adding to the 2004 base.

2007 has no information in NUREG-1307 Revision 12. 2007 is an estimate that is calculated by applying the average percent change between 2004 and 2006 and adding to the 2006 base.

2009 has no information in NUREG-1307 Revision 13. 2009 is an estimate that is calculated by applying the average percent change between 2006 and 2008 and adding to the 2008 base.

2011 has no information in NUREG-1307 Revision 14. 2011 is an estimate that is calculated by applying the average percent change between 2008 and 2010 and adding to the 2008 base.

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	REBASED TO 1986 = 100 PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power PWR wt = 0.58	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils PWR wt = 0.42	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Jan-86	114.2	82.0	1.0000	1.0000	1.0000
Feb-86	115.0	62.4	1.0070	0.7610	0.9037
Mar-86	114.4	51.3	1.0018	0.6256	0.8438
Apr-86	113.7	49.8	0.9956	0.6073	0.8325
May-86	114.1	47.0	0.9991	0.5732	0.8202
Jun-86	115.3	44.7	1.0096	0.5451	0.8145
Jul-86	116.2	36.4	1.0175	0.4439	0.7766
Aug-86	116.3	40.1	1.0184	0.4890	0.7961
Sep-86	116.3	46.3	1.0184	0.5646	0.8278
Oct-86	113.0	43.1	0.9895	0.5256	0.7947
Nov-86	112.7	43.5	0.9869	0.5305	0.7952
Dec-86	112.3	45.6	0.9834	0.5561	0.8039
Jan-87	110.3	51.4	0.9658	0.6268	0.8235
Feb-87	109.8	53.1	0.9615	0.6476	0.8296
Mar-87	110.2	49.7	0.9650	0.6061	0.8142
Apr-87	109.9	52.0	0.9623	0.6341	0.8245
May-87	111.8	53.3	0.9790	0.6500	0.8408
Jun-87	113.9	55.1	0.9974	0.6720	0.8607
Jul-87	116.2	56.3	1.0175	0.6866	0.8785
Aug-87	115.7	59.4	1.0131	0.7244	0.8919
Sep-87	115.5	56.8	1.0114	0.6927	0.8775
Oct-87	111.0	59.3	0.9720	0.7232	0.8675
Nov-87	109.2	61.2	0.9562	0.7463	0.8681
Dec-87	109.6	58.1	0.9597	0.7085	0.8542
Jan-88	108.8	54.8	0.9527	0.6683	0.8333
Feb-88	109.0	51.5	0.9545	0.6280	0.8174
Mar-88	109.0	49.7	0.9545	0.6061	0.8082
Apr-88	109.1	53.3	0.9553	0.6500	0.8271
May-88	108.9	54.3	0.9536	0.6622	0.8312
Jun-88	117.2	50.6	1.0263	0.6171	0.8544
Jul-88	118.2	46.9	1.0350	0.5720	0.8405
Aug-88	118.3	46.8	1.0359	0.5707	0.8405
Sep-88	118.5	45.9	1.0377	0.5598	0.8369
Oct-88	114.2	42.3	1.0000	0.5159	0.7967
Nov-88	109.2	47.2	0.9562	0.5756	0.7964
Dec-88	110.5	50.6	0.9676	0.6171	0.8204
Jan-89	112.0	54.9	0.9807	0.6695	0.8500
Feb-89	112.0	54.0	0.9807	0.6585	0.8454
Mar-89	112.3	57.3	0.9834	0.6988	0.8638
Apr-89	112.4	61.5	0.9842	0.7500	0.8859
May-89	113.6	57.5	0.9947	0.7012	0.8715
Jun-89	119.8	53.3	1.0490	0.6500	0.8814
Jul-89	122.2	52.7	1.0701	0.6427	0.8906
Aug-89	122.4	53.5	1.0718	0.6524	0.8957
Sep-89	122.5	59.3	1.0727	0.7232	0.9259

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	REBASED TO 1986 = 100 PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Oct-89	117.2	64.0	1.0263	0.7805	0.9230
Nov-89	113.5	64.4	0.9939	0.7854	0.9063
Dec-89	114.2	68.1	1.0000	0.8305	0.9288
Jan-90	114.9	85.3	1.0061	1.0402	1.0205
Feb-90	115.0	59.4	1.0070	0.7244	0.8883
Mar-90	115.4	60.4	1.0105	0.7366	0.8955
Apr-90	115.1	61.0	1.0079	0.7439	0.8970
May-90	117.0	58.4	1.0245	0.7122	0.8933
Jun-90	123.9	53.0	1.0849	0.6463	0.9007
Jul-90	124.4	51.6	1.0893	0.6293	0.8961
Aug-90	124.6	72.3	1.0911	0.8817	1.0031
Sep-90	125.0	87.3	1.0946	1.0646	1.0820
Oct-90	121.2	104.8	1.0613	1.2780	1.1523
Nov-90	120.2	98.9	1.0525	1.2061	1.1170
Dec-90	118.9	89.3	1.0412	1.0890	1.0613
Jan-91	124.2	82.9	1.0876	1.0110	1.0554
Feb-91	124.3	74.3	1.0884	0.9061	1.0119
Mar-91	124.3	61.6	1.0884	0.7512	0.9468
Apr-91	124.7	60.0	1.0919	0.7317	0.9406
May-91	128.2	59.6	1.1226	0.7268	0.9564
Jun-91	132.6	57.6	1.1611	0.7024	0.9685
Jul-91	134.5	58.1	1.1778	0.7085	0.9807
Aug-91	133.8	62.1	1.1716	0.7573	0.9976
Sep-91	133.8	65.4	1.1716	0.7976	1.0145
Oct-91	128.3	67.6	1.1235	0.8244	0.9979
Nov-91	123.1	71.0	1.0779	0.8659	0.9889
Dec-91	125.1	62.2	1.0954	0.7585	0.9539
Jan-92	125.9	54.4	1.1025	0.6634	0.9181
Feb-92	125.3	57.3	1.0972	0.6988	0.9299
Mar-92	125.8	56.0	1.1016	0.6829	0.9257
Apr-92	124.8	59.0	1.0928	0.7195	0.9360
May-92	128.5	62.1	1.1252	0.7573	0.9707
Jun-92	134.8	65.4	1.1804	0.7976	1.0196
Jul-92	135.6	64.6	1.1874	0.7878	1.0196
Aug-92	135.1	63.3	1.1830	0.7720	1.0104
Sep-92	135.9	65.6	1.1900	0.8000	1.0262
Oct-92	131.2	68.2	1.1489	0.8317	1.0157
Nov-92	125.5	64.2	1.0989	0.7829	0.9662
Dec-92	126.7	59.4	1.1095	0.7244	0.9477
Jan-93	127.1	59.0	1.1130	0.7195	0.9477
Feb-93	126.4	60.4	1.1068	0.7366	0.9513
Mar-93	126.7	63.2	1.1095	0.7707	0.9672
Apr-93	126.8	62.4	1.1103	0.7610	0.9636
May-93	127.5	62.6	1.1165	0.7634	0.9682
Jun-93	136.9	60.8	1.1988	0.7415	1.0067
Jul-93	137.1	57.0	1.2005	0.6951	0.9883
Aug-93	137.2	54.4	1.2014	0.6634	0.9754

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

			REBASED TO 1986 = 100		
	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Sep-93	137.6	59.3	1.2049	0.7232	1.0026
Oct-93	131.9	65.4	1.1550	0.7976	1.0049
Nov-93	126.3	61.6	1.1060	0.7512	0.9570
Dec-93	126.0	51.4	1.1033	0.6268	0.9032
Jan-94	126.2	51.5	1.1051	0.6280	0.9047
Feb-94	125.9	57.5	1.1025	0.7012	0.9339
Mar-94	125.8	56.2	1.1016	0.6854	0.9268
Apr-94	125.4	54.7	1.0981	0.6671	0.9171
May-94	126.0	54.7	1.1033	0.6671	0.9201
Jun-94	133.5	54.1	1.1690	0.6598	0.9551
Jul-94	134.5	56.3	1.1778	0.6866	0.9715
Aug-94	134.5	57.5	1.1778	0.7012	0.9776
Sep-94	134.9	57.7	1.1813	0.7037	0.9807
Oct-94	129.1	57.7	1.1305	0.7037	0.9512
Nov-94	127.0	58.8	1.1121	0.7171	0.9462
Dec-94	127.4	54.7	1.1156	0.6671	0.9272
Jan-95	127.6	54.7	1.1173	0.6671	0.9282
Feb-95	128.0	53.3	1.1208	0.6500	0.9231
Mar-95	128.3	54.3	1.1235	0.6622	0.9297
Apr-95	126.4	57.1	1.1068	0.6963	0.9344
May-95	130.2	59.1	1.1401	0.7207	0.9640
Jun-95	135.3	55.8	1.1848	0.6805	0.9730
Jul-95	136.6	53.5	1.1961	0.6524	0.9678
Aug-95	136.5	55.6	1.1953	0.6780	0.9780
Sep-95	133.7	58.2	1.1708	0.7098	0.9771
Oct-95	131.4	57.8	1.1506	0.7049	0.9634
Nov-95	127.6	59.5	1.1173	0.7256	0.9528
Dec-95	127.7	60.6	1.1182	0.7390	0.9590
Jan-96	127.9	62.6	1.1200	0.7634	0.9702
Feb-96	127.1	59.7	1.1130	0.7280	0.9513
Mar-96	127.8	63.5	1.1191	0.7744	0.9743
Apr-96	129.1	74.7	1.1305	0.9110	1.0383
May-96	135.0	72.0	1.1821	0.8780	1.0544
Jun-96	137.5	62.8	1.2040	0.7659	1.0200
Jul-96	136.0	64.3	1.1909	0.7841	1.0201
Aug-96	136.2	66.5	1.1926	0.8110	1.0323
Sep-96	136.2	73.4	1.1926	0.8951	1.0677
Oct-96	131.2	79.7	1.1489	0.9720	1.0746
Nov-96	127.1	76.5	1.1130	0.9329	1.0373
Dec-96	127.7	76.1	1.1182	0.9280	1.0383
Jan-97	128.3	73.7	1.1235	0.8988	1.0291
Feb-97	128.1	72.3	1.1217	0.8817	1.0209
Mar-97	128.2	65.2	1.1226	0.7951	0.9851
Apr-97	127.3	65.3	1.1147	0.7963	0.9810
May-97	129.7	64.2	1.1357	0.7829	0.9876
Jun-97	135.1	60.8	1.1830	0.7415	0.9976
Jul-97	135.9	57.8	1.1900	0.7049	0.9863

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

			REBASED TO 1986 = 100		
	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Aug-97	134.7	61.5	1.1795	0.7500	0.9991
Sep-97	136.0	60.4	1.1909	0.7366	1.0001
Oct-97	130.1	64.8	1.1392	0.7902	0.9927
Nov-97	127.9	65.8	1.1200	0.8024	0.9866
Dec-97	128.3	59.4	1.1235	0.7244	0.9559
Jan-98	127.4	54.1	1.1156	0.6598	0.9241
Feb-98	127.2	52.0	1.1138	0.6341	0.9124
Mar-98	126.7	48.3	1.1095	0.5890	0.8909
Apr-98	126.4	50.2	1.1068	0.6122	0.8991
May-98	129.2	50.0	1.1313	0.6098	0.9123
Jun-98	133.8	46.3	1.1716	0.5646	0.9167
Jul-98	134.8	45.0	1.1804	0.5488	0.9151
Aug-98	135.2	44.0	1.1839	0.5366	0.9120
Sep-98	135.2	48.3	1.1839	0.5890	0.9340
Oct-98	130.4	47.4	1.1419	0.5780	0.9051
Nov-98	127.6	46.2	1.1173	0.5634	0.8847
Dec-98	126.6	38.8	1.1086	0.4732	0.8417
Jan-99	126.1	40.9	1.1042	0.4988	0.8499
Feb-99	125.5	38.2	1.0989	0.4659	0.8330
Mar-99	125.5	42.8	1.0989	0.5220	0.8566
Apr-99	125.2	52.5	1.0963	0.6402	0.9048
May-99	127.4	52.6	1.1156	0.6415	0.9165
Jun-99	131.0	52.4	1.1471	0.6390	0.9337
Jul-99	133.9	58.7	1.1725	0.7159	0.9807
Aug-99	133.9	63	1.1725	0.7683	1.0027
Sep-99	134.1	67.6	1.1743	0.8244	1.0273
Oct-99	129.5	65.5	1.1340	0.7988	0.9932
Nov-99	127.5	71.3	1.1165	0.8695	1.0127
Dec-99	126.5	72.9	1.1077	0.8890	1.0159
Jan-00	126.8	75.3	1.1103	0.9183	1.0297
Feb-00	126.7	87.9	1.1095	1.0720	1.0937
Mar-00	126.7	89.7	1.1095	1.0939	1.1029
Apr-00	126.8	83.1	1.1103	1.0134	1.0696
May-00	128.6	82.9	1.1261	1.0110	1.0777
Jun-00	133.6	86.2	1.1699	1.0512	1.1200
Jul-00	136.2	88.7	1.1926	1.0817	1.1461
Aug-00	137.4	91.6	1.2032	1.1171	1.1670
Sep-00	137.8	110.1	1.2067	1.3427	1.2638
Oct-00	134.1	108.6	1.1743	1.3244	1.2373
Nov-00	130.9	108.4	1.1462	1.3220	1.2200
Dec-00	132.7	100.6	1.1620	1.2268	1.1892
Jan-01	136.4	96.1	1.1944	1.1720	1.1850
Feb-01	136.4	91.6	1.1944	1.1171	1.1619
Mar-01	136.5	83.1	1.1953	1.0134	1.1189
Apr-01	135.1	86.2	1.1830	1.0512	1.1277
May-01	136.2	94.2	1.1926	1.1488	1.1742
Jun-01	148.4	90.2	1.2995	1.1000	1.2157

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

			REBASED TO 1986 = 100		
	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Jul-01	149.5	81.3	1.3091	0.9915	1.1757
Aug-01	148.9	83.2	1.3039	1.0146	1.1824
Sep-01	148.2	93	1.2977	1.1341	1.2290
Oct-01	143.8	76.8	1.2592	0.9366	1.1237
Nov-01	137.3	70.5	1.2023	0.8598	1.0584
Dec-01	136.9	56.6	1.1988	0.6902	0.9852
Jan-02	136.3	58.3	1.1935	0.7110	0.9909
Feb-02	135.4	59.6	1.1856	0.7268	0.9929
Mar-02	135.7	69.1	1.1883	0.8427	1.0431
Apr-02	135.4	76.4	1.1856	0.9317	1.0790
May-02	137.9	75	1.2075	0.9146	1.0845
Jun-02	143.6	71.4	1.2574	0.8707	1.0950
Jul-02	144.9	75.5	1.2688	0.9207	1.1226
Aug-02	145.0	77.9	1.2697	0.9500	1.1354
Sep-02	145.8	89.5	1.2767	1.0915	1.1989
Oct-02	140.0	95.1	1.2259	1.1598	1.1981
Nov-02	139.5	82.8	1.2215	1.0098	1.1326
Dec-02	139.6	84.6	1.2224	1.0317	1.1423
Jan-03	140.3	95.7	1.2285	1.1671	1.2027
Feb-03	140.6	120.4	1.2312	1.4683	1.3308
Mar-03	143.3	128.9	1.2548	1.5720	1.3880
Apr-03	144.3	98.3	1.2636	1.1988	1.2364
May-03	145.1	85.5	1.2706	1.0427	1.1749
Jun-03	148.3	87.2	1.2986	1.0634	1.1998
Jul-03	151.6	90.1	1.3275	1.0988	1.2314
Aug-03	151.3	94.1	1.3249	1.1476	1.2504
Sep-03	152.0	88.2	1.3310	1.0756	1.2237
Oct-03	147.4	97.8	1.2907	1.1927	1.2495
Nov-03	142.7	93.0	1.2496	1.1341	1.2011
Dec-03	142.9	95.8	1.2513	1.1683	1.2164
Jan-04	143.1	106.8	1.2531	1.3024	1.2738
Feb-04	143.1	100.8	1.2531	1.2293	1.2431
Mar-04	143.1	107.8	1.2531	1.3146	1.2789
Apr-04	143.1	115.2	1.2531	1.4049	1.3168
May-04	144.2	116	1.2627	1.4146	1.3265
Jun-04	152.4	111.5	1.3345	1.3598	1.3451
Jul-04	152.2	119.3	1.3327	1.4549	1.3840
Aug-04	154.0	131.1	1.3485	1.5988	1.4536
Sep-04	154.0	136.8	1.3485	1.6683	1.4828
Oct-04	145.8	161.7	1.2767	1.9720	1.5687
Nov-04	144.9	153.6	1.2688	1.8732	1.5227
Dec-04	146.2	133.8	1.2802	1.6317	1.4278
Jan-05	148.9	138.5	1.3039	1.6890	1.4656
Feb-05	148.0	146	1.2960	1.7805	1.4995
Mar-05	148.1	169.4	1.2968	2.0659	1.6198
Apr-05	148.7	170.9	1.3021	2.0841	1.6306
May-05	151.1	165.3	1.3231	2.0159	1.6141

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

			REBASED TO 1986 = 100		
	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
Jun-05	159.7	180.6	1.3984	2.2024	1.7361
Jul-05	162.1	186.2	1.4194	2.2707	1.7770
Aug-05	162.5	194.5	1.4229	2.3720	1.8215
Sep-05	162.8	209.9	1.4256	2.5598	1.9019
Oct-05	159.5	252.0	1.3967	3.0732	2.1008
Nov-05	161.1	199.1	1.4107	2.4280	1.8380
Dec-05	161.4	193.6	1.4133	2.3610	1.8113
Jan-06	167.0	191.8	1.4623	2.3390	1.8306
Feb-06	168.6	190.0	1.4764	2.3171	1.8295
Mar-06	167.4	199.2	1.4658	2.4293	1.8705
Apr-06	169.6	221.9	1.4851	2.7061	1.9979
May-06	170.8	231.4	1.4956	2.8220	2.0527
Jun-06	181.2	238.1	1.5867	2.9037	2.1398
Jul-06	181.9	231.6	1.5928	2.8244	2.1101
Aug-06	180.2	241.4	1.5779	2.9439	2.1516
Sep-06	181.0	203.1	1.5849	2.4768	1.9595
Oct-06	171.2	198.1	1.4991	2.4159	1.8842
Nov-06	167.2	198.2	1.4641	2.4171	1.8643
Dec-06	167.8	200.4	1.4694	2.4439	1.8787
Jan-07	171.9	180.0	1.5053	2.1951	1.7950
Feb-07	175.7	191.5	1.5385	2.3354	1.8732
Mar-07	172.1	215.1	1.5070	2.6232	1.9758
Apr-07	173.1	231.8	1.5158	2.8268	2.0664
May-07	179.2	225.3	1.5692	2.7476	2.0641
Jun-07	186.7	222.4	1.6349	2.7122	2.0873
Jul-07	187.0	237.8	1.6375	2.9000	2.1677
Aug-07	187.6	225.5	1.6427	2.7500	2.1078
Sep-07	188.4	238.9	1.6497	2.9134	2.1805
Oct-07	182.7	243.3	1.5998	2.9671	2.1741
Nov-07	180.3	288.2	1.5788	3.5146	2.3919
Dec-07	180.0	266.7	1.5762	3.2524	2.2802
Jan-08	181.9	273.8	1.5928	3.3390	2.3262
Feb-08	180.0	280.2	1.5762	3.4171	2.3494
Mar-08	183.1	339.6	1.6033	4.1415	2.6693
Apr-08	185.2	352.5	1.6217	4.2988	2.7461
May-08	189.5	384.9	1.6594	4.6939	2.9339
Jun-08	191.9	410.5	1.6804	5.0061	3.0772
Jul-08	196.1	423.8	1.7172	5.1683	3.1666
Aug-08	197.1	343.9	1.7259	4.1939	2.7625
Sep-08	195.9	335.1	1.7154	4.0866	2.7113
Oct-08	193.0	279.0	1.6900	3.4024	2.4092
Nov-08	187.7	218.2	1.6436	2.6610	2.0709
Dec-08	188.3	163.0	1.6489	1.9878	1.7912
Jan-09	190.3	159.8	1.6664	1.9488	1.7850
Feb-09	190.3	145.6	1.6664	1.7756	1.7123
Mar-09	187.6	136.8	1.6427	1.6683	1.6535
Apr-09	186.9	159.9	1.6366	1.9500	1.7682

Development of E Component

Calculation of Energy Escalation Factor - Reference NUREG-1307, Revision 14, Sectopm 3.2
Using Regional Indices SERIES ID: WPU0573 Light Fuel Oils (as of 03/02/11) and WPU0543 Industrial Electric Power (as of 03/02/11)

			REBASED TO 1986 = 100		
	PPI for Fuels & Related Products (1982 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1982=100) (F) = Light Fuel Oils	PPI for Fuels & Related Products (1986 = 100) (P) =Industrial Energy Power	PPI for Light Fuel Oils (1986=100) (F) = Light Fuel Oils	Energy Escalation Factor (E) for PWR (Diablo Canyon)
May-09	190.5	158.6	1.6681	1.9341	1.7799
Jun-09	193.3	183.7	1.6926	2.2402	1.9226
Jul-09	196.2	165.2	1.7180	2.0146	1.8426
Aug-09	194.7	196.1	1.7049	2.3915	1.9933
Sep-09	194.9	186.6	1.7067	2.2756	1.9456
Oct-09	189.9	193.3	1.6629	2.3573	1.9545
Nov-09	186.0	207.8	1.6287	2.5341	2.0090
Dec-09	186.0	197.5	1.6287	2.4085	1.9562
Jan-10	186.3	220.7	1.6313	2.6915	2.0766
Feb-10	186.1	200.2	1.6296	2.4415	1.9706
Mar-10	189.0	217.0	1.6550	2.6463	2.0714
Apr-10	188.8	231.5	1.6532	2.8232	2.1446
May-10	192.0	226.0	1.6813	2.7561	2.1327
Jun-10	197.8	212.4	1.7320	2.5902	2.0925
Jul-10	199.8	209.3	1.7496	2.5524	2.0868
Aug-10	200.8	221.4	1.7583	2.7000	2.1538
Sep-10	200.0	220.0	1.7513	2.6829	2.1426
Oct-10	194.7	236.0	1.7049	2.8780	2.1976
Nov-10	192.9	245.5	1.6891	2.9939	2.2371

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
Note 1: The Base Labor factor was reindexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Jan-86	89.8	1.00000
Feb-86		
Mar-86		
Apr-86	90.8	1.01114
May-86		
Jun-86		
Jul-86	91.2	1.01559
Aug-86		
Sep-86		
Oct-86	91.6	1.02004
Nov-86		
Dec-86		
Jan-87	92.5	1.03007
Feb-87		
Mar-87		
Apr-87	92.6	1.03118
May-87		
Jun-87		
Jul-87	93.7	1.04343
Aug-87		
Sep-87		
Oct-87	94.1	1.04788
Nov-87		
Dec-87		
Jan-88	95.4	1.06236
Feb-88		
Mar-88		
Apr-88	96.3	1.07238
May-88		
Jun-88		
Jul-88	97	1.08018
Aug-88		
Sep-88		
Oct-88	97.7	1.08797
Nov-88		
Dec-88		
Jan-89	98.8	1.10022
Feb-89		
Mar-89		
Apr-89	100	1.11359
May-89		
Jun-89		
Jul-89	101	1.12472
Aug-89		
Sep-89		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
Note 1: The Base Labor factor was reindexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Oct-89	101.8	1.13363
Nov-89		
Dec-89		
Jan-90	103.3	1.15033
Feb-90		
Mar-90		
Apr-90	104.5	1.16370
May-90		
Jun-90		
Jul-90	105.6	1.17595
Aug-90		
Sep-90		
Oct-90	106.3	1.18374
Nov-90		
Dec-90		
Jan-91	107.5	1.19710
Feb-91		
Mar-91		
Apr-91	108.9	1.21269
May-91		
Jun-91		
Jul-91	110	1.22494
Aug-91		
Sep-91		
Oct-91	110.9	1.23497
Nov-91		
Dec-91		
Jan-92	111.9	1.24610
Feb-92		
Mar-92		
Apr-92	112.9	1.25724
May-92		
Jun-92		
Jul-92	114.1	1.27060
Aug-92		
Sep-92		
Oct-92	114.9	1.27951
Nov-92		
Dec-92		
Jan-93	116.2	1.29399
Feb-93		
Mar-93		
Apr-93	116.4	1.29621
May-93		
Jun-93		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
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	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Jul-93	117.8	1.31180
Aug-93		
Sep-93		
Oct-93	118.1	1.31514
Nov-93		
Dec-93		
Jan-94	119.4	1.32962
Feb-94		
Mar-94		
Apr-94	120.5	1.34187
May-94		
Jun-94		
Jul-94	121.3	1.35078
Aug-94		
Sep-94		
Oct-94	121.7	1.35523
Nov-94		
Dec-94		
Jan-95	122.6	1.36526
Feb-95		
Mar-95		
Apr-95	123.4	1.37416
May-95		
Jun-95		
Jul-95	123.9	1.37973
Aug-95		
Sep-95		
Oct-95	125	1.39198
Nov-95		
Dec-95		
Jan-96	125.9	1.40200
Feb-96		
Mar-96		
Apr-96	127.3	1.41759
May-96		
Jun-96		
Jul-96	128.3	1.42873
Aug-96		
Sep-96		
Oct-96	128.9	1.43541
Nov-96		
Dec-96		
Jan-97	130.3	1.45100
Feb-97		
Mar-97		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
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	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Apr-97	131.4	1.46325
May-97		
Jun-97		
Jul-97	132.5	1.47550
Aug-97		
Sep-97		
Oct-97	133.4	1.48552
Nov-97		
Dec-97		
Jan-98	135.2	1.50557
Feb-98		
Mar-98		
Apr-98	136.6	1.52116
May-98		
Jun-98		
Jul-98	138.5	1.54232
Aug-98		
Sep-98		
Oct-98	140	1.55902
Nov-98		
Dec-98		
Jan-99	140.3	1.56236
Feb-99		
Mar-99		
Apr-99	142.1	1.58241
May-99		
Jun-99		
Jul-99	143.3	1.59577
Aug-99		
Sep-99		
Oct-99	144.7	1.61136
Nov-99		
Dec-99		
Jan-00	147	1.63697
Feb-00		
Mar-00		
Apr-00	148.8	1.65702
May-00		
Jun-00		
Jul-00	150.8	1.67929
Aug-00		
Sep-00		
Oct-00	151.8	1.69042
Nov-00		
Dec-00		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
Note 1: The Base Labor factor was reindexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Jan-01	84.1	0.93653
Feb-01		
Mar-01		
Apr-01	85	0.94655
May-01		
Jun-01		
Jul-01	85.9	0.95657
Aug-01		
Sep-01		
Oct-01	86.9	0.96771
Nov-01		
Dec-01		
Jan-02	87.4	0.97327
Feb-02		
Feb-02		
Mar-02		
Apr-02	88.5	0.98552
May-02		
Jun-02		
Jul-02	89.1	0.99220
Aug-02		
Sep-02		
Oct-02	89.8	1.00000
Nov-02		
Dec-02		
Jan-03	90.9	1.01225
Feb-03		
Mar-03		
Apr-03	92	1.02450
May-03		
Jun-03		
Jul-03	93.2	1.03786
Aug-03		
Sep-03		
Oct-03	93.8	1.04454
Nov-03		
Dec-03		
Jan-04	95.3	1.06125
Feb-04		
Mar-04		
Apr-04	96.2	1.07127
May-04		
Jun-04		
Jul-04	96.9	1.07906
Aug-04		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
Note 1: The Base Labor factor was reindexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Sep-04		
Oct-04	97.4	1.08463
Nov-04		
Dec-04		
Jan-05	98.4	1.09577
Feb-05		
Mar-05		
Apr-05	99.3	1.10579
May-05		
Jun-05		
Jul-05	99.7	1.11024
Aug-05		
Sep-05		
Oct-05 (Note 1)	100	2.06000
Nov-05		
Dec-05		
Jan-06	100.6	2.07236
Feb-06		
Mar-06		
Apr-06	101.8	2.09708
May-06		
Jun-06		
Jul-06	102.5	2.11150
Aug-06		
Sep-06		
Oct-06	103	2.12180
Nov-06		
Dec-06		
Jan-07	104.2	2.14652
Feb-07		
Mar-07		
Apr-07	104.9	2.16094
May-07		
Jun-07		
Jul-07	105.7	2.17742
Aug-07		
Sep-07		
Oct-07	106.5	2.19390
Nov-07		
Dec-07		
Jan-08	107.8	2.22068
Feb-08		
Mar-08		
Apr-08	108.4	2.23304
May-08		

Development of L Component

Calculation of Labor Escalation Factor - Reference NUREG-1307, Revision 14, Section 3.1
Using Regional Indices SERIES ID: CIU2010000000240I (as of 03/02/11)
January 1986 adjusted to reflect NUREG 1307 Revision 14 Scaling Factor for West Labor (Page 7).
Note 1: The Base Labor factor was reindexed in December 2005, at which time the index was reset to 100.

	Employment Cost Indust West Region Private Industry (1989 = 100)	Labor Escalation Factor
Jun-08		
Jul-08	109.3	2.25158
Aug-08		
Sep-08		
Oct-08	109.4	2.25364
Nov-08		
Dec-08		
Jan-09	109.9	2.26394
Feb-09		
Mar-09		
Apr-09	110.0	2.26600
May-09		
Jun-09		
Jul-09	110.3	2.27218
Aug-09		
Sep-09		
Oct-09	110.6	2.27836
Nov-09		
Dec-09		
Jan-10	111.4	2.29484
Feb-10		
Mar-10		
Apr-10	111.7	2.30102
May-10		
Jun-10		
Jul-10	112.3	2.31338
Aug-10		
Sep-10		
Oct-10	112.5	2.31750
Nov-10		
Dec-10		
Jan-11	112.7	2.32162

Jan-11 is an estimate based on difference between July 2010 and October 2010 and adding to the October 2010 base.

Table C-1 and Table C-2
Diablo Canyon Power Plant Unit 1
Decon Decommissioning Cost Estimate

Table C-1 and Table C-2
Diablo Canyon Power Plant Unit 2
Decon Decommissioning Cost Estimate

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
PERIOD 1a - Shutdown through Transition														
Period 1a Direct Decommissioning Activities														
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	156	32	188				
1a.1.2	Notification of Cessation of Operations	-	-	-	-	-	-	-	-	-				
1a.1.3	Remove fuel & source material	-	-	-	-	-	-	-	-	-				
1a.1.4	Notification of Permanent Defueling	-	-	-	-	-	-	-	-	-				
1a.1.5	Deactivate plant systems & process waste	-	-	-	-	-	-	-	-	-				
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	240	50	289				
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	551	114	666				
1a.1.8	Perform detailed rad survey	-	-	-	-	-	-	-	-	-				
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	120	25	145				
1a.1.10	End product description	-	-	-	-	-	-	120	25	145				
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	156	32	188				
1a.1.12	Define major work sequence	-	-	-	-	-	-	899	186	1,086				
1a.1.13	Perform SER and EA	-	-	-	-	-	-	372	77	449				
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	599	124	724				
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	491	102	593				
1a.1.16	Receive NRC approval of termination plan	-	-	-	-	-	-	-	-	-				
Activity Specifications														
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	590	122	712				
1a.1.17.2	Plant systems	-	-	-	-	-	-	500	104	603				
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	60	12	72				
1a.1.17.4	Reactor internals	-	-	-	-	-	-	851	176	1,028				
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	779	162	941				
1a.1.17.6	Biological shield	-	-	-	-	-	-	60	12	72				
1a.1.17.7	Steam generators	-	-	-	-	-	-	374	78	452				
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	192	40	232				
1a.1.17.9	Main Turbine	-	-	-	-	-	-	48	10	58				
1a.1.17.10	Main Condensers	-	-	-	-	-	-	48	10	58				
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	374	78	452				
1a.1.17.12	Waste management	-	-	-	-	-	-	551	114	666				
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	108	22	130				
1a.1.17	Total	-	-	-	-	-	-	4,535	940	5,475				
Planning & Site Preparations														
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	288	60	347				
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	560	3,260				
1a.1.20	Design water clean-up system	-	-	-	-	-	-	168	35	203				
1a.1.21	Rigging/Cont.Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	435	2,535				
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	147	31	178				
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	13,642	2,828	16,470				
Period 1a Additional Costs														
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	9,407	1,950	11,358				
1a.2	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	9,407	1,950	11,358				
Period 1a Collateral Costs														
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	836	173	1,009				
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	836	173	1,009				
Period 1a Period-Dependent Costs														
1a.4.1	Insurance	-	-	-	-	-	-	1,195	165	1,360				
1a.4.2	Property taxes	-	-	-	-	-	-	101	14	115				
1a.4.3	Health physics supplies	-	486	-	-	-	-	-	168	654				
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	102	591				
1a.4.5	Disposal of DAW generated	-	-	11	4	-	38	-	16	69	610			
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	276	1,605				
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	159	-	159				
1a.4.8	NCR Fees	-	-	-	-	-	-	706	98	803				
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	174	1,432				
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	152	887				
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	118	24	142				
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,594	330	1,925				
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	239	50	289				
1a.4.14	Security Staff Cost	-	-	-	-	-	-	775	161	936				
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	26,403	5,473	31,876				
1a.4	Subtotal 1a. Period-Dependent Costs	-	976	11	4	-	38	34,612	7,202	42,843	610			
1a.0	TOTAL PERIOD 1a COST	-	976	11	4	-	38	58,497	12,153	71,680	610			

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
PERIOD 1a - Shutdown through Transition										
Period 1a Direct Decommissioning Activities										
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	169	42	211
1a.1.2	Notification of Cessation of Operations	-	-	-	-	-	-	-	-	-
1a.1.3	Remove fuel & source material	-	-	-	-	-	-	-	-	-
1a.1.4	Notification of Permanent Defueling	-	-	-	-	-	-	-	-	-
1a.1.5	Deactivate plant systems & process waste	-	-	-	-	-	-	-	-	-
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	260	65	325
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	597	149	747
1a.1.8	Perform detailed rad survey	-	-	-	-	-	-	-	-	-
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	130	33	163
1a.1.10	End product description	-	-	-	-	-	-	130	33	163
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	169	42	211
1a.1.12	Define major work sequence	-	-	-	-	-	-	975	244	1,218
1a.1.13	Perform SER and EA	-	-	-	-	-	-	403	101	504
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	649	162	812
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	532	133	665
1a.1.16	Receive NRC approval of termination plan	-	-	-	-	-	-	-	-	-
Activity Specifications										
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	640	160	799
1a.1.17.2	Plant systems	-	-	-	-	-	-	542	136	678
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	65	16	81
1a.1.17.4	Reactor internals	-	-	-	-	-	-	922	231	1,153
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	844	211	1,056
1a.1.17.6	Biological shield	-	-	-	-	-	-	65	16	81
1a.1.17.7	Steam generators	-	-	-	-	-	-	405	101	507
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	208	52	260
1a.1.17.9	Main Turbine	-	-	-	-	-	-	52	13	65
1a.1.17.10	Main Condensers	-	-	-	-	-	-	52	13	65
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	405	101	507
1a.1.17.12	Waste management	-	-	-	-	-	-	597	149	747
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	117	29	146
1a.1.17	Total	-	-	-	-	-	-	4,916	1,229	6,145
Planning & Site Preparations										
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	312	78	390
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,927	732	3,659
1a.1.20	Design water clean-up system	-	-	-	-	-	-	182	46	228
1a.1.21	Rigging/Cont.Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,276	569	2,846
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	159	40	199
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	14,788	3,697	18,485
Period 1a Additional Costs										
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	10,197	2,549	12,746
1a.2	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	10,197	2,549	12,746
Period 1a Collateral Costs										
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	906	227	1,133
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	906	227	1,133
Period 1a Period-Dependent Costs										
1a.4.1	Insurance	-	-	-	-	-	-	1,295	324	1,619
1a.4.2	Property taxes	-	-	-	-	-	-	109	27	137
1a.4.3	Health physics supplies	-	527	-	-	-	-	-	132	659
1a.4.4	Heavy equipment rental	-	531	-	-	-	-	-	133	664
1a.4.5	Disposal of DAW generated	-	-	12	5	-	47	-	16	80
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,442	360	1,802
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	172	43	215
1a.4.8	NCR Fees	-	-	-	-	-	-	765	191	957
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,364	341	1,705
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	797	199	996
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	128	32	160
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,728	432	2,160
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	259	65	324
1a.4.14	Security Staff Cost	-	-	-	-	-	-	840	210	1,050
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	28,621	7,155	35,776
1a.4	Subtotal 1a. Period-Dependent Costs	-	1,058	12	5	-	47	37,519	9,660	48,302
1a.0	TOTAL PERIOD 1a COST	-	1,058	12	5	-	47	63,411	16,133	80,666

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 1b - Decommissioning Preparations														
Period 1b Direct Decommissioning Activities														
Detailed Work Procedures														
1b.1.1.1	Plant systems	-	-	-	-	-	-	567	118	685				
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	120	25	145				
1b.1.1.3	Reactor internals	-	-	-	-	-	-	300	62	362				
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	162	34	195				
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	120	25	145				
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	120	25	145				
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	120	25	145				
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	435	90	525				
1b.1.1.9	Facility closeout	-	-	-	-	-	-	144	30	174				
1b.1.1.10	Missile shields	-	-	-	-	-	-	54	11	65				
1b.1.1.11	Biological shield	-	-	-	-	-	-	144	30	174				
1b.1.1.12	Steam generators	-	-	-	-	-	-	551	114	666				
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	120	25	145				
1b.1.1.14	Main Turbine	-	-	-	-	-	-	187	39	226				
1b.1.1.15	Main Condenser	-	-	-	-	-	-	187	39	226				
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	327	68	395				
1b.1.1.17	Reactor building	-	-	-	-	-	-	327	68	395				
1b.1.1	Total	-	-	-	-	-	-	3,986	826	4,812				
1b.1.2	Decon primary loop	1,623	-	-	-	-	-	-	1,122	2,745				
1b.1	Subtotal Period 1b Activity Costs	1,623	-	-	-	-	-	3,986	1,948	7,557			-	-
Period 1b Additional Costs														
1b.2.1	Site Characterization	-	-	-	-	-	-	4,549	1,886	6,435				
1b.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	122	713				
1b.2.3	Mixed Waste Management	-	-	-	-	-	-	912	189	1,101				
1b.2	Subtotal Period 1b Activity Costs	-	-	-	-	-	-	6,051	2,197	8,248				
Period 1b Collateral Costs														
1b.3.1	Decon equipment	935	-	-	-	-	-	-	194	1,129				
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	289	1,684				
1b.3.3	Process liquid waste	64	-	188	786	-	6,988	-	2,648	10,674	400	2,403		
1b.3.4	Small tool allowance		2	-	-	-	-	-	0	3				
1b.3.5	Pipe cutting equipment	-	1,000	-		-	-	-	207	1,207				
1b.3.6	Decon rig	1,400	-	-	-	-	-	-	290	1,690				
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	496	103	599				
1b.3	Subtotal Period 1b Collateral Costs	2,399	1,002	188	786	-	6,988	1,891	3,731	16,986	400	2,403		
Period 1b Period-Dependent Costs														
1b.4.1	Decon supplies	28	-	-	-	-	-	-	10	38				
1b.4.2	Insurance	-	-	-	-	-	-	592	82	674				
1b.4.3	Property taxes	-	-	-	-	-	-	50	7	57				
1b.4.4	Health physics supplies	-	272	-	-	-	-	-	94	366				
1b.4.5	Heavy equipment rental	-	243	-	-	-	-	-	50	293				
1b.4.6	Disposal of DAW generated	-	-	7	2	-	22	-	9	40	354			
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,319	273	1,592				
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	95	-	95				
1b.4.9	NRC Fees	-	-	-	-	-	-	350	48	398				
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	369	51	420				
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	364	76	440				
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	70	14	84				
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,578	327	1,906				
1b.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	142	29	172				
1b.4.15	Security Staff Cost	-	-	-	-	-	-	385	80	464				
1b.4.16	DOC Staff Cost	-	-	-	-	-	-	5,260	1,090	6,350				
1b.4.17	Utility Staff Cost	-	-	-	-	-	-	13,172	2,730	15,902				
1b.4	Subtotal Period 1b Period-Dependent Costs	28	515	7	2	-	22	23,745	4,972	29,292	354		-	-
1b.0	TOTAL PERIOD 1b COST	1,051	1,517	195	789		7,010	35,672	12,849	29,292	354		-	-
PERIOD 1 TOTALS		4,051	2,493	206	793	-	7,048	94,170	25,002	133,763	1,364	2,403	-	-

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 1b - Decommissioning Preparations										
Period 1b Direct Decommissioning Activities										
Detailed Work Procedures										
1b.1.1.1	Plant systems	-	-	-	-	-	-	615	154	768
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	130	33	163
1b.1.1.3	Reactor internals	-	-	-	-	-	-	325	81	407
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	176	44	220
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	130	33	163
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	130	33	163
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	130	33	163
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	472	118	589
1b.1.1.9	Facility closeout	-	-	-	-	-	-	156	39	195
1b.1.1.10	Missile shields	-	-	-	-	-	-	59	15	73
1b.1.1.11	Biological shield	-	-	-	-	-	-	156	39	195
1b.1.1.12	Steam generators	-	-	-	-	-	-	597	149	747
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	130	33	163
1b.1.1.14	Main Turbine	-	-	-	-	-	-	203	51	253
1b.1.1.15	Main Condenser	-	-	-	-	-	-	203	51	253
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	354	89	443
1b.1.1.17	Reactor building	-	-	-	-	-	-	354	89	443
1b.1.1	Total	-	-	-	-	-	-	4,321	1,080	5,401
1b.1.2	Decon primary loop	1,759	-	-	-	-	-	-	440	2,199
1b.1	Subtotal Period 1b Activity Costs	1,759	-	-	-	-	-	4,321	1,520	7,600
Period 1b Additional Costs										
1b.2.1	Site Characterization	-	-	-	-	-	-	4,931	1,233	6,164
1b.2.2	Hazardous Waste Management	-	-	-	-	-	-	640	160	799
1b.2.3	Mixed Waste Management	-	-	-	-	-	-	989	247	1,236
1b.2	Subtotal Period 1b Activity Costs	-	-	-	-	-	-	6,559	1,640	8,199
Period 1b Collateral Costs										
1b.3.1	Decon equipment	1,014	-	-	-	-	-	-	253	1,267
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,512	378	1,890
1b.3.3	Process liquid waste	69	-	204	976	-	8,681	-	2,483	12,414
1b.3.4	Small tool allowance	-	2	-	-	-	-	-	1	3
1b.3.5	Pipe cutting equipment	-	1,084	-	-	-	-	-	271	1,355
1b.3.6	Decon rig	1,518	-	-	-	-	-	-	379	1,897
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	538	134	672
1b.3	Subtotal Period 1b Collateral Costs	2,601	1,086	204	976	-	8,681	2,050	3,899	19,497
Period 1b Period-Dependent Costs										
1b.4.1	Decon supplies	30	-	-	-	-	-	-	8	38
1b.4.2	Insurance	-	-	-	-	-	-	642	160	802
1b.4.3	Property taxes	-	-	-	-	-	-	54	14	68
1b.4.4	Health physics supplies	-	295	-	-	-	-	-	74	369
1b.4.5	Heavy equipment rental	-	263	-	-	-	-	-	66	329
1b.4.6	Disposal of DAW generated	-	-	8	2	-	27	-	9	47
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,430	357	1,787
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	103	-	103
1b.4.9	NRC Fees	-	-	-	-	-	-	379	95	474
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	400	100	500
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	395	99	493
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	76	19	95
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,711	428	2,138
1b.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	154	38	192
1b.4.15	Security Staff Cost	-	-	-	-	-	-	417	104	522
1b.4.16	DOC Staff Cost	-	-	-	-	-	-	5,702	1,425	7,127
1b.4.17	Utility Staff Cost	-	-	-	-	-	-	14,278	3,570	17,848
1b.4	Subtotal Period 1b Period-Dependent Costs	30	558	8	2	-	27	25,740	6,591	32,957
1b.0	TOTAL PERIOD 1b COST	1,139	1,644	211	980	-	8,709	38,668	12,838	64,190
PERIOD 1 TOTALS		4,391	2,702	223	985	-	8,756	102,080	29,785	148,923

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet
PERIOD 2a - Large Component Removal														
Period 2a Direct Decommissioning Activities														
Nuclear Steam Supply System Removal														
2a.1.1.1	Reactor Coolant Piping	305	287	40	40	-	766	-	588	2,027	2,141	-	-	-
2a.1.1.2	Pressurizer Quench Tank	32	29	6	6	-	108	-	72	254	329	-	-	-
2a.1.1.3	Reactor Coolant Pumps & Motors	120	101	44	121	-	1,358	-	618	2,360	5,388	-	-	-
2a.1.1.4	Pressurizer	38	59	454	295	-	620	-	385	1,852	2,460	-	-	-
2a.1.1.5	Steam Generators	394	3,846	2,686	1,924	2,974	5,939	-	5,040	22,803	23,568	-	-	-
2a.1.1.6	Retired Steam Generator Units	-	-	1,895	1,890	2,974	5,768	-	3,263	15,790	22,887	-	-	-
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	162	92	224	37	-	255	-	270	1,040	3,881	-	-	-
2a.1.1.8	Reactor Vessel Internals	144	2,231	5,070	914	-	4,579	234	7,692	20,864	1,753	845	574	-
2a.1.1.9	Reactor Vessel	100	4,159	1,598	651	-	8,548	234	11,113	26,404	6,416	2,379	-	-
2a.1.1	Totals	1,295	10,804	12,018	5,878	5,948	27,941	469	29,041	93,394	68,822	3,224	574	-
Removal of Major Equipment														
2a.1.2	Main Turbine/Generator	-	534	192	139	881	605	-	631	2,981	2,301	-	-	-
2a.1.3	Main Condensers	-	1,529	181	131	831	570	-	950	4,193	2,170	-	-	-
Cascading Costs from Clean Building Demolition														
2a.1.4.1	Reactor	-	1,208	-	-	-	-	-	250	1,458	-	-	-	-
2a.1.4.2	Containment Penetration Area	-	66	-	-	-	-	-	14	79	-	-	-	-
2a.1.4.3	Fuel Handling	-	175	-	-	-	-	-	36	212	-	-	-	-
2a.1.4	Totals	-	1,449	-	-	-	-	-	300	1,749	-	-	-	-
Disposal of Plant Systems														
2a.1.5.1	Auxiliary Steam	-	245	6	56	458	-	-	192	958	-	-	-	-
2a.1.5.2	Auxiliary Steam (RCA)	-	213	3	29	240	-	-	130	616	-	-	-	-
2a.1.5.3	Condensate System	-	1,131	68	592	4,856	-	-	1,530	8,176	-	-	-	-
2a.1.5.4	Condensate System (Insulated)	-	401	21	182	1,497	-	-	489	2,590	-	-	-	-
2a.1.5.5	Containment Spray	-	194	10	87	713	-	-	234	1,237	-	-	-	-
2a.1.5.6	Extraction Steam & Heater Drip	-	450	16	143	1,176	-	-	431	2,216	-	-	-	-
2a.1.5.7	Feedwater System	-	65	5	48	395	-	-	115	628	-	-	-	-
2a.1.5.8	Feedwater System (Insulated)	-	271	11	101	825	-	-	287	1,495	-	-	-	-
2a.1.5.9	Feedwater System (RCA Insulated)	-	98	3	24	199	-	-	81	405	-	-	-	-
2a.1.5.10	Feedwater System (RCA)	-	5	-	1	10	-	-	4	21	-	-	-	-
2a.1.5.11	Lube Oil Distribution & Purification	-	188	3	25	205	-	-	113	533	-	-	-	-
2a.1.5.12	Nitrogen & Hydrogen	-	17	-	-	-	-	-	3	20	-	-	-	-
2a.1.5.13	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	-	1	-	-	-	-
2a.1.5.14	Nitrogen & Hydrogen (RCA Insulated)	-	5	-	-	2	-	-	2	9	-	-	-	-
2a.1.5.15	Nitrogen & Hydrogen (RCA)	-	87	1	5	38	-	-	39	169	-	-	-	-
2a.1.5.16	Oily Water Separator & TB Sump	-	30	1	8	63	-	-	25	126	-	-	-	-
2a.1.5.17	Saltwater System	-	162	-	-	-	-	-	33	195	-	-	-	-
2a.1.5.18	Turbine Steam Supply	-	1,227	80	700	5,742	-	-	1,770	9,519	-	-	-	-
2a.1.5.19	Turbine Steam Supply (RCA)	-	671	22	182	1,497	-	-	583	2,954	-	-	-	-
2a.1.5.20	Turbine and Generator	-	116	4	37	300	-	-	110	567	-	-	-	-
2a.1.5.21	Turbine and Generator (Insulated)	-	49	1	8	63	-	-	32	152	-	-	-	-
2a.1.5	Totals	-	5,622	256	2,228	18,278	-	-	6,204	32,587	-	-	-	-
2a.1.6	Scaffolding in support of decommissioning	-	2,311	12	9	67	10	-	819	3,227	37	-	-	-
2a.1	Subtotal Period 2a Activity Costs	1,295	22,249	12,658	8,384	26,006	29,126	469	37,945	138,131	73,330	3,224	574	-
Period 2a Additional Costs														
2a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	528	1,355	2,002	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	102	151	55	-	503	15	528	1,355	2,002	-	-	-
			-											
Period 2a Collateral Costs			-											
2a.3.1	Process liquid waste	106	-	49	196	-	183	-	184	718	725	-	-	-
2a.3.2	Small tool allowance	-	299	-	-	-	-	-	62	361	-	-	-	-
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,586	329	1,915	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	106	299	49	196	-	183	1,586	575	2,994	725	-	-	-

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
PERIOD 2a - Large Component Removal										
Period 2a Direct Decommissioning Activities										
Nuclear Steam Supply System Removal										
2a.1.1.1	Reactor Coolant Piping	331	311	43	50	-	952	-	422	2,108
2a.1.1.2	Pressurizer Quench Tank	35	31	7	7	-	134	-	54	268
2a.1.1.3	Reactor Coolant Pumps & Motors	130	109	48	150	-	1,687	-	531	2,656
2a.1.1.4	Pressurizer	41	64	492	150	-	770	-	379	1,897
2a.1.1.5	Steam Generators	427	4,169	2,912	366	3,695	7,378	-	4,737	23,684
2a.1.1.6	Retired Steam Generator Units	-	-	2,054	2,390	3,695	7,166	-	3,826	19,131
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	176	100	243	2,348	-	317	-	796	3,979
2a.1.1.8	Reactor Vessel Internals	156	2,418	5,496	46	-	5,688	254	3,515	17,573
2a.1.1.9	Reactor Vessel	108	4,508	1,732	1,135	-	10,619	254	4,589	22,947
2a.1.1	Totals	1,404	11,712	13,028	809	7,389	34,711	508	17,390	86,950
Removal of Major Equipment										
2a.1.2	Main Turbine/Generator	-	579	208	173	1,094	752	-	701	3,507
2a.1.3	Main Condensers	-	1,657	196	163	1,032	708	-	939	4,696
Cascading Costs from Clean Building Demolition										
2a.1.4.1	Reactor	-	1,309	-	-	-	-	-	327	1,637
2a.1.4.2	Containment Penetration Area	-	72	-	-	-	-	-	18	89
2a.1.4.3	Fuel Handling	-	190	-	-	-	-	-	47	237
2a.1.4	Totals	-	1,571	-	-	-	-	-	393	1,963
Disposal of Plant Systems										
2a.1.5.1	Auxiliary Steam	-	266	7	70	569	-	-	228	1,138
2a.1.5.2	Auxiliary Steam (RCA)	-	231	3	36	298	-	-	142	710
2a.1.5.3	Condensate System	-	1,226	74	735	6,033	-	-	2,017	10,085
2a.1.5.4	Condensate System (Insulated)	-	435	23	226	1,860	-	-	636	3,179
2a.1.5.5	Containment Spray	-	210	11	108	886	-	-	304	1,519
2a.1.5.6	Extraction Steam & Heater Drip	-	488	17	178	1,461	-	-	536	2,680
2a.1.5.7	Feedwater System	-	70	5	60	491	-	-	157	783
2a.1.5.8	Feedwater System (Insulated)	-	294	12	125	1,025	-	-	364	1,820
2a.1.5.9	Feedwater System (RCA Insulated)	-	106	3	30	247	-	-	97	483
2a.1.5.10	Feedwater System (RCA)	-	5	-	1	12	-	-	5	24
2a.1.5.11	Lube Oil Distribution & Purification	-	204	3	31	255	-	-	123	616
2a.1.5.12	Nitrogen & Hydrogen	-	18	-	-	-	-	-	5	23
2a.1.5.13	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	0	1
2a.1.5.14	Nitrogen & Hydrogen (RCA Insulated)	-	5	-	-	2	-	-	2	10
2a.1.5.15	Nitrogen & Hydrogen (RCA)	-	94	1	6	47	-	-	37	186
2a.1.5.16	Oily Water Separator & TB Sump	-	33	1	10	78	-	-	30	152
2a.1.5.17	Saltwater System	-	176	-	-	-	-	-	44	220
2a.1.5.18	Turbine Steam Supply	-	1,330	87	870	7,133	-	-	2,355	11,775
2a.1.5.19	Turbine Steam Supply (RCA)	-	727	24	226	1,860	-	-	709	3,546
2a.1.5.20	Turbine and Generator	-	126	4	46	373	-	-	137	686
2a.1.5.21	Turbine and Generator (Insulated)	-	53	1	10	78	-	-	36	178
2a.1.5	Totals	-	6,094	278	2,768	22,707	-	-	7,962	39,808
2a.1.6	Scaffolding in support of decommissioning	-	2,505	13	11	83	12	-	656	3,281
2a.1	Subtotal Period 2a Activity Costs	1,404	24,118	13,721	10,415	32,307	36,183	508	29,664	148,322
Period 2a Additional Costs										
2a.2.1	Retired Reactor Head	-	111	164	68	-	625	16	246	1,230
2a.2	Subtotal Period 2a Additional Costs	-	111	164	68	-	625	16	246	1,230
Period 2a Collateral Costs										
2a.3.1	Process liquid waste	115	-	53	243	-	227	-	160	799
2a.3.2	Small tool allowance	-	324	-	-	-	-	-	81	405
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,719	430	2,149
2a.3	Subtotal Period 2a Collateral Costs	115	324	53	243	-	227	1,719	671	3,353

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet
Period 2a Period-Dependent Costs														
2a.4.1	Decon supplies	91	-	-	-	-	-	-	31	122	-		-	
2a.4.2	Insurance	-	-	-	-	-	-	699	97	796	-		-	
2a.4.3	Property taxes	-	-	-	-	-	-	160	22	182	-		-	
2a.4.4	Health physics supplies	-	2,049	-	-	-	-	-	708	2,756	-		-	
2a.4.5	Heavy equipment rental	-	3,735	-	-	-	-	-	774	4,509	-		-	
2a.4.6	Disposal of DAW generated	-	-	97	36	-	320	-	131	584	5,158		-	
2a.4.7	Plant energy budget	-	-	-	-	-	-	2,004	415	2,419	-		-	
2a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	302	-	302	-		-	
2a.4.9	NRC Fees	-	-	-	-	-	-	1,044	144	1,188	-		-	
2a.4.10	Emergency Planning Fees	-	-	-	-	-	-	892	123	1,015	-		-	
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	1,165	242	1,407	-		-	
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	224	46	270	-		-	
2a.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	6,026	1,249	7,276	-		-	
2a.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	454	94	549	-		-	
2a.4.15	Security Staff Cost	-	-	-	-	-	-	1,151	239	1,390	-		-	
2a.4.16	DOC Staff Cost	-	-	-	-	-	-	20,607	4,272	24,879	-		-	
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	29,137	6,040	35,177	-		-	
2a.4	Subtotal Period 2a Period-Dependent Costs	91	5,784	97	36	-	320	63,867	14,629	84,823	5,158		-	
2a.0	TOTAL PERIOD 2a COSTS	1,492	28,433	12,955	8,671	26,006	30,131	65,937	53,676	227,302	81,215	3,224	574	-
PERIOD 2b - Site Decontamination														
Period 2b Direct Decommissioning Activities														
Disposal of Plant Systems														
2b.1.1.1	Capital Additions 85-2002 (clean)	-	155	-	-	-	-	-	32	187	-		-	-
2b.1.1.2	Capital Additions 85-2002 (contaminated)	-	353	3	28	234	-	-	177	795	-		-	-
2b.1.1.3	Chemical & Volume Control	725	948	62	87	475	573	-	1,152	4,023	2,316		-	-
2b.1.1.4	Chemical & Volume Control (Insulated)	265	341	19	13	40	161	-	370	1,210	615		-	-
2b.1.1.5	Component Cooling Water	-	166	-	-	-	-	-	34	201	-		-	-
2b.1.1.6	Component Cooling Water (RCA)	-	478	13	107	876	-	-	371	1,844	-		-	-
2b.1.1.7	Compressed Air	-	148	-	-	-	-	-	31	178	-		-	-
2b.1.1.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6	-		-	-
2b.1.1.9	Compressed Air (RCA Insulated)	-	22	-	1	10	-	-	10	45	-		-	-
2b.1.1.10	Compressed Air RCA	-	413	3	24	199	-	-	190	830	-		-	-
2b.1.1.11	Diesel Engine-Generator	-	152	-	-	-	-	-	32	184	-		-	-
2b.1.1.12	Diesel Engine-Generator (Insulated)	-	10	-	-	-	-	-	2	12	-		-	-
2b.1.1.13	Electrical (Clean)	-	1,809	-	-	-	-	-	375	2,184	-		-	-
2b.1.1.14	Electrical (Contaminated)	-	491	9	63	505	35	-	301	1,404	132		-	-
2b.1.1.15	Electrical (Decontaminated)	-	3,025	73	612	5,022	-	-	2,223	10,955	-		-	-
2b.1.1.16	Fire Protection	-	311	11	93	761	-	-	286	1,460	-		-	-
2b.1.1.17	Gaseous Radwaste	-	66	4	3	14	28	-	36	151	105		-	-
2b.1.1.18	HVAC (Clean Insulated)	-	24	-	-	-	-	-	5	29	-		-	-
2b.1.1.19	HVAC (Clean)	-	304	-	-	-	-	-	63	367	-		-	-
2b.1.1.20	HVAC (Contaminated Insulated)	-	254	6	36	281	30	-	165	772	114		-	-
2b.1.1.21	HVAC (Contaminated)	-	1,128	34	178	1,381	183	-	781	3,684	695		-	-
2b.1.1.22	Liquid Radwaste	478	598	48	44	172	440	-	741	2,521	1,886		-	-
2b.1.1.23	Liquid Radwaste (Insulated)	56	63	4	2	5	36	-	75	241	135		-	-
2b.1.1.24	Make-up Water	-	306	-	-	-	-	-	63	369	-		-	-
2b.1.1.25	Make-up Water (Insulated)	-	28	-	-	-	-	-	6	34	-		-	-
2b.1.1.26	Make-up Water (RCA Insulated)	-	34	-	3	28	-	-	18	84	-		-	-
2b.1.1.27	Make-up Water (RCA)	-	180	2	19	157	-	-	99	458	-		-	-
2b.1.1.28	Miscellaneous Reactor Coolant	17	98	4	5	29	31	-	64	250	124		-	-
2b.1.1.29	Nuclear Steam Supply Sampling	-	146	4	6	31	35	-	71	292	133		-	-
2b.1.1.30	Nuclear Steam Supply Sampling (Insulated)	-	44	1	1	1	8	-	19	73	31		-	-
2b.1.1.31	Residual Heat Removal	275	258	56	68	309	589	-	569	2,124	2,242		-	-
2b.1.1.32	Safety Injection	-	101	4	11	76	31	-	64	287	121		-	-
2b.1.1.33	Safety Injection (Insulated)	-	5	-	-	3	2	-	3	13	7		-	-
2b.1.1.34	Safety Injection (RCA Insulated)	-	32	2	4	23	17	-	23	100	64		-	-
2b.1.1.35	Safety Injection (RCA)	-	270	17	33	205	151	-	197	874	576		-	-
2b.1.1.36	Service Cooling Water	-	100	-	-	-	-	-	21	121	-		-	-
2b.1.1.37	Service Cooling Water (RCA)	-	23	-	3	26	-	-	14	67	-		-	-
2b.1.1	Totals	1,817	12,889	382	1,445	10,864	2,349	-	8,681	38,426	9,297		-	
2b.1.2	Scaffolding in support of decommissioning	-	2,889	15	11	84	12	-	1,024	4,034	46		-	-
Decontamination of Site Buildings														
2b.1.3.1	Reactor	1,524	1,737	381	349	426	3,703	-	3,146	11,265	20,482		-	-
2b.1.3.2	Capital Additions 85-2004	27	23	1	4	40	3	-	36	133	14		-	-
2b.1.3.3	Containment Penetration Area	266	188	29	33	120	394	-	421	1,450	1,509		-	-
2b.1.3	Totals	1,817	1,947	410	386	586	4,099	-	3,603	12,848	22,005		-	-
2b.1	Subtotal Period 2b Activity Costs	3,634	17,724	807	1,842	11,533	6,460	-	13,308	55,308	31,348		-	

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2a Period-Dependent Costs										
2a.4.1	Decon supplies	99	-	-	-	-	-	-	25	123
2a.4.2	Insurance	-	-	-	-	-	-	758	189	947
2a.4.3	Property taxes	-	-	-	-	-	-	173	43	217
2a.4.4	Health physics supplies	-	2,221	-	-	-	-	-	555	2,776
2a.4.5	Heavy equipment rental	-	4,049	-	-	-	-	-	1,012	5,061
2a.4.6	Disposal of DAW generated	-	-	105	45	-	398	-	137	684
2a.4.7	Plant energy budget	-	-	-	-	-	-	2,172	543	2,715
2a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	327	-	327
2a.4.9	NRC Fees	-	-	-	-	-	-	1,132	283	1,415
2a.4.10	Emergency Planning Fees	-	-	-	-	-	-	967	242	1,209
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	1,263	316	1,579
2a.4.12	ISFSI Operating Costs	-	-	-	-	-	-	243	61	304
2a.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	6,532	1,633	8,165
2a.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	492	123	615
2a.4.15	Security Staff Cost	-	-	-	-	-	-	1,248	312	1,560
2a.4.16	DOC Staff Cost	-	-	-	-	-	-	22,338	5,584	27,922
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	31,585	7,896	39,481
2a.4	Subtotal Period 2a Period-Dependent Costs	99	6,270	105	45	-	398	69,232	19,037	95,185
2a.0	TOTAL PERIOD 2a COSTS	1,617	30,821	14,043	10,772	32,307	37,432	71,476	49,617	248,086
PERIOD 2b - Site Decontamination										
Period 2b Direct Decommissioning Activities										
Disposal of Plant Systems										
2b.1.1.1	Capital Additions 85-2002 (clean)	-	168	-	-	-	-	-	42	210
2b.1.1.2	Capital Additions 85-2002 (contaminated)	-	383	3	35	291	-	-	178	889
2b.1.1.3	Chemical & Volume Control	786	1,028	67	108	590	712	-	823	4,113
2b.1.1.4	Chemical & Volume Control (Insulated)	287	370	21	16	50	200	-	236	1,179
2b.1.1.5	Component Cooling Water	-	180	-	-	-	-	-	45	225
2b.1.1.6	Component Cooling Water (RCA)	-	518	14	133	1,088	-	-	438	2,192
2b.1.1.7	Compressed Air	-	160	-	-	-	-	-	40	201
2b.1.1.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	7
2b.1.1.9	Compressed Air (RCA Insulated)	-	24	-	1	12	-	-	9	47
2b.1.1.10	Compressed Air RCA	-	448	3	30	247	-	-	182	910
2b.1.1.11	Diesel Engine-Generator	-	165	-	-	-	-	-	41	206
2b.1.1.12	Diesel Engine-Generator (Insulated)	-	11	-	-	-	-	-	3	14
2b.1.1.13	Electrical (Clean)	-	1,961	-	-	-	-	-	490	2,451
2b.1.1.14	Electrical (Contaminated)	-	532	10	78	627	43	-	323	1,614
2b.1.1.15	Electrical (Decontaminated)	-	3,279	79	760	6,239	-	-	2,589	12,947
2b.1.1.16	Fire Protection	-	337	12	116	945	-	-	352	1,762
2b.1.1.17	Gaseous Radwaste	-	72	4	4	17	35	-	33	165
2b.1.1.18	HVAC (Clean Insulated)	-	26	-	-	-	-	-	7	33
2b.1.1.19	HVAC (Clean)	-	330	-	-	-	-	-	82	412
2b.1.1.20	HVAC (Contaminated Insulated)	-	275	7	45	349	37	-	178	891
2b.1.1.21	HVAC (Contaminated)	-	1,223	37	221	1,716	227	-	856	4,280
2b.1.1.22	Liquid Radwaste	518	648	52	55	214	547	-	508	2,542
2b.1.1.23	Liquid Radwaste (Insulated)	61	68	4	2	6	45	-	47	233
2b.1.1.24	Make-up Water	-	332	-	-	-	-	-	83	415
2b.1.1.25	Make-up Water (Insulated)	-	30	-	-	-	-	-	8	38
2b.1.1.26	Make-up Water (RCA Insulated)	-	37	-	4	35	-	-	19	94
2b.1.1.27	Make-up Water (RCA)	-	195	2	24	195	-	-	104	520
2b.1.1.28	Miscellaneous Reactor Coolant	18	106	4	6	36	39	-	52	262
2b.1.1.29	Nuclear Steam Supply Sampling	-	158	4	7	39	43	-	63	315
2b.1.1.30	Nuclear Steam Supply Sampling (Insulated)	-	48	1	1	1	10	-	15	77
2b.1.1.31	Residual Heat Removal	298	280	61	84	384	732	-	460	2,298
2b.1.1.32	Safety Injection	-	109	4	14	94	39	-	65	326
2b.1.1.33	Safety Injection (Insulated)	-	5	-	-	4	2	-	3	15
2b.1.1.34	Safety Injection (RCA Insulated)	-	35	2	5	29	21	-	23	114
2b.1.1.35	Safety Injection (RCA)	-	293	18	41	255	188	-	199	993
2b.1.1.36	Service Cooling Water	-	108	-	-	-	-	-	27	136
2b.1.1.37	Service Cooling Water (RCA)	-	25	-	4	32	-	-	15	76
2b.1.1	Totals	1,970	13,972	414	1,795	13,496	2,918	-	8,641	43,206
2b.1.2	Scaffolding in support of decommissioning	-	3,132	16	14	104	15	-	820	4,101
Decontamination of Site Buildings										
2b.1.3.1	Reactor	1,652	1,883	413	434	529	4,600	-	2,378	11,889
2b.1.3.2	Capital Additions 85-2004	29	25	1	5	50	4	-	28	142
2b.1.3.3	Containment Penetration Area	288	204	31	41	149	489	-	301	1,504
2b.1.3	Totals	1,970	2,111	444	480	728	5,092	-	2,706	13,530
2b.1	Subtotal Period 2b Activity Costs	3,939	19,213	875	2,288	14,327	8,025	-	12,167	60,835

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 2b Collateral Costs														
2b.3.1	Process liquid waste	210	-	189	779	-	1,011	-	682	2,873	2,821			
2b.3.2	Small tool allowance	-	366	-	-	-	-	-	76	441				
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	898	186	1,084				
2b.3	Subtotal Period 2b Collateral Costs	210	366	189	779	-	1,011	898	944	4,399	2,821			
Period 2b Period-Dependent Costs														
2b.4.1	Decon supplies	792	-	-	-	-	-	-	274	1,066				
2b.4.2	Insurance	-	-	-	-	-	-	846	117	963				
2b.4.3	Property taxes	-	-	-	-	-	-	194	27	220				
2b.4.4	Health physics supplies	-	2,360	-	-	-	-	-	815	3,176				
2b.4.5	Heavy equipment rental	-	4,490	-	-	-	-	-	931	5,420				
2b.4.6	Disposal of DAW generated	-	-	89	33	-	294	-	121	536	4,735			
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,915	397	2,312				
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	366	-	366				
2b.4.9	NRC Fees	-	-	-	-	-	-	1,264	175	1,439				
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	715	99	814				
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	918	190	1,108				
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,411	293	1,704				
2b.4.13	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	369	76	445				
2b.4.14	ISFSI Operating Costs	-	-	-	-	-	-	271	56	327				
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	5,128	1,063	6,191				
2b.4.16	ISFSI Fixed Costs	-	-	-	-	-	-	550	114	664				
2b.4.17	Security Staff Cost	-	-	-	-	-	-	1,394	289	1,683				
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	17,184	3,562	20,747				
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	25,221	5,228	30,450				
2b.4	Subtotal Period 2b Period-Dependent Costs	792	6,850	89	33	-	294	57,747	13,827	79,632	4,735			
2b.0	TOTAL PERIOD 2b COSTS	4,636	24,940	1,086	2,654	11,533	7,765	58,645	28,079	139,339	38,904			
Period 2c - Wet Fuel Storage														
Period 2c Direct Decommissioning Activities														
Period 2c Collateral Costs														
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	9,873	2,047	11,920				
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	9,873	2,047	11,920				
Period 2c Period-Dependent Costs														
2c.4.1	Insurance	-	-	-	-	-	-	3,474	480	3,954				
2c.4.2	Property taxes	-	-	-	-	-	-	805	111	917				
2c.4.3	Health physics supplies	-	701	-	-	-	-	-	242	943				
2c.4.4	Disposal of DAW generated	-	-	15	6	-	49	-	20	90	797			
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,016	418	2,434				
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,522	-	1,522				
2c.4.7	NRC Fees	-	-	-	-	-	-	1,457	201	1,659				
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,974	411	3,386				
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,050	839	4,889				
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	5,868	1,216	7,084				
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	1,125	233	1,359				
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	44,027	9,127	53,154				
2c.4.13	ISFSI Fixed Costs	-	-	-	-	-	-	2,288	474	2,762				
2c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,990	1,449	8,439				
2c.4	Subtotal Period 2c Period-Dependent Costs	-	701	15	6	-	49	76,596	15,223	92,590	797			
2c.0	TOTAL PERIOD 2c COSTS	-	701	15	6	-	49	86,469	17,270	104,510	797			

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2b Collateral Costs										
2b.3.1	Process liquid waste	228	-	205	968	-	1,256	-	664	3,320
2b.3.2	Small tool allowance	-	397	-	-	-	-	-	99	496
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	973	243	1,217
2b.3	Subtotal Period 2b Collateral Costs	228	397	205	968	-	1,256	973	1,007	5,033
Period 2b Period-Dependent Costs										
2b.4.1	Decon supplies	859	-	-	-	-	-	-	215	1,073
2b.4.2	Insurance	-	-	-	-	-	-	917	229	1,146
2b.4.3	Property taxes	-	-	-	-	-	-	210	53	263
2b.4.4	Health physics supplies	-	2,558	-	-	-	-	-	640	3,198
2b.4.5	Heavy equipment rental	-	4,867	-	-	-	-	-	1,217	6,084
2b.4.6	Disposal of DAW generated	-	-	96	41	-	365	-	126	628
2b.4.7	Plant energy budget	-	-	-	-	-	-	2,076	519	2,595
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	397	-	397
2b.4.9	NRC Fees	-	-	-	-	-	-	1,370	343	1,713
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	775	194	969
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	995	249	1,244
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,530	382	1,912
2b.4.13	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	400	100	500
2b.4.14	ISFSI Operating Costs	-	-	-	-	-	-	294	73	367
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	5,559	1,390	6,948
2b.4.16	ISFSI Fixed Costs	-	-	-	-	-	-	596	149	745
2b.4.17	Security Staff Cost	-	-	-	-	-	-	1,511	378	1,889
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	18,627	4,657	23,284
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	27,340	6,835	34,174
2b.4	Subtotal Period 2b Period-Dependent Costs	859	7,425	96	41	-	365	62,598	17,846	89,230
2b.0	TOTAL PERIOD 2b COSTS	5,025	27,035	1,177	3,297	14,327	9,646	63,571	31,020	155,100
Period 2c - Wet Fuel Storage										
Period 2c Direct Decommissioning Activities										
Period 2c Collateral Costs										
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	10,702	2,676	13,378
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	10,702	2,676	13,378
Period 2c Period-Dependent Costs										
2c.4.1	Insurance	-	-	-	-	-	-	3,766	941	4,707
2c.4.2	Property taxes	-	-	-	-	-	-	873	218	1,091
2c.4.3	Health physics supplies	-	760	-	-	-	-	-	190	950
2c.4.4	Disposal of DAW generated	-	-	16	7	-	61	-	21	106
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,185	546	2,732
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,650	412	2,062
2c.4.7	NRC Fees	-	-	-	-	-	-	1,579	395	1,974
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	3,224	-	3,224
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,390	1,098	5,488
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	6,361	1,590	7,951
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	1,220	305	1,524
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	47,725	11,931	59,657
2c.4.13	ISFSI Fixed Costs	-	-	-	-	-	-	2,480	620	3,100
2c.4.14	Utility Staff Cost	-	-	-	-	-	-	7,577	1,894	9,471
2c.4	Subtotal Period 2c Period-Dependent Costs	-	760	16	7	-	61	83,030	20,969	104,843
2c.0	TOTAL PERIOD 2c COSTS	-	760	16	7	-	61	93,732	23,644	118,221

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 2d - Decontamination Following Wet Fuel Storage														
Period 2d Direct Decommissioning Activities														
2d.1.1	Remove Spent Fuel Racks	477	47	136	34	-	656	-	598	1,948	2,496	-	-	-
Disposal of Plant Systems														
2d.1.2.1	Electrical (Contaminated) - FHB	-	142	1	10	77	5	-	69	305	20	-	-	-
2d.1.2.2	Electrical (Decontaminated) - FHB	-	880	11	90	742	-	-	478	2,202	-	-	-	-
2d.1.2.3	Fire Protection (RCA)	-	191	2	20	162	-	-	104	478	-	-	-	-
2d.1.2.4	HVAC (Contaminated) - FHB	-	268	8	41	320	36	-	181	854	138	-	-	-
2d.1.2.5	Spent Fuel Pit Cooling	-	70	22	26	117	221	-	133	588	841	-	-	-
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	97	24	27	125	237	-	150	660	903	-	-	-
2d.1.2	Totals	-	1,649	68	214	1,543	499	-	1,116	5,088	1,902	-	-	-
Decontamination of Site Buildings														
2d.1.3.1	Fuel Handling	665	723	39	48	206	510	-	944	3,134	1,965	-	-	-
2d.1.3	Totals	665	723	39	48	206	510	-	944	3,134	1,965	-	-	-
2d.1.4	Scaffolding in support of decommissioning	-	578	3	2	17	2	-	205	807	9	-	-	-
2d.1	Subtotal Period 2d Activity Costs	1,142	2,996	246	298	1,765	1,668	-	2,862	10,977	6,372	-	-	-
Period 2d Additional Costs														
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	669	277	946	-	-	-	-
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	669	277	946	-	-	-	-
Period 2d Collateral Costs														
2d.3.1	Process liquid waste	116	-	53	215	-	200	-	201	785	794	-	-	-
2d.3.2	Small tool allowance	-	72	-	-	-	-	-	15	87	-	-	-	-
2d.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	99	-	215	1,229	378	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	116	72	174	322	686	299	-	432	2,101	1,172	-	-	-
Period 2d Period-Dependent Costs														
2d.4.1	Decon Supplies	210	-	-	-	-	-	-	73	283	-	-	-	-
2d.4.2	Insurance	-	-	-	-	-	-	177	24	201	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	46	6	53	-	-	-	-
2d.4.4	Health physics supplies	-	443	-	-	-	-	-	153	597	-	-	-	-
2d.4.5	Heavy Equipment Rental	-	1,076	-	-	-	-	-	223	1,299	-	-	-	-
2d.4.6	Disposal of DAW generated	-	-	26	10	-	87	-	36	159	1,400	-	-	-
2d.4.7	Plant energy budget	-	-	-	-	-	-	245	51	296	-	-	-	-
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	88	-	88	-	-	-	-
2d.4.9	NRC Fees	-	-	-	-	-	-	303	42	345	-	-	-	-
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	171	24	195	-	-	-	-
2d.4.11	Spent Fuel Transfer - Pool or SFSI to DOE	-	-	-	-	-	-	207	43	250	-	-	-	-
2d.4.12	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	177	37	213	-	-	-	-
2d.4.13	ISFSI Operating Costs	-	-	-	-	-	-	65	13	78	-	-	-	-
2d.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	132	27	159	-	-	-	-
2d.4.15	Security Staff Cost	-	-	-	-	-	-	182	38	220	-	-	-	-
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	2,769	574	3,343	-	-	-	-
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	3,526	731	4,257	-	-	-	-
2d.4	Subtotal Period 2d Period-Dependent Costs	210	1,519	26	10	-	87	8,088	2,095	12,036	1,400	-	-	-
2d.0	TOTAL PERIOD 2d COST	1,469	4,587	446	630	2,451	2,054	8,757	5,666	26,060	8,944	-	-	-
PERIOD 2e - License Termination														
Period 2e Direct Decommissioning Acticities														
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	63	216	-	-	-	-
2e.1.2	Terminate license	-	-	-	-	-	-	-	-	-	-	-	-	-
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	153	63	216	-	-	-	-
Period 2e Additional Costs														
2e.2.1	License Termination Survey	-	-	-	-	-	-	8,178	3,390	11,568	-	-	-	-
2e.2	Subtotal 2e Additional Costs	-	-	-	-	-	-	8,178	3,390	11,568	-	-	-	-
Period 2e Collateral Costs														
2e.3.1	DOC Staff relocation expenses	-	-	-	-	-	-	1,395	289	1,684	-	-	-	-
2e.3	Subtotal 2e Collateral Costs	-	-	-	-	-	-	1,395	289	1,684	-	-	-	-

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2d - Decontamination Following Wet Fuel Storage										
Period 2d Direct Decommissioning Activities										
2d.1.1	Remove Spent Fuel Racks	517	51	147	42	-	815	-	393	1,966
Disposal of Plant Systems										
2d.1.2.1	Electrical (Contaminated) - FHB	-	154	1	12	96	6	-	67	337
2d.1.2.2	Electrical (Decontaminated) - FHB	-	954	12	112	922	-	-	500	2,499
2d.1.2.3	Fire Protection (RCA)	-	207	2	25	201	-	-	109	544
2d.1.2.4	HVAC (Contaminated) - FHB	-	291	9	51	398	45	-	198	990
2d.1.2.5	Spent Fuel Pit Cooling	-	76	24	32	145	275	-	138	690
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	105	26	34	155	294	-	154	768
2d.1.2	Totals	-	1,788	74	266	1,917	620	-	1,166	5,830
Decontamination of Site Buildings										
2d.1.3.1	Fuel Handling	721	784	42	60	256	634	-	624	3,120
2d.1.3	Totals	721	784	42	60	256	634	-	624	3,120
2d.1.4	Scaffolding in support of decommissioning	-	627	3	2	21	2	-	164	820
2d.1	Subtotal Period 2d Activity Costs	1,238	3,248	267	370	2,193	2,072	-	2,347	11,734
Period 2d Additional Costs										
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	725	181	906
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	725	181	906
Period 2d Collateral Costs										
2d.3.1	Process liquid waste	126	-	57	267	-	248	-	175	873
2d.3.2	Small tool allowance	-	78	-	-	-	-	-	20	98
2d.3.3	Decommissioning Equipment Disposition	-	-	131	133	852	123	-	310	1,549
2d.3	Subtotal Period 2d Collateral Costs	126	78	189	400	852	371	-	504	2,520
Period 2d Period-Dependent Costs										
2d.4.1	Decon Supplies	228	-	-	-	-	-	-	57	285
2d.4.2	Insurance	-	-	-	-	-	-	192	48	240
2d.4.3	Property taxes	-	-	-	-	-	-	50	12	62
2d.4.4	Health physics supplies	-	480	-	-	-	-	-	120	600
2d.4.5	Heavy Equipment Rental	-	1,166	-	-	-	-	-	292	1,458
2d.4.6	Disposal of DAW generated	-	-	28	12	-	108	-	37	186
2d.4.7	Plant energy budget	-	-	-	-	-	-	266	66	332
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	95	-	95
2d.4.9	NRC Fees	-	-	-	-	-	-	328	82	411
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	185	46	232
2d.4.11	Spent Fuel Transfer - Pool or SFSI to DOE	-	-	-	-	-	-	224	56	280
2d.4.12	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	192	48	240
2d.4.13	ISFSI Operating Costs	-	-	-	-	-	-	70	18	88
2d.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	143	36	179
2d.4.15	Security Staff Cost	-	-	-	-	-	-	197	49	247
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	3,002	750	3,752
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	3,822	956	4,778
2d.4	Subtotal Period 2d Period-Dependent Costs	228	1,647	28	12	-	108	8,767	2,698	13,488
2d.0	TOTAL PERIOD 2d COST	1,592	4,972	483	783	3,045	2,552	9,493	5,730	28,650
PERIOD 2e - License Termination										
Period 2e Direct Decommissioning Acticities										
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	41	207
2e.1.2	Terminate license	-	-	-	-	-	-	-	-	-
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	166	41	207
Period 2e Additional Costs										
2e.2.1	License Termination Survey	-	-	-	-	-	-	8,865	2,216	11,081
2e.2	Subtotal 2e Additional Costs	-	-	-	-	-	-	8,865	2,216	11,081
Period 2e Collateral Costs										
2e.3.1	DOC Staff relocation expenses	-	-	-	-	-	-	1,512	378	1,890
2e.3	Subtotal 2e Collateral Costs	-	-	-	-	-	-	1,512	378	1,890

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet
Period 2e Period-Dependent Costs														
2e.4.1	Insurance	-	-	-	-	-	-	290	40	330				
2e.4.2	Property taxes	-	-	-	-	-	-	76	11	86				
2e.4.3	Health physics supplies	-	919	-	-	-	-	-	318	1,236				
2e.4.4	Disposal of DAW generated	-	-	6	2	-	20	-	8	36	319			
2e.4.5	Plant energy budget	-	-	-	-	-	-	200	42	242				
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	144	-	144				
2e.4.7	NRC Fees	-	-	-	-	-	-	532	73	605				
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	281	39	319				
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	339	70	409				
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	106	22	128				
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	216	45	261				
2e.4.12	Security Staff Cost	-	-	-	-	-	-	298	62	360				
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	2,847	590	3,437				
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	2,525	523	3,048				
2e.4	Subtotal Period 2e Period-Dependent Costs	-	919	6	2	-	20	7,852	1,842	10,642	319			
2e.0	TOTAL PERIOD 2e COST	-	919	6	2	-	20	17,578	5,585	24,110	319	-		
PERIOD 2 TOTALS		7,597	59,580	14,508	11,963	39,990	40,020	237,386	110,277	521,321	130,180	3,224	574	-
PERIOD 3b Site Restoration														
Perod 3b Direct Decommissioning Activities														
Demolition of Remaining Site Buildings														
3b.1.1.1	Reactor	-	6,873	-		-	-	-	1,425	8,298				
3b.1.1.2	Capital Additions 85-2004	-	273	-		-	-	-	57	330				
3b.1.1.3	Containment Penetration Area	-	615	-		-	-	-	127	742				
3b.1.1.4	Miscellaneous	-	26	-		-	-	-	5	31		-		
3b.1.1.5	Turbine	-	3,274	-		-	-	-	679	3,952		-	-	-
3b.1.1.6	Turbine Pedestal	-	1,212	-		-	-	-	251	1,463		-	-	-
3b.1.1.7	Fuel Handling	-	1,689	-		-	-	-	350	2,039		-	-	-
3b.1.1	Totals	-	13,961	-		-	-	-	2,894	16,856		-	-	-
Site Closeout Activities														
3b.1.2	Grade & landscape site	-	2,272	-		-	-	-	471	2,743				
3b.1.3	Final report to NRC	-	-	-		-	-	187	39	226				
3b.1	Subtotal Period 3b Activity Costs	-	16,234	-		-	-	187	3,404	19,825				
Period 3b Additional Cost														
3b.2.1	Concrete Crushing	-	464	-	-	-	-	-	96	560		-		
3b.2.2	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	91	529		-		
3b.2	Subtotal Period 3b Additional Costs	-	901	-	-	-	-	-	187	1,089		-		
Period 3b Collateral Costs														
3b.3.1	Small tool allowance	-	187	-	-	-	-	-	39	225				
3b.3	Subtotal 3b Collateral Costs	-	187	-	-	-	-	-	39	225				
Period 3b Period-Dependent Costs														
3b.4.1	Insurance	-	-	-	-	-	-	787	109	896		-		
3b.4.2	Property taxes	-	-	-	-	-	-	207	29	235		-		
3b.4.3	Heavy equipment rental	-	6,420	-	-	-	-	-	1,331	7,750		-		
3b.4.4	Plant energy budget	-	-	-	-	-	-	273	56	329		-		
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	391	-	391		-		
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	763	105	869		-		
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	921	191	1,112		-		
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	289	60	349		-		
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	587	122	709		-		
3b.4.10	Security Staff Cost	-	-	-	-	-	-	338	70	408		-		
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	6,581	1,364	7,945		-		
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	1,713	355	2,068		-		
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,420	-	-	-	-	12,849	3,792	23,061		-		
3b.0	TOTAL PERIOD 3b COST	-	23,741	-	-	-	-	13,036	7,422	44,199		-		-
PERIOD 3c - Fuel Storage Operations/Shipping														
Period 3c Direct Decommissioning Costs														
Period 3c P Collateral Costs														
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-				

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2e Period-Dependent Costs										
2e.4.1	Insurance	-	-	-	-	-	-	314	79	393
2e.4.2	Property taxes	-	-	-	-	-	-	82	21	103
2e.4.3	Health physics supplies	-	996	-	-	-	-	-	249	1,245
2e.4.4	Disposal of DAW generated	-	-	7	2	-	25	-	8	42
2e.4.5	Plant energy budget	-	-	-	-	-	-	217	54	271
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	156	-	156
2e.4.7	NRC Fees	-	-	-	-	-	-	577	144	721
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	305	76	381
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	367	92	459
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	115	29	144
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	234	59	293
2e.4.12	Security Staff Cost	-	-	-	-	-	-	323	81	404
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	3,086	772	3,858
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	2,737	684	3,421
2e.4	Subtotal Period 2e Period-Dependent Costs	-	996	7	2	-	25	8,512	2,385	11,927
2e.0	TOTAL PERIOD 2e COST	-	996	7	2	-	25	19,055	5,021	25,106
PERIOD 2 TOTALS		8,235	64,585	15,727	14,862	49,680	49,717	257,326	115,033	575,164
PERIOD 3b Site Restoration										
Perod 3b Direct Decommissioning Activities										
Demolition of Remaining Site Buildings										
3b.1.1.1	Reactor	-	7,450	-	8,538	-	-	-	3,997	19,986
3b.1.1.2	Capital Additions 85-2004	-	296	-	339	-	-	-	159	794
3b.1.1.3	Containment Penetration Area	-	667	-	764	-	-	-	358	1,788
3b.1.1.4	Miscellaneous	-	28	-	32	-	-	-	15	76
3b.1.1.5	Turbine	-	3,549	-	4,067	-	-	-	1,904	9,520
3b.1.1.6	Turbine Pedestal	-	1,314	-	1,506	-	-	-	705	3,524
3b.1.1.7	Fuel Handling	-	1,831	-	2,098	-	-	-	982	4,911
3b.1.1	Totals	-	15,134	-	17,344	-	-	-	8,119	40,597
Site Closeout Activities										
3b.1.2	Grade & landscape site	-	2,463	-	2,823	-	-	-	1,321	6,607
3b.1.3	Final report to NRC	-	-	-	-	-	-	203	51	253
3b.1	Subtotal Period 3b Activity Costs	-	17,598	-	20,167	-	-	203	9,492	47,460
Period 3b Additional Cost										
3b.2.1	Concrete Crushing	-	503	-	-	-	-	-	126	629
3b.2.2	Cofferdam Construction and Teardown	-	475	-	-	-	-	-	119	593
3b.2	Subtotal Period 3b Additional Costs	-	977	-	-	-	-	-	244	1,221
Period 3b Collateral Costs										
3b.3.1	Small tool allowance	-	203	-	-	-	-	-	51	253
3b.3	Subtotal 3b Collateral Costs	-	203	-	-	-	-	-	51	253
Period 3b Period-Dependent Costs										
3b.4.1	Insurance	-	-	-	-	-	-	853	213	1,066
3b.4.2	Property taxes	-	-	-	-	-	-	224	56	280
3b.4.3	Heavy equipment rental	-	6,959	-	-	-	-	-	1,740	8,699
3b.4.4	Plant energy budget	-	-	-	-	-	-	296	74	370
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	424	-	424
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	827	207	1,034
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	998	250	1,248
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	313	78	392
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	636	159	795
3b.4.10	Security Staff Cost	-	-	-	-	-	-	366	92	458
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	7,134	1,783	8,917
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	1,857	464	2,321
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,959	-	-	-	-	13,928	5,222	26,109
3b.0	TOTAL PERIOD 3b COST	-	25,735	-	-	-	-	14,131	9,967	49,833
PERIOD 3c - Fuel Storage Operations/Shipping										
Period 3c Direct Decommissioning Costs										
Period 3c P Collateral Costs										
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet
Period 3c Period-Dependent Costs														
3c.4.1	Insurance	-	-	-	-	-	-	4,184	578	4,762				
3c.4.2	Property taxes	-	-	-	-	-	-	1,098	152	1,250				
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-				
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,075	-	2,075				
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,055	560	4,615				
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,865	1,009	5,874				
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,534	318	1,852				
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,119	647	3,766				
3c.4.9	Security Staff Cost	-	-	-	-	-	-	20,852	4,323	25,174				
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,130	1,064	6,194				
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	46,913	8,650	55,562				
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	46,913	8,650	55,562				
PERIOD 3d - GTCC shipping														
Period 3d Direct Decommissioning Activities														
Nuclear Steam Supply System Removal														
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	300	-	-	8,952	-	1,897	11,150				433
3d.1.1	Totals	-	-	300	-	-	8,952	-	1,897	11,150				433
3d.1	Subtotal Period 3d Activity Costs	-	-	300	-	-	8,952	-	1,897	11,150				433
Period 3d P Collateral Costs														
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-				-
Period 3d Period-Dependent Costs														
3d.4.1	Insurance	-	-	-	-	-	-	15	2	17				
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	4				
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-				
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	7	-	7				
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	14	2	16				
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7				
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	11	2	13				
3d.4.8	Security Staff Cost	-	-	-	-	-	-	73	15	89				
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	18	4	22				
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	148	27	175				
3d.0	TOTAL PERIOD 3d COST	-	-	300	-	-	8,952	148	1,924	11,325				
PERIOD 3e - ISFSI Decontamination														
Period 3e Direct Decommissioning Activities														
Period 3e Additional Costs														
3e.2.1	ISFSI License Termination	-	1,059	4	100	-	387	789	678	3,016	6,239			
3e.2	Subtotal Period 3e Additional Costs	-	1,059	4	100	-	387	789	678	3,016	6,239			
Period 3e Collateral Costs														
3e.3.1	Small tool allowance	-	14	-	-	-	-	-	3	17				
3e.3	Subtotal 3e Collateral Costs	-	14	-	-	-	-	-	3	17				
Period 3e Period-Dependent Costs														
3e.4.1	Insurance	-	-	-	-	-	-	127	18	145				
3e.4.2	Property taxes	-	-	-	-	-	-	33	5	38				
3e.4.3	Heavy equipment rental	-	309	-	-	-	-	-	64	373				
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-				
3e.4.5	Security Staff Cost	-	-	-	-	-	-	172	36	207				
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	129	27	156				
3e.4	Subtotal Period 3e Period-Dependent Costs	-	309	-	-	-	-	461	149	919				
3e.0	TOTAL PERIOD 3e COST	-	1,383	4	100	-	387	1,250	829	3,953	6,239			
PERIOD 3f - ISFSI Site Restoration														
Period 3f Direct Decommissioning Activities														
Period 3f Additional Costs														
3f.2.1	ISFSI Demolition and Site Restoration	-	562	-	-	-	-	24	121	707				
3f.2	Subtotal Period 3f Additional Costs	-	562	-	-	-	-	24	121	707				
Period 3f Collateral Costs														
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5				
3f.3	Subtotal 3f Collateral Costs	-	4	-	-	-	-	-	1	5				

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 3c Period-Dependent Costs										
3c.4.1	Insurance	-	-	-	-	-	-	4,535	1,134	5,669
3c.4.2	Property taxes	-	-	-	-	-	-	1,190	298	1,488
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,249	562	2,812
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,396	1,099	5,495
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	5,274	1,318	6,592
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,663	416	2,079
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,381	845	4,226
3c.4.9	Security Staff Cost	-	-	-	-	-	-	22,604	5,651	28,254
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,561	1,390	6,951
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	50,854	12,713	63,567
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	50,854	12,713	63,567
PERIOD 3d - GTCC shipping										
Period 3d Direct Decommissioning Activities										
Nuclear Steam Supply System Removal										
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	325	-	-	11,121	-	2,862	14,308
3d.1.1	Totals	-	-	325	-	-	11,121	-	2,862	14,308
3d.1	Subtotal Period 3d Activity Costs	-	-	325	-	-	11,121	-	2,862	14,308
Period 3d P Collateral Costs										
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-
Period 3d Period-Dependent Costs										
3d.4.1	Insurance	-	-	-	-	-	-	16	4	20
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	5
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	8	-	8
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	15	4	19
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	12	3	15
3d.4.8	Security Staff Cost	-	-	-	-	-	-	79	20	99
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	20	5	24
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	160	40	201
3d.0	TOTAL PERIOD 3d COST	-	-	325	-	-	11,121	160	2,902	14,508
PERIOD 3e - ISFSI Decontamination										
Period 3e Direct Decommissioning Activities										
Period 3e Additional Costs										
3e.2.1	ISFSI License Termination	-	1,148	4	124	-	481	855	653	3,266
3e.2	Subtotal Period 3e Additional Costs	-	1,148	4	124	-	481	855	653	3,266
Period 3e Collateral Costs										
3e.3.1	Small tool allowance	-	15	-	-	-	-	-	4	19
3e.3	Subtotal 3e Collateral Costs	-	15	-	-	-	-	-	4	19
Period 3e Period-Dependent Costs										
3e.4.1	Insurance	-	-	-	-	-	-	138	34	172
3e.4.2	Property taxes	-	-	-	-	-	-	36	9	45
3e.4.3	Heavy equipment rental	-	335	-	-	-	-	-	84	419
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-
3e.4.5	Security Staff Cost	-	-	-	-	-	-	186	47	233
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	140	35	175
3e.4	Subtotal Period 3e Period-Dependent Costs	-	335	-	-	-	-	500	209	1,043
3e.0	TOTAL PERIOD 3e COST	-	1,499	4	124	-	481	1,355	866	4,329
PERIOD 3f - ISFSI Site Restoration										
Period 3f Direct Decommissioning Activities										
Period 3f Additional Costs										
3f.2.1	ISFSI Demolition and Site Restoration	-	609	-	-	-	-	26	159	794
3f.2	Subtotal Period 3f Additional Costs	-	609	-	-	-	-	26	159	794
Period 3f Collateral Costs										
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5
3f.3	Subtotal 3f Collateral Costs	-	4	-	-	-	-	-	1	5

Note: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 3f Period-Dependent Costs														
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-			-	
3f.4.2	Property taxes	-	-	-	-	-	-	17	2	19			-	
3f.4.3	Heavy equipment rental	-	103	-	-	-	-	-	21	125			-	
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-			-	
3f.4.6	Security Staff Cost	-	-	-	-	-	-	86	18	104			-	
3f.4.7	Utility Staff Cost	-	-	-	-	-	-	54	11	65			-	
3f.4	Subtotal Period 3f Period-Dependent Costs	-	103	-	-	-	-	158	53	314	-		-	-
3f.0	TOTAL PERIOD 3f COST	-	669	-	-	-	-	181	175	1,025			-	
PERIOD 3 TOTALS		-	25,793	304	100	-	9,339	61,529	19,000	116,064	6,239		-	433
TOTAL COST TO DECOMMISSION		11,648	87,866	15,019	12,856	39,990	56,407	393,084	154,278	771,148	137,783	5,627	574	433

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 1
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 3f Period-Dependent Costs										
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	18	5	23
3f.4.3	Heavy equipment rental	-	112	-	-	-	-	-	28	140
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-
3f.4.6	Security Staff Cost	-	-	-	-	-	-	93	23	117
3f.4.7	Utility Staff Cost	-	-	-	-	-	-	59	15	73
3f.4	Subtotal Period 3f Period-Dependent Costs	-	112	-	-	-	-	171	71	354
3f.0	TOTAL PERIOD 3f COST	-	725	-	-	-	-	196	230	1,152
PERIOD 3 TOTALS		-	**27,960**	**330**	**124**	-	**11,602**	**66,697**	**26,678**	**133,391**
TOTAL COST TO DECOMMISSION		**12,626**	**95,247**	**16,281**	**15,971**	**49,680**	**70,074**	**426,103**	**171,495**	**857,477**

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
PERIOD 1a - Shutdown through Transition																							
Period 1a Direct Decommissioning Activities																							
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	67	14	81					-	-	-	-	-	-	73	18	91
1a.1.2	Notification of Cessation of Operations	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
1a.1.3	Remove fuel & source material	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
1a.1.4	Notification of Permanent Defueling	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
1a.1.5	Deactivate plant systems & process waste	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	103	22	124					-	-	-	-	-	-	112	28	140
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	236	50	286					-	-	-	-	-	-	256	64	320
1a.1.8	Perform detailed rad survey	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1a.1.10	End product description	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	67	14	81					-	-	-	-	-	-	73	18	91
1a.1.12	Define major work sequence	-	-	-	-	-	-	384	81	466					-	-	-	-	-	-	417	104	521
1a.1.13	Perform SER and EA	-	-	-	-	-	-	159	33	192					-	-	-	-	-	-	173	43	216
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	256	54	310					-	-	-	-	-	-	278	70	348
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	210	44	254					-	-	-	-	-	-	228	57	285
1a.1.16	Receive NRC approval of termination plan	-	-	-	-	-	-	-	-	-					-	-	-	-	-	-	-	-	-
Activity Specifications																							
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	252	53	305					-	-	-	-	-	-	274	68	342
1a.1.17.2	Plant systems	-	-	-	-	-	-	214	45	259					-	-	-	-	-	-	232	58	291
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	26	5	31					-	-	-	-	-	-	28	7	35
1a.1.17.4	Reactor internals	-	-	-	-	-	-	364	77	441					-	-	-	-	-	-	395	99	494
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	333	70	403					-	-	-	-	-	-	362	90	452
1a.1.17.6	Biological shield	-	-	-	-	-	-	26	5	31					-	-	-	-	-	-	28	7	35
1a.1.17.7	Steam generators	-	-	-	-	-	-	160	34	194					-	-	-	-	-	-	174	43	217
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	82	17	99					-	-	-	-	-	-	89	22	111
1a.1.17.9	Main Turbine	-	-	-	-	-	-	21	4	25					-	-	-	-	-	-	23	6	29
1a.1.17.10	Main Condensers	-	-	-	-	-	-	21	4	25					-	-	-	-	-	-	23	6	29
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	160	34	194					-	-	-	-	-	-	174	43	217
1a.1.17.12	Waste management	-	-	-	-	-	-	236	50	286					-	-	-	-	-	-	256	64	320
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	46	10	56					-	-	-	-	-	-	50	12	62
1a.1.17	Total	-	-	-	-	-	-	1,939	409	2,348					-	-	-	-	-	-	2,106	526	2,632
Planning & Site Preparations																							
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	123	26	149					-	-	-	-	-	-	134	33	167
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	569	3,269					-	-	-	-	-	-	2,932	733	3,666
1a.1.20	Design water clean-up system	-	-	-	-	-	-	72	15	87					-	-	-	-	-	-	78	20	98
1a.1.21	Rigging/Cont.Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	443	2,543					-	-	-	-	-	-	2,281	570	2,851
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	63	13	76					-	-	-	-	-	-	68	17	86
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	8,581	1,808	10,389					-	-	-	-	-	-	9,320	2,330	11,650
Period 1a Additional Costs																							
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	6,272	1,322	7,593					-	-	-	-	-	-	6,812	1,703	8,515
1a.2	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	6,272	1,322	7,593					-	-	-	-	-	-	6,812	1,703	8,515
Period 1a Collateral Costs																							
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,649	348	1,997					-	-	-	-	-	-	1,791	448	2,239
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,649	348	1,997					-	-	-	-	-	-	1,791	448	2,239
Period 1a Period-Dependent Costs																							
1a.4.1	Insurance	-	-	-	-	-	-	1,195	168	1,363					-	-	-	-	-	-	1,298	324	1,622
1a.4.2	Property taxes	-	-	-	-	-	-	101	14	115					-	-	-	-	-	-	110	27	137
1a.4.3	Health physics supplies	-	457	-	-	-	-	-	161	618					-	496	-	-	-	-	-	124	620
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	103	591					-	532	-	-	-	-	-	133	665
1a.4.5	Disposal of DAW generated	-	-	11	4	-	35	-	15	64	565				-	-	12	5	-	43	-	15	75
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	280	1,610					-	-	-	-	-	-	1,445	361	1,806
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	191	-	191					-	-	-	-	-	-	207	52	259
1a.4.8	NCR Fees	-	-	-	-	-	-	471	66	537					-	-	-	-	-	-	512	128	639
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	177	1,434					-	-	-	-	-	-	1,366	342	1,708
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	155	890					-	-	-	-	-	-	798	200	998
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	141	30	171					-	-	-	-	-	-	153	38	191
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	4,385	924	5,309					-	-	-	-	-	-	4,763	1,191	5,953
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	286	60	347					-	-	-	-	-	-	311	78	388
1a.4.14	Security Staff Cost	-	-	-	-	-	-	10,231	2,156	12,388					-	-	-	-	-	-	11,112	2,778	13,890
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	21,222	4,473	25,695					-	-	-	-	-	-	23,049	5,762	28,812
1a.4	Subtotal 1a. Period-Dependent Costs	-	947	11	4	-	35	41,545	8,782	51,324	565				-	1,029	12	5	-	43	45,122	11,553	57,764
1a.0	TOTAL PERIOD 1a COST	-	947	11	4	-	35	58,047	12,259	71,303	565				-	1,029	12	5	-	43	63,045	16,033	80,167

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 1b - Decommissioning Preparations																							
Period 1b Direct Decommissioning Activities																							
Detailed Work Procedures																							
1b.1.1.1	Plant systems	-	-	-	-	-	-	243	51	294					-	-	-	-	-	-	264	66	330
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1b.1.1.3	Reactor internals	-	-	-	-	-	-	128	27	155					-	-	-	-	-	-	139	35	174
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	69	15	84					-	-	-	-	-	-	75	19	94
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	186	39	225					-	-	-	-	-	-	202	51	253
1b.1.1.9	Facility closeout	-	-	-	-	-	-	62	13	74					-	-	-	-	-	-	67	17	84
1b.1.1.10	Missile shields	-	-	-	-	-	-	23	5	28					-	-	-	-	-	-	25	6	31
1b.1.1.11	Biological shield	-	-	-	-	-	-	62	13	74					-	-	-	-	-	-	67	17	84
1b.1.1.12	Steam generators	-	-	-	-	-	-	236	50	286					-	-	-	-	-	-	256	64	320
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	51	11	62					-	-	-	-	-	-	55	14	69
1b.1.1.14	Main Turbine	-	-	-	-	-	-	80	17	97					-	-	-	-	-	-	87	22	109
1b.1.1.15	Main Condenser	-	-	-	-	-	-	80	17	97					-	-	-	-	-	-	87	22	109
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	140	29	169					-	-	-	-	-	-	152	38	190
1b.1.1.17	Reactor building	-	-	-	-	-	-	140	29	169					-	-	-	-	-	-	152	38	190
1b.1.1	Total	-	-	-	-	-	-	1,704	359	2,063					-	-	-	-	-	-	1,851	463	2,313
1b.1.2	Decon primary loop	1,635	-	-	-	-	-	-	1,148	2,783					1,776	-	-	-	-		-	444	2,220
1b.1	Subtotal Period 1b Activity Costs	1,635	-	-	-	-	-	1,704	1,508	4,847					1,776	-	-	-	-	-	1,851	907	4,533
Period 1b Additional Costs																							
1b.2.1	Site Characterization	-	-	-	-	-	-	1,945	820	2,765					-	-	-	-	-	-	2,112	528	2,641
1b.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	124	715					-	-	-	-	-	-	641	160	801
1b.2.3	Mixed Waste Management	-	-	-	-	-	-	912	192	1,104					-	-	-	-	-	-	991	248	1,238
1b.2	Subtotal Period 1b Activity Costs	-	-	-	-	-	-	3,447	1,136	4,583					-	-	-	-	-	-	3,744	936	4,680
Period 1b Collateral Costs																							
1b.3.1	Decon equipment	935	-	-	-	-	-	-	197	1,132					1,016	-	-	-	-	-	-	254	1,269
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	294	1,689					-	-	-	-	-	-	1,515	379	1,894
1b.3.3	Process liquid waste	64	-	190	791	-	7,041		2,711	10,796	401	2,421	-		70	-	206	983	-	8,747	-	2,501	12,507
1b.3.4	Small tool allowance		2	-	-	-	-	-	0	3					-	2	-	-	-	-	-	1	3
1b.3.5	Pipe cutting equipment	-	1,000	-		-	-	-	211	1,211					-	1,086	-	-	-	-	-	272	1,358
1b.3.6	Decon rig	1,400	-	-	-	-	-	-	295	1,695					1,521	-	-	-	-	-	-	380	1,901
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	504	106	610					-	-	-	-	-	-	547	137	684
1b.3	Subtotal Period 1b Collateral Costs	2,399	1,002	190	791	-	7,041	1,899	3,815	17,137	401	2,421	-		2,606	1,088	206	983	-	8,747	2,063	3,923	19,615
Period 1b Period-Dependent Costs																							
1b.4.1	Decon supplies	28	-	-	-	-	-	-	10	39					30	-	-	-	-	-	-	8	38
1b.4.2	Insurance	-	-	-	-	-	-	602	85	687					-	-	-	-	-	-	654	163	817
1b.4.3	Property taxes	-	-	-	-	-	-	51	7	58					-	-	-	-	-	-	55	14	69
1b.4.4	Health physics supplies	-	255	-	-	-	-	-	90	345					-	277	-	-	-	-	-	69	346
1b.4.5	Heavy equipment rental	-	247	-	-	-	-	-	52	299					-	268	-	-	-	-	-	67	335
1b.4.6	Disposal of DAW generated	-	-	6	2	-	20	-	8	37	327	-	-		-	-	7	2	-	25	-	8	42
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,341	283	1,623					-	-	-	-	-	-	1,456	364	1,821
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	96	-	96					-	-	-	-	-	-	104	-	104
1b.4.9	NRC Fees	-	-	-	-	-	-	237	33	271					-	-	-	-	-	-	257	64	322
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	375	53	427					-	-	-	-	-	-	407	102	509
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	370	78	448					-	-	-	-	-	-	402	100	502
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	71	15	86					-	-	-	-	-	-	77	19	96
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,919	404	2,324					-	-	-	-	-	-	2,084	521	2,605
1b.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	144	30	175					-	-	-	-	-	-	156	39	195
1b.4.15	Security Staff Cost	-	-	-	-	-	-	5,158	1,087	6,245					-	-	-	-	-	-	5,602	1,401	7,003
1b.4.16	DOC Staff Cost	-	-	-	-	-	-	3,863	814	4,677					-	-	-	-	-	-	4,196	1,049	5,245
1b.4.17	Utility Staff Cost	-	-	-	-	-	-	10,698	2,255	12,953					-	-	-	-	-	-	11,619	2,905	14,524
1b.4	Subtotal Period 1b Period-Dependent Costs	29	502	6	2	-	20	24,926	5,304	30,790	327	-	-		31	545	7	2	-	25	27,072	6,921	34,603
		-													-								
1b.0	TOTAL PERIOD 1b COST	4,063	1,505	196	794		7,061	31,976	11,763	57,356	728	2,421	-		4,413	1,635	213	986	-	8,772	34,729	12,687	63,435
PERIOD 1 TOTALS		4,063	2,452	206	798	-	7,096	90,023	24,022	128,660	1,293	2,421	-	-	4,413	2,663	224	991	-	8,815	97,774	28,720	143,600

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
PERIOD 2a - Large Component Removal																							
Period 2a Direct Decommissioning Activities																							
Nuclear Steam Supply System Removal																							
2a.1.1.1	Reactor Coolant Piping	305	287	40	40	-	766	-	598	2,036	2,141	-		-	331	312	43	50	-	952	-	422	2,110
2a.1.1.2	Pressurizer Quench Tank	32	29	6	6	-	108	-	73	255	329	-		-	35	31	7	7	-	134	-	54	268
2a.1.1.3	Reactor Coolant Pumps & Motors	120	101	44	121	-	1,358	-	628	2,371	5,388	-			130	110	48	150	-	1,687	-	531	2,656
2a.1.1.4	Pressurizer	38	59	454	295	-	620	-	391	1,859	2,460	-			41	64	493	366	-	770	-	434	2,169
2a.1.1.5	Steam Generators	394	3,846	2,686	1,924	2,974	5,939	-	5,124	22,887	23,568	-			428	4,177	2,917	2,390	3,695	7,378	-	5,246	26,231
2a.1.1.6	Retired Steam Generator Units	-	-	1,895	1,890	2,974	5,768	-	3,317	15,844	22,887	-			-	-	2,058	2,348	3,695	7,166	-	3,817	19,083
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	162	92	224	37	-	255	-	275	1,044	3,881	-			176	100	243	46	-	317	-	220	1,102
2a.1.1.8	Reactor Vessel Internals	134	2,198	5,018	870	-	4,516	229	7,700	20,667	1,502	845	574	-	146	2,387	5,450	1,081	-	5,610	249	3,731	18,653
2a.1.1.9	Reactor Vessel	100	4,126	1,562	651	-	8,548	229	11,250	26,467	6,416	2,379		-	109	4,481	1,696	809	-	10,619	249	4,491	22,454
2a.1.1	Totals	1,285	10,739	11,930	5,835	5,948	27,878	459	29,356	93,430	68,572	3,224	574	-	1,396	11,664	12,957	7,249	7,389	34,633	499	18,946	94,732
Removal of Major Equipment																							
2a.1.2	Main Turbine/Generator	-	532	191	138	879	603	-	640	2,983	2,294				-	578	207	171	1,092	749	-	699	3,497
2a.1.3	Main Condensers	-	1,529	181	131	831	570	-	966	4,208	2,170				-	1,661	197	163	1,032	708	-	940	4,701
Cascading Costs from Clean Building Demolition																							
2a.1.4.1	Reactor	-	1,208	-	-	-	-	-	255	1,462		-		-	-	1,312	-	-	-	-	-	328	1,640
2a.1.4.2	Auxiliary	-	652	-	-	-	-	-	137	790		-		-	-	708	-	-	-	-	-	177	885
2a.1.4.3	Containment Penetration Area	-	66	-	-	-	-	-	14	80		-		-	-	72	-	-	-	-	-	18	90
2a.1.4.4	Radwaste Storage	-	82	-	-	-	-	-	17	99		-		-	-	89	-	-	-	-	-	22	111
2a.1.4.5	Fuel Handling	-	175	-	-	-	-	-	37	212		-		-	-	190	-	-	-	-	-	48	238
2a.1.4	Totals	-	2,183	-	-	-	-	-	460	2,643		-		-	-	2,371	-	-	-	-	-	593	2,964
Disposal of Plant Systems																							
2a.1.5.1	Auxiliary Steam	-	128	3	31	252	-	-	105	519		-		-	-	139	3	39	313	-	-	123	617
2a.1.5.2	Auxiliary Steam (RCA)	-	109	2	14	118	-	-	67	310		-		-	-	118	2	17	147	-	-	71	356
2a.1.5.3	Building Services (Non Power Block)	-	6	-	-	-	-	-	1	7		-		-	-	7	-	-	-	-	-	2	8
2a.1.5.4	Condensate System	-	1,031	62	546	4,477	-	-	1,429	7,545		-		-	-	1,120	67	678	5,562	-	-	1,857	9,284
2a.1.5.5	Condensate System (Insulated)	-	388	21	181	1,481	-	-	490	2,561		-		-	-	421	23	225	1,840	-	-	627	3,136
2a.1.5.6	Containment Spray	-	183	10	84	688	-	-	228	1,192	-	-		-	-	199	11	104	855	-	-	292	1,461
2a.1.5.7	Extraction Steam & Heater Drip	-	391	16	137	1,126	-	-	406	2,076	-	-		-	-	425	17	170	1,399	-	-	503	2,514
2a.1.5.8	Feedwater System	-	93	13	112	919	-	-	252	1,389	-	-		-	-	101	14	139	1,142	-	-	349	1,745
2a.1.5.9	Feedwater System (Insulated)	-	137	1	-	-	-	-	29	166		-		-	-	149	1	-	-	-	-	37	187
2a.1.5.10	Feedwater System (RCA Insulated)	-	93	3	24	197	-	-	80	396		-		-	-	101	3	30	245	-	-	95	474
2a.1.5.11	Feedwater System (RCA)	-	4	-	1	10	-	-	4	20		-		-	-	4	-	1	12	-	-	5	23
2a.1.5.12	NSSS Sampling	-	128	4	3	8	43	-	63	251	164	-		-	-	139	4	4	10	53	-	53	263
2a.1.5.13	NSSS Sampling (Insulated)	-	38	1	-	-	5	-	15	59	20	-		-	-	41	1	-	-	6	-	12	61
2a.1.5.14	Nitrogen & Hydrogen	-	16	-	-	-	-	-	3	20		-		-	-	17	-	-	-	-	-	4	22
2a.1.5.15	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	-	1		-		-	-	1	-	-	-	-	-	0	1
2a.1.5.16	Nitrogen & Hydrogen (RCA Insulated)	-	4	-	-	2	-	-	2	8		-		-	-	4	-	-	2	-	-	2	9
2a.1.5.17	Nitrogen & Hydrogen (RCA)	-	81	-	4	34	-	-	37	157		-		-	-	88	-	5	42	-	-	34	169
2a.1.5.18	Oily Water Separator & TB Sump	-	24	1	5	41	-	-	18	89		-		-	-	26	1	6	51	-	-	21	105
2a.1.5.19	Saltwater System	-	153	-	-	-	-	-	32	186		-		-	-	166	-	-	-	-	-	42	208
2a.1.5.20	Turbine Steam Supply	-	1,240	81	714	5,855	-	-	1,831	9,721		-		-	-	1,347	88	887	7,274	-	-	2,399	11,994
2a.1.5.21	Turbine Steam Supply (RCA)	-	685	23	191	1,567	-	-	614	3,079		-		-	-	744	25	237	1,947	-	-	738	3,691
2a.1.5.22	Turbine and Generator	-	119	4	39	318	-	-	118	598		-		-	-	129	4	48	395	-	-	144	721
2a.1.5.23	Turbine and Generator (Insulated)	-	44	1	7	58	-	-	29	140		-		-	-	48	1	9	72	-	-	32	162
2a.1.5	Totals	-	5,099	245	2,093	17,151	48	-	5,854	30,489	185	-		-	-	5,538	266	2,600	21,307	60	-	7,443	37,213
2a.1.6	Scaffolding in support of decommissioning	-	4,344	26	19	149	22	-	1,572	6,132	82				-	4,718	28	24	185	27	-	1,246	6,228
2a.1	Subtotal Period 2a Activity Costs	1,285	24,426	12,573	8,216	24,958	29,122	459	38,848	139,887	73,303	3,224	574	-	1,396	26,529	13,656	10,207	31,005	36,178	499	29,867	149,336
Period 2a Additional Costs																							
2a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	537	1,363	2,002			-	-	111	164	68	-	625	16	246	1,230
2a.2	Subtotal Period 2a Additional Costs	-	102	151	55	-	503	15	537	1,363	2,002			-	-	111	164	68	-	625	16	246	1,230
			-																				
Period 2a Collateral Costs			-																				
2a.3.1	Process liquid waste	107	-	49	198	-	184	-	189	727	731	-		-	116	-	53	246	-	229	-	161	805
2a.3.2	Small tool allowance	-	318	-	-	-	-	-	67	385		-		-	-	345	-	-	-	-	-	86	432
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,160	244	1,404		-		-	-	-	-	-	-	-	1,260	315	1,575
2a.3	Subtotal Period 2a Collateral Costs	107	318	49	198	-	184	1,160	500	2,516	731	-		-	116	345	53	246	-	229	1,260	562	2,812

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs
Period 2a Period-Dependent Costs										
2a.4.1	Decon supplies	89	-	-	-	-	-	-	31	120
2a.4.2	Insurance	-	-	-	-	-	-	685	96	781
2a.4.3	Property taxes	-	-	-	-	-	-	157	22	179
2a.4.4	Health physics supplies	-	2,113	-	-	-	-	-	742	2,856
2a.4.5	Heavy equipment rental	-	3,658	-	-	-	-	-	771	4,428
2a.4.6	Disposal of DAW generated	-	-	104	39	-	342	-	143	628
2a.4.7	Plant energy budget	-	-	-	-	-	-	1,962	414	2,376
2a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	296	-	296
2a.4.9	NRC Fees	-	-	-	-	-	-	700	98	798
2a.4.10	Emergency Planning Fees	-	-	-	-	-	-	876	123	1,000
2a.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	352	74	427
2a.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,141	241	1,382
2a.4.13	ISFSI Operating Costs	-	-	-	-	-	-	219	46	265
2a.4.14	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	4,531	955	5,486
2a.4.15	ISFSI Fixed Costs	-	-	-	-	-	-	445	94	539
2a.4.16	Security Staff Cost	-	-	-	-	-	-	13,382	2,820	16,202
2a.4.17	DOC Staff Cost	-	-	-	-	-	-	20,180	4,253	24,433
2a.4.18	Utility Staff Cost	-	-	-	-	-	-	29,194	6,153	35,347
2a.4	Subtotal Period 2a Period-Dependent Costs	89	5,771	104	39	-	342	74,121	17,076	97,542
2a.0	TOTAL PERIOD 2a COSTS	1,481	30,617	12,877	8,508	24,958	30,151	75,755	56,961	241,309
PERIOD 2b - Site Decontamination										
Period 2b Direct Decommissioning Activities										
Disposal of Plant Systems										
2b.1.1.1	Capital Additions 85-2002 (clean)	-	382	-	-	-	-	-	80	462
2b.1.1.2	Capital Additions 85-2002 (contaminated)	-	380	9	38	287	58	-	224	995
2b.1.1.3	Chemical & Volume Control	670	815	55	75	403	498	-	1,040	3,555
2b.1.1.4	Chemical & Volume Control (Insulated)	241	315	17	12	39	147	-	345	1,115
2b.1.1.5	Component Cooling Water	-	161	-	-	-	-	-	34	195
2b.1.1.6	Component Cooling Water (RCA)	-	462	13	107	877	-	-	372	1,831
2b.1.1.7	Compressed Air	-	100	-	-	-	-	-	21	122
2b.1.1.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6
2b.1.1.9	Compressed Air (RCA Insulated)	-	23	-	1	11	-	-	11	46
2b.1.1.10	Compressed Air RCA	-	411	3	26	212	-	-	195	847
2b.1.1.11	Diesel Engine-Generator	-	116	-	-	-	-	-	24	141
2b.1.1.12	Diesel Engine-Generator (Insulated)	-	3	-	-	-	-	-	1	3
2b.1.1.13	Electrical (Clean)	-	2,645	-	-	-	-	-	557	3,203
2b.1.1.14	Electrical (Contaminated)	-	279	5	30	243	17	-	162	735
2b.1.1.15	Electrical (RCA)	-	1,691	30	256	2,103	-	-	1,095	5,176
2b.1.1.16	Fire Protection	-	293	10	91	750	-	-	282	1,426
2b.1.1.17	Gaseous Radwaste	-	102	5	9	61	34	-	63	273
2b.1.1.18	HVAC (Clean Insulated)	-	34	-	-	-	-	-	7	41
2b.1.1.19	HVAC (Clean)	-	356	-	-	-	-	-	75	431
2b.1.1.20	HVAC (Contaminated Insulated)	-	191	4	25	197	17	-	120	554
2b.1.1.21	HVAC (Contaminated)	-	849	22	125	970	124	-	576	2,665
2b.1.1.22	Liquid Radwaste	298	345	30	31	142	274	-	467	1,588
2b.1.1.23	Liquid Radwaste (Insulated)	24	32	2	1	2	18	-	35	115
2b.1.1.24	Lube Oil Distribution & Purification	-	211	5	42	342	-	-	156	755
2b.1.1.25	Make-up Water	-	208	-	-	-	-	-	44	251
2b.1.1.26	Make-up Water (Insulated)	-	20	-	-	-	-	-	4	24
2b.1.1.27	Make-up Water (RCA Insulated)	-	25	-	3	24	-	-	15	67
2b.1.1.28	Make-up Water (RCA)	-	126	2	17	138	-	-	77	361
2b.1.1.29	Mechanical Department Equipment	-	1	-	-	-	-	-	-	1
2b.1.1.30	Miscellaneous Reactor Coolant	17	101	4	5	30	31	-	67	256
2b.1.1.31	Nuclear Steam Supply Sampling	-	16	1	1	3	7	-	9	36
2b.1.1.32	Nuclear Steam Supply Sampling (Insulated)	-	7	-	-	1	3	-	4	15
2b.1.1.33	Residual Heat Removal	265	236	55	67	305	583	-	560	2,071
2b.1.1.34	Safety Injection	-	98	4	11	76	31	-	64	284
2b.1.1.35	Safety Injection (Insulated)	-	4	-	-	3	2	-	3	12
2b.1.1.36	Safety Injection (RCA Insulated)	-	30	2	4	23	17	-	22	97
2b.1.1.37	Safety Injection (RCA)	-	250	17	33	203	150	-	193	845
2b.1.1.38	Service Cooling Water	-	118	-	-	-	-	-	25	142
2b.1.1.39	Service Cooling Water (RCA)	-	29	1	4	35	-	-	18	87
2b.1.1.40	Sewer System Expansion	-	40	-	-	-	-	-	8	49
2b.1.1	Totals	1,514	11,507	298	1,015	7,479	2,009	-	7,055	30,878
2b.1.2	Scaffolding in support of decommissioning	-	5,430	33	24	186	27	-	1,966	7,665
Decontamination of Site Buildings										
2b.1.3.1	Reactor	1,524	1,737	381	349	426	3,703	-	3,198	11,317
2b.1.3.2	Auxiliary	1,080	657	112	106	232	1,592	-	1,636	5,416
2b.1.3.3	Capital Additions 85-2004	345	150	24	21	30	345	-	430	1,345
2b.1.3.4	Containment Penetration Area	266	188	29	33	120	394	-	428	1,457
2b.1.3.5	Radwaste Storage	7	56	12	10	8	173	-	91	356
2b.1.3	Totals	3,222	2,788	558	519	816	6,206	-	5,782	19,891

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Burial site: Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2a Period-Dependent Costs														
2a.4.1	Decon supplies					97	-	-	-	-	-	-	24	121
2a.4.2	Insurance					-	-	-	-	-	-	744	186	930
2a.4.3	Property taxes					-	-	-	-	-	-	171	43	213
2a.4.4	Health physics supplies					-	2,295	-	-	-	-	-	574	2,869
2a.4.5	Heavy equipment rental					-	3,973	-	-	-	-	-	993	4,966
2a.4.6	Disposal of DAW generated	5,524				-	-	113	48	-	425	-	147	733
2a.4.7	Plant energy budget					-	-	-	-	-	-	2,131	533	2,664
2a.4.8	NRC ISFSI Fees					-	-	-	-	-	-	321	-	321
2a.4.9	NRC Fees					-	-	-	-	-	-	760	190	950
2a.4.10	Emergency Planning Fees					-	-	-	-	-	-	951	238	1,189
2a.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE					-	-	-	-	-	-	382	96	478
2a.4.12	Spent Fuel Pool O&M					-	-	-	-	-	-	1,239	310	1,549
2a.4.13	ISFSI Operating Costs					-	-	-	-	-	-	238	59	297
2a.4.14	Spent Fuel Storage/Capital Equipment					-	-	-	-	-	-	4,921	1,230	6,151
2a.4.15	ISFSI Fixed Costs					-	-	-	-	-	-	483	121	604
2a.4.16	Security Staff Cost					-	-	-	-	-	-	14,534	3,634	18,168
2a.4.17	DOC Staff Cost					-	-	-	-	-	-	21,917	5,479	27,397
2a.4.18	Utility Staff Cost					-	-	-	-	-	-	31,708	7,927	39,635
2a.4	Subtotal Period 2a Period-Dependent Costs	5,524		-		97	6,268	113	48	-	425	80,503	21,863	109,317
2a.0	TOTAL PERIOD 2a COSTS	81,561	3,224	574		1,609	33,253	13,986	10,569	31,005	37,457	82,278	52,539	262,695
PERIOD 2b - Site Decontamination														
Period 2b Direct Decommissioning Activities														
Disposal of Plant Systems														
2b.1.1.1	Capital Additions 85-2002 (clean)	-		-	-	-	415	-	-	-	-	-	104	519
2b.1.1.2	Capital Additions 85-2002 (contaminated)	224		-	-	-	413	10	47	357	72	-	225	1,123
2b.1.1.3	Chemical & Volume Control	2,029		-	-	728	885	60	93	501	619	-	721	3,606
2b.1.1.4	Chemical & Volume Control (Insulated)	561		-	-	262	342	18	15	48	183	-	217	1,085
2b.1.1.5	Component Cooling Water	-		-	-	-	175	-	-	-	-	-	44	219
2b.1.1.6	Component Cooling Water (RCA)	-		-	-	-	502	14	133	1,089	-	-	435	2,173
2b.1.1.7	Compressed Air	-		-	-	-	109	-	-	-	-	-	27	136
2b.1.1.8	Compressed Air (Insulated)	-		-	-	-	5	-	-	-	-	-	1	7
2b.1.1.9	Compressed Air (RCA Insulated)	-		-	-	-	25	-	1	14	-	-	10	50
2b.1.1.10	Compressed Air RCA	-		-	-	-	446	3	32	263	-	-	186	932
2b.1.1.11	Diesel Engine-Generator	-		-	-	-	126	-	-	-	-	-	31	157
2b.1.1.12	Diesel Engine-Generator (Insulated)	-		-	-	-	3	-	-	-	-	-	1	4
2b.1.1.13	Electrical (Clean)	-		-	-	-	2,873	-	-	-	-	-	718	3,591
2b.1.1.14	Electrical (Contaminated)	63		-	-	-	303	5	37	302	21	-	167	836
2b.1.1.15	Electrical (RCA)	-		-	-	-	1,837	33	318	2,613	-	-	1,200	6,000
2b.1.1.16	Fire Protection	-		-	-	-	318	11	113	932	-	-	343	1,717
2b.1.1.17	Gaseous Radwaste	132		-	-	-	111	5	11	76	42	-	61	307
2b.1.1.18	HVAC (Clean Insulated)	-		-	-	-	37	-	-	-	-	-	9	46
2b.1.1.19	HVAC (Clean)	-		-	-	-	387	-	-	-	-	-	97	483
2b.1.1.20	HVAC (Contaminated Insulated)	64		-	-	-	207	4	31	245	21	-	127	636
2b.1.1.21	HVAC (Contaminated)	474		-	-	-	922	24	155	1,205	154	-	615	3,075
2b.1.1.22	Liquid Radwaste	1,251		-	-	324	375	33	39	176	340	-	322	1,608
2b.1.1.23	Liquid Radwaste (Insulated)	67		-	-	26	35	2	1	2	22	-	22	111
2b.1.1.24	Lube Oil Distribution & Purification	-		-	-	-	229	5	52	425	-	-	178	890
2b.1.1.25	Make-up Water	-		-	-	-	226	-	-	-	-	-	56	282
2b.1.1.26	Make-up Water (Insulated)	-		-	-	-	22	-	-	-	-	-	5	27
2b.1.1.27	Make-up Water (RCA Insulated)	-		-	-	-	27	-	4	30	-	-	15	76
2b.1.1.28	Make-up Water (RCA)	-		-	-	-	137	2	21	171	-	-	83	414
2b.1.1.29	Mechanical Department Equipment	-		-	-	-	1	-	-	-	-	-	0	1
2b.1.1.30	Miscellaneous Reactor Coolant	124		-	-	18	110	4	6	37	39	-	54	268
2b.1.1.31	Nuclear Steam Supply Sampling	26		-	-	-	17	1	1	4	9	-	8	40
2b.1.1.32	Nuclear Steam Supply Sampling (Insulated)	11		-	-	-	8	-	-	1	4	-	3	16
2b.1.1.33	Residual Heat Removal	2,219		-	-	288	256	60	83	379	724	-	448	2,238
2b.1.1.34	Safety Injection	121		-	-	-	106	4	14	94	39	-	64	322
2b.1.1.35	Safety Injection (Insulated)	7		-	-	-	4	-	-	4	2	-	3	13
2b.1.1.36	Safety Injection (RCA Insulated)	63		-	-	-	33	2	5	29	21	-	22	112
2b.1.1.37	Safety Injection (RCA)	571		-	-	-	272	18	41	252	186	-	192	962
2b.1.1.38	Service Cooling Water	-		-	-	-	128	-	-	-	-	-	32	160
2b.1.1.39	Service Cooling Water (RCA)	-		-	-	-	31	1	5	43	-	-	20	101
2b.1.1.40	Sewer System Expansion	-		-	-	-	43	-	-	-	-	-	11	54
2b.1.1	Totals	8,010		-	-	1,644	12,498	324	1,261	9,291	2,496	-	6,878	34,392
2b.1.2	Scaffolding in support of decommissioning	102		-	-	-	5,898	36	30	231	34	-	1,557	7,785
Decontamination of Site Buildings														
2b.1.3.1	Reactor	20,482		-	-	1,655	1,887	414	434	529	4,600	-	2,380	11,898
2b.1.3.2	Auxiliary	6,098		-	-	1,173	714	122	132	288	1,978	-	1,101	5,507
2b.1.3.3	Capital Additions 85-2004	1,320		-	-	375	163	26	26	37	429	-	264	1,320
2b.1.3.4	Containment Penetration Area	1,509		-	-	289	204	31	41	149	489	-	301	1,505
2b.1.3.5	Radwaste Storage	660		-	-	8	61	13	12	10	215	-	80	398
2b.1.3	Totals	30,069		-	-	3,499	3,028	606	645	1,014	7,710	-	4,125	20,627

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
2b.1	Subtotal Period 2b Activity Costs	4,736	19,725	888	1,558	8,480	8,242	-	14,803	58,434	38,181			
Period 2b Collateral Costs														
2b.3.1	Process liquid waste	224	-	185	758	-	956	-	679	2,803	2,749			
2b.3.2	Small tool allowance	-	400	-	-	-	-	-	84	485	-			
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	576	121	697				
2b.3	Subtotal Period 2b Collateral Costs	224	400	185	758	-	956	576	885	3,984	2,749			
Period 2b Period-Dependent Costs														
2b.4.1	Decon supplies	1,457	-	-	-	-	-	-	512	1,969	-			
2b.4.2	Insurance	-	-	-	-	-	-	857	120	978	-			
2b.4.3	Property taxes	-	-	-	-	-	-	196	28	224	-			
2b.4.4	Health physics supplies	-	2,600	-	-	-	-	-	913	3,513	-			
2b.4.5	Heavy equipment rental	-	4,547	-	-	-	-	-	958	5,506	-			
2b.4.6	Disposal of DAW generated	-	-	101	38	-	333	-	139	610	5,365			
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,940	409	2,349	-			
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	371	-	371	-			
2b.4.9	NRC Fees	-	-	-	-	-	-	877	123	1,000	-			
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	724	102	826	-			
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	1,232	260	1,492	-			
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,429	301	1,730	-			
2b.4.13	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	374	79	452	-			
2b.4.14	ISFSI Operating Costs	-	-	-	-	-	-	274	58	332	-			
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	9,137	1,926	11,063	-			
2b.4.16	ISFSI Fixed Costs	-	-	-	-	-	-	557	117	675				
2b.4.17	Security Staff Cost	-	-	-	-	-	-	16,757	3,532	20,289	-			
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	24,325	5,127	29,452	-			
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	35,045	7,386	42,431	-			
2b.4	Subtotal Period 2b Period-Dependent Costs	1,457	7,147	101	38	-	333	94,096	22,088	125,260	5,365			
2b.0	TOTAL PERIOD 2b COSTS	6,418	27,273	1,174	2,353	8,480	9,532	94,672	37,776	187,678	46,294			
Period 2c - Wet Fuel Storage														
Period 2c Direct Decommissioning Activities														
Period 2c Collateral Costs														
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	98,000	2,065	11,865	-			
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	98,000	2,065	11,865	-			
Period 2c Period-Dependent Costs														
2c.4.1	Insurance	-	-	-	-	-	-	3,161	444	3,605	-			
2c.4.2	Property taxes	-	-	-	-	-	-	723	102	825	-			
2c.4.3	Health physics supplies	-	809	-	-	-	-	-	284	1,093	-			
2c.4.4	Disposal of DAW generated	-	-	19	7	-	62	-	26	113	996			
2c.4.5	Plant energy budget	-	-	-	-	-	-	1,908	402	2,310	-			
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,367	-	1,367	-			
2c.4.7	NRC Fees	-	-	-	-	-	-	1,224	172	1,395	-			
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,671	375	3,047	-			
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	3,383	713	4,096	-			
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	5,270	1,111	6,380	-			
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	1,011	213	1,224	-			
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	38,381	8,089	46,470	-			
2c.4.13	ISFSI Fixed Costs	-	-	-	-	-	-	2,055	433	2,488	-			
2c.4.14	Security Staff Cost	-	-	-	-	-	-	52,323	11,027	63,350	-			
2c.4.15	Utility Staff Cost	-	-	-	-	-	-	38,639	8,143	46,782	-			
2c.4	Subtotal Period 2c Period-Dependent Costs	-	809	19	7	-	62	152,115	31,534	184,545	996			
2c.0	TOTAL PERIOD 2c COSTS	-	809	19	7	-	62	161,915	33,599	196,411	996			

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
2b.1	Subtotal Period 2b Activity Costs	5,144	21,423	964	1,936	10,535	10,239	-	12,560	62,801
Period 2b Collateral Costs										
2b.3.1	Process liquid waste	243	-	201	942	-	1,188	-	643	3,217
2b.3.2	Small tool allowance	-	434	-	-	-	-	-	109	543
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	626	156	782
2b.3	Subtotal Period 2b Collateral Costs	243	434	201	942	-	1,188	626	908	4,542
Period 2b Period-Dependent Costs										
2b.4.1	Decon supplies	1,582	-	-	-	-	-	-	396	1,978
2b.4.2	Insurance	-	-	-	-	-	-	931	233	1,163
2b.4.3	Property taxes	-	-	-	-	-	-	213	53	266
2b.4.4	Health physics supplies	-	2,824	-	-	-	-	-	706	3,530
2b.4.5	Heavy equipment rental	-	4,938	-	-	-	-	-	1,235	6,173
2b.4.6	Disposal of DAW generated	-	-	110	47	-	414	-	143	713
2b.4.7	Plant energy budget	-	-	-	-	-	-	2,107	527	2,634
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	403	-	403
2b.4.9	NRC Fees	-	-	-	-	-	-	953	238	1,191
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	786	197	983
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	1,338	335	1,673
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,552	388	1,940
2b.4.13	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	406	102	508
2b.4.14	ISFSI Operating Costs	-	-	-	-	-	-	298	74	372
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	9,924	2,481	12,405
2b.4.16	ISFSI Fixed Costs	-	-	-	-	-	-	605	151	756
2b.4.17	Security Staff Cost	-	-	-	-	-	-	18,200	4,550	22,750
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	26,419	6,605	33,024
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	38,062	9,516	47,578
2b.4	Subtotal Period 2b Period-Dependent Costs	1,582	7,762	110	47	-	414	102,198	28,028	140,141
2b.0	TOTAL PERIOD 2b COSTS	6,971	29,621	1,275	2,923	10,535	11,842	102,823	41,497	207,487
Period 2c - Wet Fuel Storage										
Period 2c Direct Decommissioning Activities										
Period 2c Collateral Costs										
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	106,438	26,609	133,047
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	106,438	26,609	133,047
Period 2c Period-Dependent Costs										
2c.4.1	Insurance	-	-	-	-	-	-	3,433	858	4,291
2c.4.2	Property taxes	-	-	-	-	-	-	785	196	982
2c.4.3	Health physics supplies	-	879	-	-	-	-	-	220	1,098
2c.4.4	Disposal of DAW generated	-	-	21	9	-	77	-	27	133
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,072	518	2,590
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,485	371	1,856
2c.4.7	NRC Fees	-	-	-	-	-	-	1,329	332	1,662
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,901	-	2,901
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	3,674	919	4,593
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	5,724	1,431	7,155
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	1,098	275	1,373
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	41,686	10,421	52,107
2c.4.13	ISFSI Fixed Costs	-	-	-	-	-	-	2,232	558	2,790
2c.4.14	Security Staff Cost	-	-	-	-	-	-	56,828	14,207	71,035
2c.4.15	Utility Staff Cost	-	-	-	-	-	-	41,966	10,491	52,457
2c.4	Subtotal Period 2c Period-Dependent Costs	-	879	21	9	-	77	165,212	41,549	207,746
2c.0	TOTAL PERIOD 2c COSTS	-	879	21	9	-	77	175,856	44,210	221,051

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 2d - Decontamination Following Wet Fuel Storage														
Period 2d Direct Decommissioning Activities														
2d.1.1	Remove Spent Fuel Racks	477	47	136	34	-	656	-	608	1,958	2,496	-	-	-
Disposal of Plant Systems														
2d.1.2.1	Electrical (Contaminated) - FHB	-	86	1	6	45	3	-	42	183	12	-	-	-
2d.1.2.2	Electrical (Decontaminated) - FHB	-	521	6	53	434	-	-	287	1,301	-	-	-	-
2d.1.2.3	Fire Protection (RCA)	-	203	3	27	222	-	-	124	579	-	-	-	-
2d.1.2.4	HVAC (Contaminated) - FHB	-	190	4	27	212	17	-	124	573	65	-	-	-
2d.1.2.5	Spent Fuel Pit Cooling	-	72	22	26	119	222	-	137	597	844	-	-	-
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	98	24	28	129	238	-	154	671	907	-	-	-
2d.1.2	Totals	-	1,169	60	166	1,162	480	-	868	3,905	1,828	-	-	-
Decontamination of Site Buildings														
2d.1.3.1	Fuel Handling	665	723	39	48	206	510	-	959	3,150	1,965	-	-	-
2d.1.3	Totals	665	723	39	48	206	510	-	959	3,150	1,965	-	-	-
2d.1.4	Scaffolding in support of decommissioning	-	1,086	7	5	37	5	-	393	1,533	20	-	-	-
2d.1	Subtotal Period 2d Activity Costs	1,142	3,024	242	253	1,404	1,652	-	2,828	10,546	6,310	-	-	-
Period 2d Additional Costs														
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	669	282	951	-	-	-	-
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	669	282	951	-	-	-	-
Period 2d Collateral Costs														
2d.3.1	Process liquid waste	116	-	53	215	-	200	-	204	787	793	-	-	-
2d.3.2	Small tool allowance	-	68	-	-	-	-	-	14	83	-	-	-	-
2d.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	99	-	219	1,232	378	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	116	68	174	322	686	299	-	438	2,102	1,171	-	-	-
Period 2d Period-Dependent Costs														
2d.4.1	Decon Supplies	210	-	-	-	-	-	-	74	284	-	-	-	-
2d.4.2	Insurance	-	-	-	-	-	-	177	25	202	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	46	7	53	-	-	-	-
2d.4.4	Health physics supplies	-	445	-	-	-	-	-	156	602	-	-	-	-
2d.4.5	Heavy Equipment Rental	-	1,076	-	-	-	-	-	227	1,303	-	-	-	-
2d.4.6	Disposal of DAW generated	-	-	35	13	-	115	-	48	212	1,862	-	-	-
2d.4.7	Plant energy budget	-	-	-	-	-	-	245	52	296	-	-	-	-
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	88	-	88	-	-	-	-
2d.4.9	NRC Fees	-	-	-	-	-	-	207	29	237	-	-	-	-
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	171	24	196	-	-	-	-
2d.4.11	Spent Fuel Transfer - Pool or SFSI to DOE	-	-	-	-	-	-	207	44	251	-	-	-	-
2d.4.12	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	177	37	214	-	-	-	-
2d.4.13	ISFSI Operating Costs	-	-	-	-	-	-	65	14	79	-	-	-	-
2d.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	132	28	160	-	-	-	-
2d.4.15	Security Staff Cost	-	-	-	-	-	-	2,143	452	2,594	-	-	-	-
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	3,931	828	4,759	-	-	-	-
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	6,066	1,278	7,344	-	-	-	-
2d.4	Subtotal Period 2d Period-Dependent Costs	210	1,521	35	13	-	115	13,655	3,322	18,873	1,862	-	-	-
2d.0	TOTAL PERIOD 2d COST	1,468	4,614	451	588	2,090	2,066	14,324	6,870	32,471	9,342	-	-	-
PERIOD 2e - License Termination														
Period 2e Direct Decommissioning Acticities														
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	64	217	-	-	-	-
2e.1.2	Terminate license	-	-	-	-	-	-	-	-	-	-	-	-	-
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	153	64	217	-	-	-	-
Period 2e Additional Costs														
2e.2.1	License Termination Survey	-	-	-	-	-	-	11,808	4,977	16,785	-	-	-	-
2e.2	Subtotal 2e Additional Costs	-	-	-	-	-	-	11,808	4,977	16,785	-	-	-	-
Period 2e Collateral Costs														
2e.3.1	DOC Staff relocation expenses	-	-	-	-	-	-	1,395	294	1,689	-	-	-	-
2e.3	Subtotal 2e Collateral Costs	-	-	-	-	-	-	1,395	294	1,689	-	-	-	-

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2d - Decontamination Following Wet Fuel Storage										
Period 2d Direct Decommissioning Activities										
2d.1.1	Remove Spent Fuel Racks	518	51	148	42	-	815	-	394	1,968
Disposal of Plant Systems										
2d.1.2.1	Electrical (Contaminated) - FHB	-	93	1	7	56	4	-	40	202
2d.1.2.2	Electrical (Decontaminated) - FHB	-	566	7	66	539	-	-	294	1,472
2d.1.2.3	Fire Protection (RCA)	-	220	3	34	276	-	-	133	666
2d.1.2.4	HVAC (Contaminated) - FHB	-	206	4	34	263	21	-	132	661
2d.1.2.5	Spent Fuel Pit Cooling	-	78	24	32	148	276	-	140	698
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	106	26	35	160	296	-	156	779
2d.1.2	Totals	-	1,270	65	206	1,444	596	-	895	4,476
Decontamination of Site Buildings										
2d.1.3.1	Fuel Handling	722	785	42	60	256	634	-	625	3,124
2d.1.3	Totals	722	785	42	60	256	634	-	625	3,124
2d.1.4	Scaffolding in support of decommissioning	-	1,180	8	6	46	6	-	311	1,557
2d.1	Subtotal Period 2d Activity Costs	1,240	3,284	263	314	1,744	2,052	-	2,225	11,123
Period 2d Additional Costs										
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	727	182	908
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	727	182	908
Period 2d Collateral Costs										
2d.3.1	Process liquid waste	126	-	58	267	-	248	-	175	874
2d.3.2	Small tool allowance	-	74	-	-	-	-	-	18	92
2d.3.3	Decommissioning Equipment Disposition	-	-	131	133	852	123	-	310	1,549
2d.3	Subtotal Period 2d Collateral Costs	126	74	189	400	852	371	-	503	2,516
Period 2d Period-Dependent Costs										
2d.4.1	Decon Supplies	228	-	-	-	-	-	-	57	285
2d.4.2	Insurance	-	-	-	-	-	-	192	48	240
2d.4.3	Property taxes	-	-	-	-	-	-	50	12	62
2d.4.4	Health physics supplies	-	483	-	-	-	-	-	121	604
2d.4.5	Heavy Equipment Rental	-	1,169	-	-	-	-	-	292	1,461
2d.4.6	Disposal of DAW generated	-	-	38	16	-	143	-	49	246
2d.4.7	Plant energy budget	-	-	-	-	-	-	266	67	333
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	96	-	96
2d.4.9	NRC Fees	-	-	-	-	-	-	225	56	281
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	186	46	232
2d.4.11	Spent Fuel Transfer - Pool or SFSI to DOE	-	-	-	-	-	-	225	56	281
2d.4.12	Liquid Radwaste Processing Equipment/Serv	-	-	-	-	-	-	192	48	240
2d.4.13	ISFSI Operating Costs	-	-	-	-	-	-	71	18	88
2d.4.14	ISFSI Fixed Costs	-	-	-	-	-	-	143	36	179
2d.4.15	Security Staff Cost	-	-	-	-	-	-	2,328	582	2,909
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	4,269	1,067	5,337
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	6,588	1,647	8,235
2d.4	Subtotal Period 2d Period-Dependent Costs	228	1,652	38	16	-	143	14,831	4,227	21,135
2d.0	TOTAL PERIOD 2d COST	1,594	5,011	490	730	2,596	2,567	15,557	7,137	35,683
PERIOD 2e - License Termination										
Period 2e Direct Decommissioning Acticities										
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	166	42	208
2e.1.2	Terminate license	-	-	-	-	-	-	-	-	-
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	166	42	208
Period 2e Additional Costs										
2e.2.1	License Termination Survey	-	-	-	-	-	-	12,825	3,206	16,031
2e.2	Subtotal 2e Additional Costs	-	-	-	-	-	-	12,825	3,206	16,031
Period 2e Collateral Costs										
2e.3.1	DOC Staff relocation expenses	-	-	-	-	-	-	1,515	379	1,894
2e.3	Subtotal 2e Collateral Costs	-	-	-	-	-	-	1,515	379	1,894

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 2e Period-Dependent Costs														
2e.4.1	Insurance	-	-	-	-	-	-	290	41	330	-	-		
2e.4.2	Property taxes	-	-	-	-	-	-	76	11	87	-	-		
2e.4.3	Health physics supplies	-	1,242	-	-	-	-	-	436	1,679	-	-		
2e.4.4	Disposal of DAW generated	-	-	7	2	-	22	-	9	40	355	-		
2e.4.5	Plant energy budget	-	-	-	-	-	-	200	42	243	-	-		
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	144	-	144	-	-		
2e.4.7	NRC Fees	-	-	-	-	-	-	355	50	405	-	-		
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	281	39	320	-	-		
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	339	71	410	-	-		
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	106	22	129	-	-		
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	216	45	261	-	-		
2e.4.12	Security Staff Cost	-	-	-	-	-	-	3,433	723	4,156	-	-		
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	4,840	1,020	5,861	-	-		
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	5,631	1,187	6,817	-	-		
2e.4	Subtotal Period 2e Period-Dependent Costs	-	1,242	7	2	-	22	15,910	3,698	20,881	355	-		
2e.0	TOTAL PERIOD 2e COST	-	1,242	7	2	-	20	29,265	9,033	39,572	355	-		
PERIOD 2 TOTALS		9,367	64,556	14,528	11,458	35,529	41,833	375,931	144,239	697,441	138,548	3,224	574	
PERIOD 3b Site Restoration														
Perod 3b Direct Decommissioning Activities														
Demolition of Remaining Site Buildings														
3b.1.1.1	Reactor	-	6,873	-	-	-	-	-	1,449	8,322	-	-		
3b.1.1.2	Administration	-	960	-	-	-	-	-	202	1,163	-	-		
3b.1.1.3	Auxiliary	-	5,977	-	-	-	-	-	1,260	7,237	-	-		
3b.1.1.4	Capital Additions 85-2004	-	3,915	-	-	-	-	-	825	4,740	-	-		
3b.1.1.5	Chemical Storage	-	4	-	-	-	-	-	1	5	-	-		
3b.1.1.6	Chlorination	-	8	-	-	-	-	-	2	10	-	-		
3b.1.1.7	Circulating Water Tunnels	-	1,008	-	-	-	-	-	213	1,221	-	-		
3b.1.1.8	Cold Machine Shop	-	357	-	-	-	-	-	75	433	-	-		
3b.1.1.9	Communication	-	4	-	-	-	-	-	1	5	-	-		
3b.1.1.10	Condensate Polishing/Technical Support	-	763	-	-	-	-	-	161	923	-	-		
3b.1.1.11	Containment Penetration Area	-	615	-	-	-	-	-	130	745	-	-		
3b.1.1.12	Discharge Structure	-	854	-	-	-	-	-	180	1,034	-	-		
3b.1.1.13	Fabrication Shop	-	107	-	-	-	-	-	23	130	-	-		
3b.1.1.14	Fire Pump House	-	5	-	-	-	-	-	1	5	-	-		
3b.1.1.15	Hazardous Waste Storage Facility	-	35	-	-	-	-	-	7	42	-	-		
3b.1.1.16	Intake Structure	-	4,868	-	-	-	-	-	1,026	5,893	-	-		
3b.1.1.17	Maintenance Shop	-	330	-	-	-	-	-	69	399	-	-		
3b.1.1.18	Miscellaneous Structures	-	57	-	-	-	-	-	12	69	-	-		
3b.1.1.19	NPO Permanent Warehouse	-	1,221	-	-	-	-	-	257	1,478	-	-		
3b.1.1.20	Ponds	-	2	-	-	-	-	-	-	2	-	-		
3b.1.1.21	Portable Fire Pump & Fuel Cart	-	1	-	-	-	-	-	-	1	-	-		
3b.1.1.22	Pretreatment	-	9	-	-	-	-	-	2	11	-	-		
3b.1.1.23	Radwaste Storage	-	1,595	-	-	-	-	-	336	1,931	-	-		
3b.1.1.24	Radwaste Storage Facility (Additional)	-	42	-	-	-	-	-	9	51	-	-		
3b.1.1.25	Rotor Warehouse	-	742	-	-	-	-	-	156	898	-	-		
3b.1.1.26	Security	-	303	-	-	-	-	-	64	366	-	-		
3b.1.1.27	Security Buildings (Additional)	-	46	-	-	-	-	-	10	56	-	-		
3b.1.1.28	Simulator	-	370	-	-	-	-	-	78	448	-	-		
3b.1.1.29	Steam Generator Storage Facility	-	821	-	-	-	-	-	173	994	-	-		
3b.1.1.30	Telephone Terminal	-	2	-	-	-	-	-	1	3	-	-		
3b.1.1.31	Turbine	-	4,940	-	-	-	-	-	1,041	5,981	-	-		
3b.1.1.32	Turbine Pedestal	-	1,212	-	-	-	-	-	255	1,467	-	-		
3b.1.1.33	Vehicle Maintenance	-	30	-	-	-	-	-	6	37	-	-		
3b.1.1.34	Waste Water Holding & Treatment Facility	-	20	-	-	-	-	-	4	24	-	-		
3b.1.135	Fuel Handling	-	1,689	-	-	-	-	-	356	2,045	-	-		
3b.1.1	Totals	-	39,784	-	-	-	-	-	8,384	48,168	-	-		
Site Closeout Activities														
3b.1.2	Remove Rubble	-	1,470	-	-	-	-	-	310	1,779	-	-		
3b.1.3	Grade & landscape site	-	2,272	-	-	-	-	-	479	2,751	-	-		
3b.1.4	Final report to NRC	-	-	-	-	-	-	80	17	97	-	-		
3b.1	Subtotal Period 3b Activity Costs	-	43,526	-	-	-	-	80	9,190	52,795	-	-		
Period 3b Additional Cost														
3b.2.1	Concrete Crushing	-	8,467	-	7	-	-	-	1,786	10,261	-	-		
3b.2.2	Breakwater Demolition & Removal	-	33,893	-	-	-	-	-	11,905	45,798	-	-		
3b.2.3	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	92	530	-	-		
3b.2	Subtotal Period 3b Additional Costs	-	42,798	-	7	-	-	-	13,783	56,589	-	-		
Period 3b Collateral Costs														
3b.3.1	Small tool allowance	-	797	-	-	-	-	-	168	965	-	-		
3b.3	Subtotal 3b Collateral Costs	-	797	-	-	-	-	-	168	965	-	-		

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 2e Period-Dependent Costs										
2e.4.1	Insurance	-	-	-	-	-	-	315	79	394
2e.4.2	Property taxes	-	-	-	-	-	-	83	21	103
2e.4.3	Health physics supplies	-	1,349	-	-	-	-	-	337	1,686
2e.4.4	Disposal of DAW generated	-	-	8	2	-	27	-	9	47
2e.4.5	Plant energy budget	-	-	-	-	-	-	217	54	272
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	156	-	156
2e.4.7	NRC Fees	-	-	-	-	-	-	386	96	482
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	305	76	381
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	368	92	460
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	115	29	144
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	235	59	293
2e.4.12	Security Staff Cost	-	-	-	-	-	-	3,729	932	4,661
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	5,257	1,314	6,571
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	6,116	1,529	7,645
2e.4	Subtotal Period 2e Period-Dependent Costs	-	1,349	8	2	-	27	17,280	4,667	23,333
2e.0	TOTAL PERIOD 2e COST	-	1,349	8	2	-	25	31,785	8,292	41,461
PERIOD 2 TOTALS		10,173	70,114	15,779	14,234	44,138	51,969	408,299	153,677	768,383
PERIOD 3b Site Restoration										
Perod 3b Direct Decommissioning Activities										
Demolition of Remaining Site Buildings										
3b.1.1.1	Reactor	-	7,465	-	-	-	-	-	1,866	9,331
3b.1.1.2	Administration	-	1,043	-	-	-	-	-	261	1,303
3b.1.1.3	Auxiliary	-	6,492	-	-	-	-	-	1,623	8,115
3b.1.1.4	Capital Additions 85-2004	-	4,252	-	-	-	-	-	1,063	5,315
3b.1.1.5	Chemical Storage	-	4	-	-	-	-	-	1	5
3b.1.1.6	Chlorination	-	9	-	-	-	-	-	2	11
3b.1.1.7	Circulating Water Tunnels	-	1,095	-	-	-	-	-	274	1,368
3b.1.1.8	Cold Machine Shop	-	388	-	-	-	-	-	97	485
3b.1.1.9	Communication	-	4	-	-	-	-	-	1	5
3b.1.1.10	Condensate Polishing/Technical Support	-	829	-	-	-	-	-	207	1,036
3b.1.1.11	Containment Penetration Area	-	668	-	-	-	-	-	167	835
3b.1.1.12	Discharge Structure	-	928	-	-	-	-	-	232	1,159
3b.1.1.13	Fabrication Shop	-	116	-	-	-	-	-	29	145
3b.1.1.14	Fire Pump House	-	5	-	-	-	-	-	1	7
3b.1.1.15	Hazardous Waste Storage Facility	-	38	-	-	-	-	-	10	48
3b.1.1.16	Intake Structure	-	5,287	-	-	-	-	-	1,322	6,609
3b.1.1.17	Maintenance Shop	-	358	-	-	-	-	-	90	448
3b.1.1.18	Miscellaneous Structures	-	62	-	-	-	-	-	15	77
3b.1.1.19	NPO Permanent Warehouse	-	1,326	-	-	-	-	-	332	1,658
3b.1.1.20	Ponds	-	2	-	-	-	-	-	1	3
3b.1.1.21	Portable Fire Pump & Fuel Cart	-	1	-	-	-	-	-	0	1
3b.1.1.22	Pretreatment	-	10	-	-	-	-	-	2	12
3b.1.1.23	Radwaste Storage	-	1,732	-	-	-	-	-	433	2,165
3b.1.1.24	Radwaste Storage Facility (Additional)	-	46	-	-	-	-	-	11	57
3b.1.1.25	Rotor Warehouse	-	806	-	-	-	-	-	201	1,007
3b.1.1.26	Security	-	329	-	-	-	-	-	82	411
3b.1.1.27	Security Buildings (Additional)	-	50	-	-	-	-	-	12	62
3b.1.1.28	Simulator	-	402	-	-	-	-	-	100	502
3b.1.1.29	Steam Generator Storage Facility	-	892	-	-	-	-	-	223	1,115
3b.1.1.30	Telephone Terminal	-	2	-	-	-	-	-	1	3
3b.1.1.31	Turbine	-	5,365	-	-	-	-	-	1,341	6,707
3b.1.1.32	Turbine Pedestal	-	1,316	-	-	-	-	-	329	1,645
3b.1.1.33	Vehicle Maintenance	-	33	-	-	-	-	-	8	41
3b.1.1.34	Waste Water Holding & Treatment Facility	-	22	-	-	-	-	-	5	27
3b.1.135	Fuel Handling	-	1,834	-	-	-	-	-	459	2,293
3b.1.1	Totals	-	43,209	-	-	-	-	-	10,802	54,012
Site Closeout Activities										
3b.1.2	Remove Rubble	-	1,597	-	-	-	-	-	399	1,996
3b.1.3	Grade & landscape site	-	2,468	-	-	-	-	-	617	3,085
3b.1.4	Final report to NRC	-	-	-	-	-	-	87	22	109
3b.1	Subtotal Period 3b Activity Costs	-	47,274	-	-	-	-	87	11,840	59,201
Period 3b Additional Cost										
3b.2.1	Concrete Crushing	-	9,196	-	9	-	-	-	2,301	11,506
3b.2.2	Breakwater Demolition & Removal	-	36,811	-	-	-	-	-	9,203	46,014
3b.2.3	Cofferdam Construction and Teardown	-	476	-	-	-	-	-	119	595
3b.2	Subtotal Period 3b Additional Costs	-	46,483	-	9	-	-	-	11,623	58,115
Period 3b Collateral Costs										
3b.3.1	Small tool allowance	-	866	-	-	-	-	-	216	1,082
3b.3	Subtotal 3b Collateral Costs	-	866	-	-	-	-	-	216	1,082

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Burial site Class B Cu. Feet	Burial site Class C Cu. Feet	Burial site GTCC Cu. Feet
Period 3b Period-Dependent Costs														
3b.4.1	Insurance	-	-	-	-	-	-	787	111	898	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	207	29	236	-	-	-	-
3b.4.3	Heavy equipment rental	-	6,420	-	-	-	-	-	1,353	7,772	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	273	57	330	-	-	-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	391	-	391	-	-	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	763	107	870	-	-	-	-
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	921	194	1,115	-	-	-	-
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	289	61	350	-	-	-	-
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	587	124	711	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	9,337	1,968	11,305	-	-	-	-
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	12,616	2,659	15,275	-	-	-	-
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	7,795	1,643	9,438	-	-	-	-
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,420	-	-	-	-	33,965	8,305	48,690	-	-	-	-
3b.0	TOTAL PERIOD 3b COST	-	93,541	-	7	-	-	34,045	31,447	159,040	-	-	-	-
PERIOD 3c - Fuel Storage Operations/Shipping														
Period 3c Direct Decommissioning Activities														
Period 3c I Collateral Costs														
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs														
3c.4.1	Insurance	-	-	-	-	-	-	4,184	588	4,772	-	-	-	-
3c.4.2	Property taxes	-	-	-	-	-	-	1,098	154	1,252	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,075	-	2,075	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,055	570	4,625	-	-	-	-
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,865	1,025	5,891	-	-	-	-
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,534	323	1,857	-	-	-	-
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,119	657	3,777	-	-	-	-
3c.4.9	Security Staff Cost	-	-	-	-	-	-	20,852	4,394	25,246	-	-	-	-
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,130	1,081	6,212	-	-	-	-
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	46,913	8,794	55,706	-	-	-	-
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	46,913	8,794	55,706	-	-	-	-
PERIOD 3d - GTCC shipping														
Period 3d Direct Decommissioning Activities														
Nuclear Steam Supply System Removal														
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	300	-	-	8,952	-	1,929	11,181	-	-	-	433
3d.1.1	Totals	-	-	300	-	-	8,952	-	1,929	11,181	-	-	-	433
3d.1	Subtotal Period 3d Activity Costs	-	-	300	-	-	8,952	-	1,929	11,181	-	-	-	433
Period 3d I Collateral Costs														
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3d Period-Dependent Costs														
3d.4.1	Insurance	-	-	-	-	-	-	15	2	17	-	-	-	-
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	4	-	-	-	-
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	7	-	7	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	14	2	16	-	-	-	-
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7	-	-	-	-
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	11	2	13	-	-	-	-
3d.4.8	Security Staff Cost	-	-	-	-	-	-	73	15	89	-	-	-	-
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	18	4	22	-	-	-	-
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	148	27	175	-	-	-	-
3d.0	TOTAL PERIOD 3d COST	-	-	300	-	-	8,952	148	1,956	11,357	-	-	-	-

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
Period 3b Period-Dependent Costs										
3b.4.1	Insurance	-	-	-	-	-	-	855	214	1,068
3b.4.2	Property taxes	-	-	-	-	-	-	225	56	281
3b.4.3	Heavy equipment rental	-	6,973	-	-	-	-	-	1,743	8,716
3b.4.4	Plant energy budget	-	-	-	-	-	-	297	74	371
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	425	-	425
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	829	207	1,036
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	1,000	250	1,250
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	314	78	392
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	638	159	797
3b.4.10	Security Staff Cost	-	-	-	-	-	-	10,141	2,535	12,676
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	13,702	3,426	17,128
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	8,466	2,117	10,583
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,973	-	-	-	-	36,889	10,966	54,828
3b.0	TOTAL PERIOD 3b COST	-	101,595	-	9	-	-	36,976	34,645	173,225
PERIOD 3c - Fuel Storage Operations/Shipping										
Period 3c Direct Decommissioning Activities										
Period 3c I Collateral Costs										
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs										
3c.4.1	Insurance	-	-	-	-	-	-	4,544	1,136	5,680
3c.4.2	Property taxes	-	-	-	-	-	-	1,193	298	1,491
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,254	563	2,817
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,404	1,101	5,505
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	5,284	1,321	6,605
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,666	417	2,083
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,388	847	4,234
3c.4.9	Security Staff Cost	-	-	-	-	-	-	22,647	5,662	28,309
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,572	1,393	6,965
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	50,952	12,738	63,690
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	50,952	12,738	63,690
PERIOD 3d - GTCC shipping										
Period 3d Direct Decommissioning Activities										
Nuclear Steam Supply System Removal										
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	326	-	-	11,121	-	2,862	14,309
3d.1.1	Totals	-	-	326	-	-	11,121	-	2,862	14,309
3d.1	Subtotal Period 3d Activity Costs	-	-	326	-	-	11,121	-	2,862	14,309
Period 3d I Collateral Costs										
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-
Period 3d Period-Dependent Costs										
3d.4.1	Insurance	-	-	-	-	-	-	16	4	20
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	5
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	8	-	8
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	15	4	19
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	12	3	15
3d.4.8	Security Staff Cost	-	-	-	-	-	-	79	20	99
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	20	5	24
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	161	40	201
3d.0	TOTAL PERIOD 3d COST	-	-	326	-	-	11,121	161	2,902	14,510

NOTE: Totals may not sum due to rounding

TABLE C-1
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2008 Dollars)

ID Number	Activity Description	Decon Cost	Removal Cost	Packaging Cost	Transport Cost	Off-Site Processing Cost	LLRW Disposal Cost	Other Costs	Total Contingency	Total Costs	Burial site Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet
PERIOD 3e - ISFSI Decontamination														
Period 3e Direct Decommissioning Activities														
Period 3e Additional Costs														
3e.2.1	ISFSI License Termination	-	1,059	4	100	-	387	789	689	3,028	6,239	-	-	-
3e.2	Subtotal Period 3e Additional Costs	-	1,059	4	100	-	387	789	689	3,028	6,239	-	-	-
Period 3e Collateral Costs														
3e.3.1	Small tool allowance	-	14	-	-	-	-	-	3	17	-	-	-	-
3e.3	Subtotal 3e Collateral Costs	-	14	-	-	-	-	-	3	17	-	-	-	-
Period 3e Period-Dependent Costs														
3e.4.1	Insurance	-	-	-	-	-	-	127	18	145	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	33	5	38	-	-	-	-
3e.4.3	Heavy equipment rental	-	309	-	-	-	-	-	65	375	-	-	-	-
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-
3e.4.5	Security Staff Cost	-	-	-	-	-	-	172	36	207	-	-	-	-
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	129	27	156	-	-	-	-
3e.4	Subtotal Period 3e Period-Dependent Costs	-	309	-	-	-	-	461	151	922	-	-	-	-
3e.0	TOTAL PERIOD 3e COST	-	1,383	4	100	-	387	1,250	843	3,967	6,239	-	-	-
PERIOD 3f - ISFSI Site Restoration														
Period 3f Direct Decommissioning Activities														
Period 3f Additional Costs														
3f.2.1	ISFSI Demolition and Site Restoration	-	562	-	-	-	-	24	123	709	-	-	-	-
3f.2	Subtotal Period 3f Additional Costs	-	562	-	-	-	-	24	123	709	-	-	-	-
Period 3f Collateral Costs														
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5	-	-	-	-
3f.3	Subtotal 3f Collateral Costs	-	4	-	-	-	-	-	1	5	-	-	-	-
Period 3f Period-Dependent Costs														
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	17	2	19	-	-	-	-
3f.4.3	Heavy equipment rental	-	103	-	-	-	-	-	22	125	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.6	Security Staff Cost	-	-	-	-	-	-	86	18	105	-	-	-	-
3f.4.7	Utility Staff Cost	-	-	-	-	-	-	54	11	66	-	-	-	-
3f.4	Subtotal Period 3f Period-Dependent Costs	-	103	-	-	-	-	158	54	314	-	-	-	-
3f.0	TOTAL PERIOD 3f COST	-	669	-	-	-	-	181	178	1,028	-	-	-	-
PERIOD 3 TOTALS		-	95,592	304	107	-	9,339	82,537	43,217	231,097	6,239	-	-	433
TOTAL COST TO DECOMMISSION		13,430	162,600	15,038	12,363	35,529	58,267	548,492	211,479	1,057,198	146,080	5,645	574	433

TABLE C-2
DIABLO CANYON POWER PLANT UNIT 2
DECON DECOMMISSIONING COST ESTIMATE
(Thousands of 2011 Dollars)

ID Number	Activity Description	Decon	Remove	Packaging	Transport	Off-Site Processing	LLRW Disposal	Other	Contingency	Total
PERIOD 3e - ISFSI Decontamination										
Period 3e Direct Decommissioning Activities										
Period 3e Additional Costs										
3e.2.1	ISFSI License Termination	-	1,150	4	124	-	481	857	654	3,271
3e.2	Subtotal Period 3e Additional Costs	-	1,150	4	124	-	481	857	654	3,271
Period 3e Collateral Costs										
3e.3.1	Small tool allowance	-	15	-	-	-	-	-	4	19
3e.3	Subtotal 3e Collateral Costs	-	15	-	-	-	-	-	4	19
Period 3e Period-Dependent Costs										
3e.4.1	Insurance	-	-	-	-	-	-	138	34	172
3e.4.2	Property taxes	-	-	-	-	-	-	36	9	45
3e.4.3	Heavy equipment rental	-	336	-	-	-	-	-	84	420
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-
3e.4.5	Security Staff Cost	-	-	-	-	-	-	187	47	234
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	140	35	175
3e.4	Subtotal Period 3e Period-Dependent Costs	-	336	-	-	-	-	501	209	1,045
3e.0	TOTAL PERIOD 3e COST	-	1,502	4	124	-	481	1,358	867	4,336
PERIOD 3f - ISFSI Site Restoration										
Period 3f Direct Decommissioning Activities										
Period 3f Additional Costs										
3f.2.1	ISFSI Demolition and Site Restoration	-	610	-	-	-	-	26	159	796
3f.2	Subtotal Period 3f Additional Costs	-	610	-	-	-	-	26	159	796
Period 3f Collateral Costs										
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5
3f.3	Subtotal 3f Collateral Costs	-	4	-	-	-	-	-	1	5
Period 3f Period-Dependent Costs										
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	18	5	23
3f.4.3	Heavy equipment rental	-	112	-	-	-	-	-	28	140
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-
3f.4.6	Security Staff Cost	-	-	-	-	-	-	93	23	117
3f.4.7	Utility Staff Cost	-	-	-	-	-	-	59	15	73
3f.4	Subtotal Period 3f Period-Dependent Costs	-	112	-	-	-	-	172	71	354
3f.0	TOTAL PERIOD 3f COST	-	727	-	-	-	-	197	231	1,154
PERIOD 3 TOTALS		-	**103,822**	**330**	**133**	-	**11,602**	**89,643**	**51,383**	**256,914**
TOTAL COST TO DECOMMISSION		**14,586**	**176,600**	**16,333**	**15,359**	**44,138**	**72,385**	**595,717**	**233,779**	**1,168,897**

Decommissioning Cost Analysis for the Diablo Canyon Power Plant

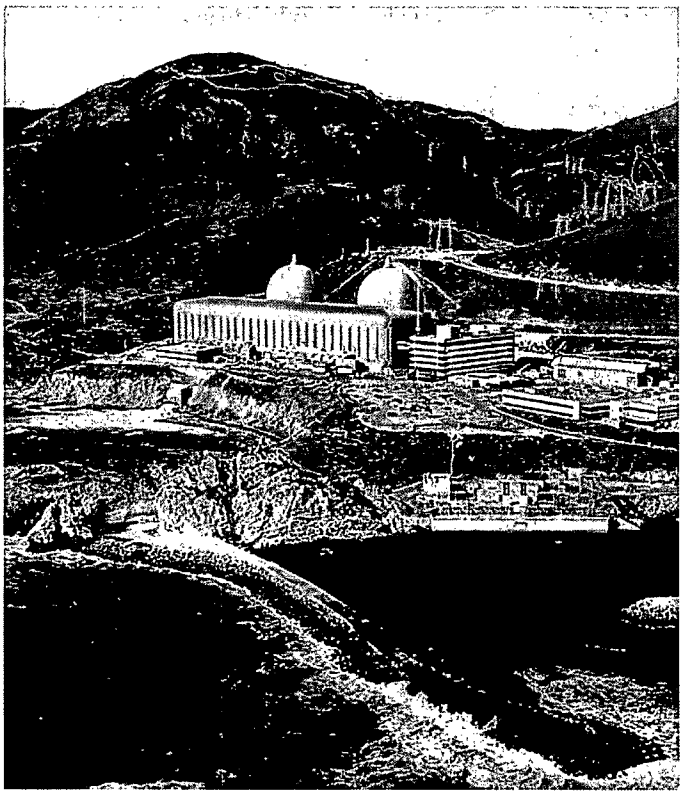
(TLG Services, Inc.)

Document P01-1604-003, Rev. 0

DECOMMISSIONING COST ANALYSIS

for the

DIABLO CANYON POWER PLANT



prepared for

Pacific Gas and Electric Company

prepared by

TLG Services, Inc.
Bridgewater, Connecticut

March 2009

APPROVALS

Project Manager	**Geoffrey M. Griffiths**	3/26/2009 **Date**
Project Engineer	**John A. Carlson**	3/26/09 **Date**
Technical Manager	**Francis W. Seymore**	3/27/09 **Date**
Quality Assurance Manager	**Joseph J. Adler**	03/26/09 **Date**

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REVISION LOG

No.	CRA No.	Date	Item Revised	Reason for Revision
0		03-27-09		Original Issue

EXECUTIVE SUMMARY

This report presents estimates of the cost to decommission the Diablo Canyon Power Plant (Diablo Canyon) for the selected decommissioning scenarios following the scheduled cessation of plant operations. The analysis relies upon site-specific, technical information from an evaluation prepared in 2005,[1] updated to reflect current assumptions pertaining to the disposition of the nuclear plant and relevant industry experience in undertaking such projects. The current estimates are designed to provide Pacific Gas and Electric Company (PG&E), with sufficient information to assess the plant owners' financial obligations, as they pertain to the eventual decommissioning of the nuclear plant.

The primary goal of the decommissioning is the removal and disposal of the contaminated systems and structures so that the plant's operating licenses can be terminated. The analysis recognizes that spent fuel will be stored at the site in the plant's storage pools and in an independent spent fuel storage installation (ISFSI) until such time that it can be transferred to the U.S. Department of Energy (DOE) federal repository. Consequently, the estimates also include those costs to manage and subsequently decommission these interim storage facilities.

The currently projected cost to decommission the station, assuming the DECON alternative, is estimated at $1,828.3 million, as reported in 2008 dollars. An estimate for the SAFSTOR alternative is also provided.

The estimates are based on numerous fundamental assumptions, including regulatory requirements, project contingencies, low-level radioactive waste disposal practices, high-level radioactive waste management options, and site restoration requirements. The estimates incorporate a minimum cooling period of approximately 12 years for the spent fuel that resides in the storage pools when operations cease.[2] In both scenarios that were analyzed, any residual fuel remaining in the pools after the 12-year period is relocated to the ISFSI to await transfer to a DOE facility. The estimates also include the dismantling of site structures and non-essential facilities and the limited restoration of the site.

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1 "Decommissioning Cost Analysis for the Diablo Canyon Power Plant," Document No. P01-1513-004, Rev. 0, TLG Services, Inc., June 2005

2 The current Part 72 ISFSI license does not allow dry cask storage of spent fuel with burnups above 45,000 MWD/metric ton. It is assumed that PG&E can amend the Part 72 license to store the higher burnup fuel, but that as a condition of the amendment it will require longer decay times (12 years) before storing the spent fuel in the casks.

Alternatives and Regulations

The ultimate objective of the decommissioning process is to reduce the inventory of contaminated and activated material so that the license can be terminated. The Nuclear Regulatory Commission (NRC or Commission) provided initial decommissioning requirements in its rule adopted on June 27, 1988.[3] In this rule, the NRC set forth financial criteria for decommissioning licensed nuclear power facilities. The regulations addressed planning needs, timing, funding methods, and environmental review requirements for decommissioning. The rule also defined three decommissioning alternatives as being acceptable to the NRC: DECON, SAFSTOR, and ENTOMB.

> DECON is defined as "the alternative in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for unrestricted use shortly after cessation of operations."[4]
>
> SAFSTOR is defined as "the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use."[5] Decommissioning is to be completed within 60 years, although longer time periods will be considered when necessary to protect public health and safety.
>
> ENTOMB is defined as "the alternative in which radioactive contaminants are encased in a structurally long-lived material, such as concrete; the entombed structure is appropriately maintained and continued surveillance is carried out until the radioactive material decays to a level permitting unrestricted release of the property."[6] As with the SAFSTOR alternative, decommissioning is currently required to be completed within 60 years.
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> The 60-year restriction has limited the practicality for the ENTOMB alternative at commercial reactors that generate significant amounts of long-lived radioactive material. In 1997, the Commission directed its staff

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3 U.S. Code of Federal Regulations, Title 10, Parts 30, 40, 50, 51, 70 and 72 "General Requirements for Decommissioning Nuclear Facilities," Nuclear Regulatory Commission, Federal Register Volume 53, Number 123 (p 24018 et seq.), June 27, 1988

4 Ibid. Page FR24022, Column 3

5 Ibid.

6 Ibid. Page FR24023, Column 2

to re-evaluate this alternative and identify the technical requirements and regulatory actions that would be necessary for entombment to become a viable option. The resulting evaluation provided several recommendations, however, rulemaking has been deferred pending the completion of additional research studies, for example, on engineered barriers.

In 1996, the NRC published revisions to the general requirements for decommissioning nuclear power plants to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in the decommissioning process.[7] The amendments allow for greater public participation and better define the transition process from operations to decommissioning. Regulatory Guide 1.184, issued in July 2000, further described the methods and procedures acceptable to the NRC staff for implementing the requirements of the 1996 revised rule relating to the initial activities and major phases of the decommissioning process. The costs and schedules presented in this analysis follow the general guidance and processes described in the amended regulations. The format and content of the estimates is also consistent with the recommendations of Regulatory Guide 1.202, issued in February 2005.[8]

Decommissioning Scenarios

Two decommissioning scenarios are evaluated for the two nuclear units. The scenarios selected are representative of alternatives available to the owner and are defined as follows:

DECON: The operating licenses for Units 1 and 2 currently expire in November 2024 and August 2025, respectively. The first scenario assumes that decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes. Any residual spent fuel is transferred to the ISFSI to facilitate decontamination and dismantling activities within the fuel handling building. Spent fuel storage operations continue at the site until the transfer of the fuel to the DOE is complete, assumed to be in the year 2051.

SAFSTOR: The units are placed into safe-storage in the second scenario. Spent fuel remaining in the spent fuel storage pools after a minimum cooling period of 12 years is transferred to the ISFSI for interim storage. The length of

7 U.S. Code of Federal Regulations, Title 10, Parts 2, 50, and 51, "Decommissioning of Nuclear Power Reactors," Nuclear Regulatory Commission, Federal Register Volume 61, (p 39278 et seq.), July 29, 1996

8 "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors," Regulatory Guide 1.202, U.S. Nuclear Regulatory Commission, February 2005

SAFSTOR dormancy is established to schedule the beginning of Unit 1 decommissioning activities with the final spent fuel shipment from the ISFSI. As with the DECON scenario, decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes.

Methodology

The methodology used to develop the estimates described within this document follows the basic approach originally presented in the cost estimating guidelines[9] developed by the Atomic Industrial Forum (now Nuclear Energy Institute). This reference describes a unit factor method for determining decommissioning activity costs. The unit factors used in this analysis incorporates site-specific costs and the latest available information on worker productivity in decommissioning.

The estimates also reflect lessons learned from TLG's involvement in the Shippingport Station decommissioning, completed in 1989, and the decommissioning of the Cintichem reactor, hot cells and associated facilities, completed in 1997. In addition, the planning and engineering for the Pathfinder, Shoreham, Rancho Seco, Trojan, Yankee Rowe, Big Rock Point, Maine Yankee, Humboldt Bay-3, Connecticut Yankee and San Onofre-1 nuclear units have provided additional insight into the process, the regulatory aspects, and technical challenges of decommissioning commercial nuclear units.

An activity duration critical path is used to determine the total decommissioning program schedule. The schedule is relied upon in calculating the carrying costs, which include program management, administration, field engineering, equipment rental, and support services, such as quality control and security.

Contingency

Consistent with cost estimating practice, contingencies are applied to the decontamination and dismantling costs developed as "specific provision for unforeseeable elements of cost within the defined project scope, particularly important where previous experience relating estimates and actual costs has shown that unforeseeable events which will increase costs are likely to occur."[10] The cost elements in the estimates are based on ideal conditions; therefore, the types of unforeseeable events that are almost certain to occur in decommissioning, based on industry experience, are addressed through a percentage contingency applied on a

9 T.S. LaGuardia et al., "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986

10 Project and Cost Engineers' Handbook, Second Edition, American Association of Cost Engineers, Marcel Dekker, Inc., New York, New York, p. 239.

line-item basis. This contingency factor is a nearly universal element in all large-scale construction and demolition projects. It should be noted that contingency, as used in this analysis, is based on a preliminary technical position [11] to reflect the California Public Utilities Commission's desire for owners to conservatively establish an appropriate contingency factor for inclusion in the decommissioning revenue requirements.

Contingency funds are expected to be fully expended throughout the program. As such, inclusion of contingency is necessary to provide assurance that sufficient funding will be available to accomplish the intended tasks.

Low-Level Radioactive Waste Disposal

The contaminated and activated material generated in the decontamination and dismantling of a commercial nuclear reactor is classified as low-level (radioactive) waste, although not all of the material is suitable for "shallow-land" disposal. [12] With the passage of the "Low-Level Radioactive Waste Policy Act" in 1980, [13] and its Amendments of 1985, [14] the states became ultimately responsible for the disposition of low-level radioactive waste (LLRW) generated within their own borders.

Until recently, there were two facilities available to PG&E for the disposal of low-level radioactive waste generated by Diablo Canyon. As of July 1, 2008, however, the facility in Barnwell, South Carolina was closed to generators outside the Atlantic Compact (comprised of the states of Connecticut, New Jersey and South Carolina). This leaves the facility in Clive, Utah, operated by EnergySolutions, as the only available destination for low-level radioactive waste requiring controlled disposal.

For the purpose of this analysis, the EnergySolutions' facility is used as the disposal site for the majority of the radioactive waste (Class A). There are no currently operating disposal facilities available to PG&E that have a license to dispose of the more highly radioactive waste (Classes B and C), for example, generated in the dismantling of the reactor vessel. As such, waste disposal costs and waste transportation distances must be estimated. The disposal cost and transportation distance for low-level radioactive waste is based on a study sponsored by PG&E and Southern California Edison Company, "Establishing an Appropriate Disposal Rate for

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11 "Technical Position Paper for Establishing an Appropriate Contingency Factor for Inclusion in the Decommissioning Revenue Requirements", Study Number: DECON-POS-H002, Revision A, Status: Preliminary (provided by PG&E).

12 U.S. Code of Federal Regulations, Title 10, Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste"

13 "Low-Level Radioactive Waste Policy Act of 1980," Public Law 96-573, 1980.

14 "Low-Level Radioactive Waste Policy Amendments Act of 1985," Public Law 99-240, 1986.

Low Level Radioactive Waste During Decommissioning."[15] The study was done to reflect the California Public Utilities Commission's desire for these owners to conservatively estimate their nuclear decommissioning LLRW disposal rates.

The dismantling of the components residing closest to the reactor core generates radioactive waste considered unsuitable for shallow-land disposal (i.e., low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste (GTCC)). The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned the federal government the responsibility for the disposal of this material. The Act also stated that the beneficiaries of the activities resulting in the generation of such radioactive waste bear all reasonable costs of disposing of such waste. However, to date, the federal government has not identified a cost for disposing of GTCC or a schedule for acceptance. As such, the GTCC radioactive waste has been packaged and disposed of as high-level waste, at a cost equivalent to that envisioned for the spent fuel.

For purposes of this study, GTCC is packaged in the same type of canister used for spent fuel. The GTCC material is either stored with the spent fuel at the ISFSI or shipped directly to a DOE facility as it is generated (depending upon the timing of the decommissioning and whether the spent fuel has been removed from the site prior to the start of decommissioning).

A significant portion of the waste material generated during decommissioning may only be potentially contaminated by radioactive materials. This waste can be analyzed on site or shipped off site to licensed facilities for further analysis, for processing and/or for conditioning/recovery. Reduction in the volume of low-level radioactive waste requiring disposal in a licensed low-level radioactive waste disposal facility can be accomplished through a variety of methods, including analyses and surveys or decontamination to eliminate the portion of waste that does not require disposal as radioactive waste, compaction, incineration or metal melt. The estimates for Diablo Canyon reflect the savings from waste recovery/volume reduction.

High-Level Radioactive Waste Management

Congress passed the "Nuclear Waste Policy Act"[16] (NWPA) in 1982, assigning the federal government's long-standing responsibility for disposal of the spent nuclear fuel created by the commercial nuclear generating plants to the DOE. The NWPA provided that DOE would enter into contracts with utilities in which DOE would promise to take the utilities' spent fuel and high-level radioactive waste and utilities would pay

15 "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008 (provided by PG&E).

16 "Nuclear Waste Policy Act of 1982 and Amendments," DOE's Office of Civilian Radioactive Management, 1982

the cost of the disposition services for that material. The NWPA, along with the individual contracts with the utilities, specified that the DOE was to begin accepting spent fuel by January 31, 1998.

Since the original legislation, the DOE has announced several delays in the program schedule. By January 1998, the DOE had failed to accept any spent fuel or high level waste, as required by the NWPA and utility contracts. Delays continue and, as a result, generators have initiated legal action against the DOE in an attempt to obtain compensation for DOE's breach of contract.

Operation of DOE's yet-to-be constructed repository is contingent upon the review and approval of the facility's license application by the NRC and the successful resolution of pending litigation. The DOE submitted its license application to the NRC on June 3, 2008, seeking authorization to construct the repository at Yucca Mountain, Nevada. Assuming a timely review and adequate funding, the DOE expects that receipt of fuel could begin as early as 2020. [17]

It is generally necessary that spent fuel be cooled and stored for a minimum period at the generating site prior to transfer. As such, the NRC requires that licensees establish a program to manage and provide funding for the management of all irradiated fuel at the reactor site until title of the fuel is transferred to the Secretary of Energy, pursuant to 10 CFR Part 50.54(bb).[18] This funding requirement is fulfilled through inclusion of certain cost elements in the decommissioning estimates, for example, associated with the isolation and continued operation of the spent fuel pools and the ISFSI.

The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. For purposes of this analysis, acceptance of commercial spent fuel by the DOE is expected to begin in 2020. The first assemblies removed from the Diablo Canyon site are assumed to be in 2028. With an estimated, maximum rate of transfer of 3,000 metric tons of uranium (MTU)/year, completion of the removal of fuel from the site is projected to be in the year 2051. Consequently, costs are included within the estimates for the long-term caretaking of the spent fuel at the Diablo Canyon site until the year 2051.

An ISFSI, which is independently licensed and operated, will remain operational after the cessation of plant operations. For the DECON and SAFSTOR scenarios, the facility is expanded to accommodate the inventory of spent fuel residing in the plant's storage pools at the conclusion of the required cooling period. Once emptied,

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17 DOE-RW-0604, "Project Decision Schedule", U.s. DOE Offfice of Civilian Radioactive Waste Management, January 2009".

18 U.S. Code of Federal Regulations, Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," Subpart 54 (bb), "Conditions of Licenses."

the spent fuel pool facilities can be either decontaminated and dismantled or prepared for long-term storage.

Site Restoration

The efficient removal of the contaminated materials at the site may result in damage to many of the site structures. Blasting, coring, drilling, and the other decontamination activities will substantially damage power block structures, potentially weakening the footings and structural supports. Prompt dismantling of site structures (once the facilities are decontaminated) is clearly the most appropriate and cost-effective option. It is unreasonable to anticipate that these structures would be repaired and preserved after the radiological contamination is removed. The cost to dismantle site structures with a work force already mobilized on site is more efficient than if the process is deferred. Site facilities quickly degrade without maintenance, adding additional expense and creating potential hazards to the public and the demolition work force. Consequently, this study assumes that site structures are removed to a nominal depth of three feet below the local grade level wherever possible. The site is then to be graded and stabilized.

Summary

The costs to decommission Diablo Canyon assumes the removal of all contaminated and activated plant components and structural materials such that the owner may then have unrestricted use of the site with no further requirements for an operating license. Low-level radioactive waste, other than GTCC waste, is sent to a commercial processor for treatment/conditioning or to a controlled disposal facility.

Decommissioning is accomplished within the 60-year period required by current NRC regulations. In the interim, the spent fuel remains in storage at the site until such time that the transfer to a DOE facility is complete. Once emptied, the storage facilities are also decommissioned.

Both the DECON and SAFSTOR scenarios are described in Section 2. The assumptions are presented in Section 3, along with schedules of annual expenditures. The major cost contributors are identified in Section 6, with detailed activity costs, waste volumes, and associated manpower requirements delineated in Appendices C and D. The major cost components are also identified in the cost summary provided at the end of this section.

The cost elements in the estimates are assigned to one of three subcategories: NRC License Termination, Spent Fuel Management, and Site Restoration. The subcategory "NRC License Termination" is used to accumulate costs that are consistent with "decommissioning" as defined by the NRC in its financial assurance regulations (i.e.,

10 CFR Part 50.75). The cost reported for this subcategory is generally sufficient to terminate the unit's operating license, recognizing that there may be some additional cost impact from spent fuel management.

The "Spent Fuel Management" subcategory contains costs associated with the containerization and transfer of spent fuel from the wet storage pools to a DOE transport cask, as well as the transfer of the fuel in storage at the ISFSI to the DOE. Costs are included for the operation of the storage pools and the management of the ISFSI until such time that the transfer is complete.

"Site Restoration" is used to capture costs associated with the dismantling and demolition of buildings and facilities demonstrated to be free from contamination. This includes structures never exposed to radioactive materials, as well as those facilities that have been decontaminated to appropriate levels. Structures are removed to a depth of three feet and backfilled to conform to local grade.

It should be noted that the costs assigned to these subcategories are allocations. Delegation of cost elements is for the purposes of comparison (e.g., with NRC financial guidelines) or to permit specific financial treatment (e.g., ARO determinations). In reality, there can be considerable interaction between the activities in the three subcategories. For example, an owner may decide to remove non-contaminated structures early in the project to improve access to highly contaminated facilities or plant components. In these instances, the non-contaminated removal costs could be reassigned from Site Restoration to an NRC License Termination support activity. However, in general, the allocations represent a reasonable accounting of those costs that can be expected to be incurred for the specific subcomponents of the total estimated program cost, if executed as described.

As noted within this document, the estimates were developed and costs are presented in 2008 dollars. As such, the estimates do not reflect the escalation of costs (due to inflationary and market forces) over the remaining operating life of the plant or during the decommissioning period.

DECON COST SUMMARY
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Unit 1	Unit 2	Total
Decontamination	18,180	21,089	39,269
Removal	116,996	213,110	330,106
Packaging	18,508	18,570	37,078
Transportation	15,738	15,183	30,920
Waste Disposal	81,180	84,060	165,240
Off-site Waste Processing	48,280	43,016	91,296
Program Management [1]	255,057	450,584	705,641
Spent Fuel Pool Isolation	11,358	7,593	18,951
Spent Fuel Management	145,290	144,151	289,441
Insurance and Regulatory Fees	20,535	18,420	38,955
Energy	11,230	11,137	22,366
Characterization and Licensing Surveys	19,165	20,718	39,883
Property Taxes	3,177	3,090	6,266
Miscellaneous Equipment	6,454	6,478	12,932
Total [2]	771,148	1,057,198	1,828,346

Cost Element			
License Termination	538,104	709,740	1,247,844
Spent Fuel Management	189,088	192,789	381,877
Site Restoration	43,956	154,668	198,624
Total [3]	771,148	1,057,198	1,828,346

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

SAFSTOR COST SUMMARY
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Unit 1	Unit 2	Total
Decontamination	15,031	21,150	36,180
Removal	116,384	213,969	330,353
Packaging	14,704	15,027	29,731
Transportation	14,078	13,709	27,787
Waste Disposal	62,782	65,153	127,935
Off-site Waste Processing	50,229	44,863	95,091
Program Management [1]	250,533	550,768	801,301
Spent Fuel Pool Isolation	11,398	7,627	19,026
Spent Fuel Management	145,031	144,707	289,738
Insurance and Regulatory Fees	27,205	25,122	52,327
Energy	15,758	16,017	31,776
Characterization and Licensing Surveys	20,915	22,518	43,433
Property Taxes	4,126	4,043	8,169
Miscellaneous Equipment	11,738	11,980	23,719
Total [2]	759,912	1,156,654	1,916,567

Cost Element			
License Termination	510,831	555,813	1,066,644
Spent Fuel Management	203,537	448,831	652,368
Site Restoration	45,545	152,010	197,555
Total [2]	759,912	1,156,654	1,916,567

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

1. INTRODUCTION

This report presents estimates of the costs to decommission the Diablo Canyon Power Plant, (Diablo Canyon) following a scheduled cessation of plant operations. The analysis relies upon site-specific, technical information from an earlier evaluation prepared in 2005,[1]* updated to reflect current assumptions pertaining to the disposition of the nuclear plant and relevant industry experience in undertaking such projects. The current estimates are designed to provide Pacific Gas and Electric Company (PG&E) with sufficient information to assess the plant owners' financial obligations, as they pertain to the eventual decommissioning of the nuclear station. It is not a detailed engineering document, but a financial analysis prepared in advance of the detailed engineering that will be required to carry out the decommissioning.

1.1 OBJECTIVES OF STUDY

The objectives of this study are to prepare comprehensive estimates of the costs to decommission Diablo Canyon, to provide a sequence or schedule for the associated activities, and to develop waste stream projections from the decontamination and dismantling activities. For the purposes of this study, the shutdown dates were taken as 40 years after receiving full power-operating licenses, or 2 November 2024 for Unit 1, and 26 August 2025 for Unit 2.

1.2 SITE DESCRIPTION

Diablo Canyon is located on the central California coast in San Luis Obispo County, approximately 12 miles west southwest of the City of San Luis Obispo. The plant, comprised of two nuclear units, is located on a 750-acre site adjacent to the Pacific Ocean, roughly equidistant from San Francisco and Los Angeles.

The Nuclear Steam Supply System (NSSS) consists of a pressurized water reactor and a four-loop Reactor Coolant System. The systems were supplied by the Westinghouse Electric Corporation. Units 1 and 2 each have a current license rating of 3411 MWt, with corresponding estimated ultimate net electrical outputs 1131 and 1156 megawatts (electric), respectively, with the reactors at rated power.

The Reactor Coolant System is comprised of the reactor vessel and four heat transfer loops, each containing a vertical U-tube type steam generator, and a single-stage centrifugal reactor coolant pump. In addition, the system includes

* References provided in Section 7 of the document

an electrically heated pressurizer, a pressurizer relief tank, and interconnected piping. The system is housed within a "containment structure," a seismic Category I reinforced-concrete dry structure. It consists of an upright cylinder topped with a hemispherical dome, supported on a reinforced concrete foundation mat, which is keyed into the bedrock. A welded steel liner plate anchored to the inside face of the containment serves as a leak-tight membrane. The liner on top of the foundation mat is protected by a two-foot thick concrete fill mat, which supports the containment internals and forms the floor of the containment. The lower portion of the containment cylindrical wall has additional embedded wide flange steel beams between elevations 88 ft. 2 in. and 108 ft. 2 in. (mean sea level).

Heat produced in the reactor is converted to electrical energy by the Steam and Power Conversion Systems. A turbine-generator system converts the thermal energy of steam produced in the steam generators into mechanical shaft power and then into electrical energy. The plant's turbine-generators are each tandem compound, four element units. They consist of one high-pressure double-flow and three low-pressure double-flow elements driving a direct-coupled generator at 1800 rpm. The turbines are operated in a closed feedwater cycle that condenses the steam; the heated feedwater is returned to the steam generators. Heat rejected in the main condensers is removed by the Circulating Water System (CWS).

The circulating water system provides the heat sink required for removal of waste heat in the power plant's thermal cycle. The system has the principal function of removing heat by absorbing this energy in the main condenser. Condenser circulating water is water from the Pacific Ocean. Each unit is served by two circulating water pumps at the intake structure. From this structure seawater is pumped through two circulating water conduits to the condenser inlet water boxes. The water is returned to the ocean at Diablo Cove through an outfall at the water's edge.

1.3 REGULATORY GUIDANCE

The Nuclear Regulatory Commission (NRC or Commission) provided initial decommissioning requirements in its rule "General Requirements for Decommissioning Nuclear Facilities," issued in June 1988.[2] This rule set forth financial criteria for decommissioning licensed nuclear power facilities. The regulation addressed decommissioning planning needs, timing, funding methods, and environmental review requirements. The intent of the rule was to ensure that decommissioning would be accomplished in a safe and timely manner and that adequate funds would be available for this purpose. Subsequent to the rule, the NRC issued Regulatory Guide 1.159, "Assuring the

Availability of Funds for Decommissioning Nuclear Reactors,"[3] which provided additional guidance to the licensees of nuclear facilities on the financial methods acceptable to the NRC staff for complying with the requirements of the rule. The regulatory guide addressed the funding requirements and provided guidance on the content and form of the financial assurance mechanisms indicated in the rule.

The rule defined three decommissioning alternatives as being acceptable to the NRC: DECON, SAFSTOR, and ENTOMB. The DECON alternative assumes that any contaminated or activated portion of the plant's systems, structures and facilities are removed or decontaminated to levels that permit the site to be released for unrestricted use shortly after the cessation of plant operations. The rule also placed limits on the time allowed to complete the decommissioning process. For SAFSTOR, the process is restricted in overall duration to 60 years, unless it can be shown that a longer duration is necessary to protect public health and safety. The guidelines for ENTOMB are similar, providing the NRC with both sufficient leverage and flexibility to ensure that these deferred options are only used in situations where it is reasonable and consistent with the definition of decommissioning. At the conclusion of a 60-year dormancy period (or longer for ENTOMB if the NRC approves such a case), the site would still require significant remediation to meet the unrestricted release limits for license termination.

The ENTOMB alternative has not been viewed as a viable option for power reactors due to the significant time required to isolate the long-lived radionuclides for decay to permissible levels. However, with rulemaking permitting the controlled release of a site,[4] the NRC has re-evaluated this alternative. The resulting feasibility study, based upon an assessment by Pacific Northwest National Laboratory, concluded that the method did have conditional merit for some, if not most reactors. However, the staff also found that additional rulemaking would be needed before this option could be treated as a generic alternative. The NRC had considered rulemaking to alter the 60-year time for completing decommissioning and to clarify the use of engineered barriers for reactor entombments.[5] However, the NRC's staff has recommended that rulemaking be deferred, based upon several factors, e.g., no licensee has committed to pursuing the entombment option, the unresolved issues associated with the disposition of greater-than-Class C material (GTCC), and the NRC's current priorities, at least until after the additional research studies are complete. The Commission concurred with the staff's recommendation.

In 1996, the NRC published revisions to the general requirements for decommissioning nuclear power plants.[6] When the decommissioning

regulations were adopted in 1988, it was assumed that the majority of licensees would decommission at the end of the facility's operating licensed life. Since that time, several licensees permanently and prematurely ceased operations. Exemptions from certain operating requirements were required once the reactor was defueled to facilitate the decommissioning. Each case was handled individually, without clearly defined generic requirements. The NRC amended the decommissioning regulations in 1996 to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in the decommissioning process. The amendments allow for greater public participation and better define the transition process from operations to decommissioning.

Under the revised regulations, licensees will submit written certification to the NRC within 30 days after the decision to cease operations. Certification will also be required once the fuel is permanently removed from the reactor vessel. Submittal of these notices will entitle the licensee to a fee reduction and eliminate the obligation to follow certain requirements needed only during operation of the reactor. Within two years of submitting notice of permanent cessation of operations, the licensee is required to submit a Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC. The PSDAR describes the planned decommissioning activities, the associated sequence and schedule, and an estimate of expected costs. Prior to completing decommissioning, the licensee is required to submit an application to the NRC to terminate the license, which will include a license termination plan (LTP).

1.3.1 Nuclear Waste Policy Act

Congress passed the "Nuclear Waste Policy Act"[7] (NWPA) in 1982, assigning the federal government's long-standing responsibility for disposal of the spent nuclear fuel created by the commercial nuclear generating plants to the DOE. The NWPA provided that DOE would enter into contracts with utilities in which DOE would promise to take the utilities' spent fuel and high-level radioactive waste and utilities would pay the cost of the disposition services for that material. The NWPA, along with the individual contracts with the utilities, specified that the DOE was to begin accepting spent fuel by January 31, 1998.

Since the original legislation, the DOE has announced several delays in the program schedule. By January 1998, the DOE had failed to accept any spent fuel or high level waste, as required by the NWPA and utility contracts. Delays continue and, as a result, generators have initiated legal action against the DOE in an attempt to obtain compensation for DOE's breach of contract.

Operation of DOE's yet-to-be constructed repository is contingent upon the review and approval of the facility's license application by the NRC and the successful resolution of pending litigation. The DOE submitted its license application to the NRC on June 3, 2008, seeking authorization to construct the repository at Yucca Mountain, Nevada. Assuming a timely review and adequate funding, the DOE expects that receipt of fuel could begin as early as 2020. [8]

It is generally necessary that spent fuel be actively cooled and stored for a minimum period at the generating site prior to transfer. As such, the NRC requires that licensees establish a program to manage and provide funding for the management of all irradiated fuel at the reactor site until title of the fuel is transferred to the Secretary of Energy, pursuant to 10 CFR Part 50.54(bb). [9] This funding requirement is fulfilled through inclusion of certain cost elements in the decommissioning estimate, for example, associated with the isolation and continued operation of the spent fuel pools and ISFSI.

DOE's contracts with utilities order the acceptance of spent fuel from utilities based upon the oldest fuel receiving the highest priority. For purposes of this analysis, acceptance of commercial spent fuel by the DOE is expected to begin in 2020 (in accordance with DOE's latest published schedule). The first assemblies removed from the Diablo Canyon site are assumed to be in 2028. With an estimated maximum rate of transfer of 3,000 metric tons of uranium (MTU)/year from the commercial generators, completion of the removal of fuel from the Diablo Canyon site is projected to be in the year 2051. Consequently, costs are included within the estimates for the long-term caretaking of the spent fuel at the Diablo Canyon site until the year 2051.

An ISFSI, which is independently licensed and operated, will remain operational after the cessation of plant operations. For the DECON and SAFSTOR scenarios, the facility is expanded to accommodate the inventory of spent fuel residing in the plant's storage pools at the conclusion of the required cooling period. Once emptied, the spent fuel pool facilities can be either decontaminated and dismantled or prepared for long-term storage.

1.3.2 Low-Level Radioactive Waste Acts

The contaminated and activated material generated in the decontamination and dismantling of a commercial nuclear reactor is classified as low-level (radioactive) waste, [10] although not all of the

material is suitable for "shallow-land" disposal. With the passage of the "Low-Level Radioactive Waste Policy Act" in 1980, [11] and its Amendments of 1985, [12] the states became ultimately responsible for the disposition of low-level radioactive waste generated within their own borders.

Until recently, there were two facilities available to PG&E for the disposal of low-level radioactive waste generated by Diablo Canyon. As of July 1, 2008, however, the facility in Barnwell, South Carolina was closed to generators outside the Atlantic Compact (comprised of the states of Connecticut, New Jersey and South Carolina). This leaves the facility in Clive, Utah, operated by EnergySolutions, as the only available destination for low-level radioactive waste requiring controlled disposal.

For the purpose of this analysis, the EnergySolutions' facility is used as the disposal site for the majority of the radioactive waste (Class A). There are no currently operating disposal facilities available to PG&E that have a license to dispose of the more highly radioactive waste (Classes B and C), for example, generated in the dismantling of the reactor vessel. As such, waste disposal costs must be estimated. The disposal cost for low-level radioactive waste is based on a study sponsored by PG&E and Southern California Edison Company, "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning."[13] The study was done to reflect the California Public Utilities Commission's desire for these owners to conservatively estimate their nuclear decommissioning LLRW disposal rates.

The dismantling of the components residing closest to the reactor core generates radioactive waste considered unsuitable for shallow-land disposal (i.e., low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste (GTCC)). The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned the federal government the responsibility for the disposal of this material. The Act also stated that the beneficiaries of the activities resulting in the generation of such radioactive waste bear all reasonable costs of disposing of such waste. However, to date, the federal government has not identified a cost for disposing of GTCC or a schedule for acceptance. As such, the GTCC radioactive waste has been packaged and disposed of as high-level waste, at a cost equivalent to that envisioned for the spent fuel.

For purposes of this study, GTCC is packaged in the same type of canister used for spent fuel. The GTCC material is either stored with the spent fuel or shipped directly to a DOE facility as it is generated (depending upon the timing of the decommissioning and whether the spent fuel has been removed from the site prior to the start of decommissioning).

A significant portion of the waste material generated during decommissioning may only be potentially contaminated by radioactive materials. This waste can be analyzed on site or shipped off site to licensed facilities for further analysis, for processing and/or for conditioning/recovery. Reduction in the volume of low-level radioactive waste requiring disposal in a licensed low-level radioactive waste disposal facility can be accomplished through a variety of methods, including analyses and surveys or decontamination to eliminate the portion of waste that does not require disposal as radioactive waste, compaction, incineration or metal melt. The estimates for Diablo Canyon reflect the savings from waste recovery/volume reduction.

1.3.3 Radiological Criteria for License Termination

In 1997, the NRC published Subpart E, "Radiological Criteria for License Termination," [14] amending 10 CFR Part 20. This subpart provides radiological criteria for releasing a facility for unrestricted use. The regulation states that the site can be released for unrestricted use if radioactivity levels are such that the average member of a critical group would not receive a Total Effective Dose Equivalent (TEDE) in excess of 25 millirem per year, and provided that residual radioactivity has been reduced to levels that are As Low As Reasonably Achievable (ALARA). The decommissioning estimates assume that the Diablo Canyon site will be remediated to a residual level consistent with the NRC-prescribed level.

It should be noted that the NRC and the Environmental Protection Agency (EPA) differ on the amount of residual radioactivity considered acceptable in site remediation. The EPA has two limits that apply to radioactive materials. An EPA limit of 15 millirem per year is derived from criteria established by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). [15] An additional and separate limit of 4 millirem per year, as defined in 40 CFR §141.16, is applied to drinking water. [16]

On October 9, 2002, the NRC signed an agreement with the EPA on the radiological decommissioning and decontamination of NRC-licensed sites. The Memorandum of Understanding (MOU) [17] provides that EPA will defer exercise of authority under CERCLA for the majority of facilities decommissioned under NRC authority. The MOU also includes provisions for NRC and EPA consultation for certain sites when, at the time of license termination, (1) groundwater contamination exceeds EPA-permitted levels; (2) NRC contemplates restricted release of the site; and/or (3) residual radioactive soil concentrations exceed levels defined in the MOU.

The MOU does not impose any new requirements on NRC licensees and should reduce the involvement of the EPA with NRC licensees who are decommissioning. Most sites are expected to meet the NRC criteria for unrestricted use, and the NRC believes that only a few sites will have groundwater or soil contamination in excess of the levels specified in the MOU that trigger consultation with the EPA. However, if there are other hazardous materials on the site, the EPA may be involved in the cleanup. As such, the possibility of dual regulation remains for certain licensees. The present study does not include any costs for this occurrence.

2. DECOMMISSIONING ALTERNATIVES

Detailed cost estimates were developed to decommission the Diablo Canyon nuclear plant for the following approved decommissioning alternatives: DECON and SAFSTOR. Although the alternatives differ with respect to technique, process, cost, and schedule, they attain the same result: the ultimate release of the site for unrestricted use.

Two decommissioning scenarios were evaluated for the two nuclear units. The scenarios selected are representative of alternatives available to the owner and are defined as follows:

DECON: Units 1 and 2 are currently expected to cease operations in November 2024 and August 2025, respectively. Spent fuel remaining in the spent fuel storage pools after a minimum cooling period of 12 years is transferred to the ISFSI for interim storage. This scenario assumes that decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes. Any residual spent fuel is transferred to the ISFSI so as to facilitate decontamination and dismantling activities within the fuel handing building. Spent fuel storage operations continue at the site until the transfer of the fuel to the DOE is complete, assumed to be in the year 2051.

SAFSTOR: The units are placed into safe-storage in this scenario. The start of field decommissioning is deferred to the end of the fuel storage period. Spent fuel remaining in the spent fuel storage pools after a minimum cooling period of 12 years is transferred to the ISFSI for interim storage. As with the DECON scenario, decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes. Spent fuel storage operations continue at the site until the transfer of the fuel to the DOE is complete, assumed to be in the year 2051.

The following sections describe the basic activities associated with each alternative. Although detailed procedures for each activity identified are not provided, and the actual sequence of work may vary, the activity descriptions provide a basis not only for estimating but also for the expected scope of work, i.e., engineering and planning at the time of decommissioning.

The conceptual approach that the NRC has described in its regulations divides decommissioning into three phases. The initial phase commences with the effective date of permanent cessation of operations and involves the transition of both plant and licensee from reactor operations (i.e., power production) to facility de-activation and closure. During the first phase, notification is to be provided to the NRC

certifying the permanent cessation of operations and the removal of fuel from the reactor vessel. The licensee is then prohibited from reactor operation.

The second phase encompasses activities during the storage period or during major decommissioning activities, or a combination of the two. The third phase pertains to the activities involved in license termination. The decommissioning estimates developed for Diablo Canyon are also divided into phases or periods; however, demarcation of the phases is based upon major milestones within the project or significant changes in the projected expenditures.

2.1 DECON

The DECON alternative, as defined by the NRC, is "the alternative in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for unrestricted use shortly after cessation of operations." This study does not address the cost to dispose of the spent fuel residing at the site; such costs are funded through a surcharge on electrical generation. However, the study does estimate the costs incurred with the interim on-site storage of the fuel pending shipment by the DOE to an off-site disposal facility.

2.1.1 Period 1 - Preparations

In anticipation of the cessation of plant operations, detailed preparations are undertaken to provide a smooth transition from plant operations to site decommissioning. Through implementation of a staffing transition plan, the organization required to manage the intended decommissioning activities is assembled from available plant staff and outside resources. Preparations include the planning for permanent defueling of the reactor, revision of technical specifications applicable to the operating conditions and requirements, a characterization of the facility and major components, and the development of the PSDAR.

Engineering and Planning

The PSDAR, required within two years of the notice to cease operations, provides a description of the licensee's planned decommissioning activities, a timetable, and the associated financial requirements of the intended decommissioning program. Upon receipt of the PSDAR, the NRC will make the document available to the public for comment in a local hearing to be held in the vicinity of the reactor site. Ninety days

following submittal and NRC receipt of the PSDAR, the licensee may begin to perform major decommissioning activities under a modified 10 CFR §50.59 procedure, i.e., without specific NRC approval. Major activities are defined as any activity that results in permanent removal of major radioactive components, permanently modifies the structure of the containment, or results in dismantling components (for shipment) containing GTCC, as defined by 10 CFR §61. Major components are further defined as comprising the reactor vessel and internals, large bore reactor coolant system piping, and other large components that are radioactive. The NRC includes the following additional criteria for use of the §50.59 process in decommissioning. The proposed activity must not:

- foreclose release of the site for possible unrestricted use,
- significantly increase decommissioning costs,
- cause any significant environmental impact, or
- violate the terms of the licensee's existing license.

Existing operational technical specifications are reviewed and modified to reflect plant conditions and the safety concerns associated with permanent cessation of operations. The environmental impact associated with the planned decommissioning activities is also considered. Typically, a licensee will not be allowed to proceed if the consequences of a particular decommissioning activity are greater than that bounded by previously evaluated environmental assessments or impact statements. In this instance, the licensee would have to submit a license amendment for the specific activity and update the environmental report.

The decommissioning program outlined in the PSDAR will be designed to accomplish the required tasks within the ALARA guidelines (as defined in 10 CFR §20) for protection of personnel from exposure to radiation hazards. It will also address the continued protection of the health and safety of the public and the environment during the dismantling activity. Consequently, with the development of the PSDAR, activity specifications, cost-benefit and safety analyses, work packages and procedures, would be assembled to support the proposed decontamination and dismantling activities.

Site Preparations

Following final plant shutdown, and in preparation for actual decommissioning activities, the following activities are initiated:

- Characterization of the site and surrounding environs. This includes radiation surveys of work areas, major components (including the reactor vessel and its internals), internal piping, and primary shield cores.
- Isolation of the spent fuel storage pools and fuel handling systems, such that decommissioning operations can commence on the balance of the plant. The pools will remain operational for approximately twelve years following the cessation of operations before the inventory resident at shutdown can be transferred to the DOE.
- Specification of transport and disposal requirements for activated materials and/or hazardous materials, including shielding and waste stabilization.
- Development of procedures for occupational exposure control, control and release of liquid and gaseous effluent, processing of radwaste (including dry-active waste, resins, filter media, metallic and non-metallic components generated in decommissioning), site security and emergency programs, and industrial safety.

2.1.2 Period 2 - Decommissioning Operations

This period includes the wet spent fuel storage and physical decommissioning activities associated with the removal and disposal of contaminated and activated components and structures, including the successful termination of the 10 CFR §50 operating license. Significant decommissioning activities in this phase include:

- Operations, maintenance, and security associated with storing of spent fuel in the spent fuel storage pools.
- Transferring spent fuel from the storage pools to the ISFSI.
- Construction of temporary facilities and/or modification of existing facilities to support dismantling activities. This may include a centralized processing area to facilitate equipment removal and component preparations for off-site disposal.
- Reconfiguration and modification of site structures and facilities as needed to support decommissioning operations. This may include the

upgrading of roads (on- and off-site) to facilitate hauling and transport. Modifications may be required to the containment structure to facilitate access of large/heavy equipment. Modifications may also be required to the refueling area of the building to support the segmentation of the reactor vessel internals and component extraction.

- Design and fabrication of temporary and permanent shielding to support removal and transportation activities, construction of contamination control envelopes, and the procurement of specialty tooling.
- Procurement (lease or purchase) of shipping canisters, cask liners, and industrial packages for the disposition of low-level radioactive waste.
- Decontamination of components and piping systems as required to control (minimize) worker exposure.
- Removal of piping and components no longer essential to support decommissioning operations.
- Removal of control rod drive housings and the head service structure from the reactor vessel head. Segmentation of the vessel closure head.
- Removal and segmentation of the upper internals assemblies. Segmentation will maximize the loading of the shielded transport casks, i.e., by weight and activity. The operations are conducted under water using remotely operated tooling and contamination controls.
- Disassembly and segmentation of the remaining reactor internals, including the core shroud and lower core support assembly. Some material is expected to exceed Class C disposal requirements. As such, the segments will be packaged in modified fuel storage canisters for geologic disposal.
- Segmentation of the reactor vessel. A shielded platform is installed for segmentation as cutting operations are performed in-air using remotely operated equipment within a contamination control envelope. The water level is maintained just below the cut to minimize the working area dose rates. Segments are transferred in-air to containers that are stored under water, for example, in an isolated area of the refueling canal.
- Removal of the activated portions of the concrete biological shield and accessible contaminated concrete surfaces. If dictated by the steam

generator and pressurizer removal scenarios, those portions of the associated cubicles necessary for access and component extraction are removed.

- Removal of the steam generators and pressurizer for material recovery and controlled disposal. The generators will be moved to an on-site processing center, the steam domes removed and the internal components segregated for recycling. The lower shell and tube bundle will be packaged for direct disposal. These components can serve as their own burial containers provided that all penetrations are properly sealed and the internal contaminants are stabilized, e.g., with grout. Steel shielding will be added, as necessary, to those external areas of the package to meet transportation limits and regulations. The pressurizer is disposed of intact.

At least two years prior to the anticipated date of license termination, an LTP is required. Submitted as a supplement to the Final Safety Analysis Report (FSAR) or its equivalent, the plan must include: a site characterization, description of the remaining dismantling activities, plans for site remediation, procedures for the final radiation survey, designation of the end use of the site, an updated cost estimate to complete the decommissioning, and any associated environmental concerns. The NRC will notice the receipt of the plan, make the plan available for public comment, and schedule a local hearing. LTP approval will be subject to any conditions and limitations as deemed appropriate by the Commission. The licensee may then commence with the final remediation of site facilities and services, including:

- Removal of remaining plant systems and associated components as they become nonessential to the decommissioning program or worker health and safety (e.g., waste collection and treatment systems, electrical power and ventilation systems).
- Removal of the steel liners from refueling canal, disposing of the activated and contaminated sections as radioactive waste. Removal of any activated/ contaminated concrete.
- Surveys of the decontaminated areas of the containment structure.
- Remediation and removal of the contaminated equipment and material from the auxiliary building and any other contaminated facility. Radiation and contamination controls will be utilized until residual levels indicate that the structures and equipment can be released for unrestricted access and conventional demolition. This activity may necessitate the dismantling and disposition of most of

the systems and components (both clean and contaminated) located within these buildings. This activity facilitates surface decontamination and subsequent verification surveys required prior to obtaining release for demolition.

- Routing of material removed in the decontamination and dismantling to a central processing area. Material certified to be free of contamination is released for unrestricted disposition, e.g., as scrap, recycle, or general disposal. Contaminated material is characterized and segregated for additional off-site processing (disassembly, chemical cleaning, volume reduction, and waste treatment), and/or packaged for controlled disposal at a low-level radioactive waste disposal facility.

Incorporated into the LTP is the Final Survey Plan. This plan identifies the radiological surveys to be performed once the decontamination activities are completed and is developed using the guidance provided in the "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)."[18] This document incorporates the statistical approaches to survey design and data interpretation used by the EPA. It also identifies state-of-the-art, commercially available instrumentation and procedures for conducting radiological surveys. Use of this guidance ensures that the surveys are conducted in a manner that provides a high degree of confidence that applicable NRC criteria are satisfied. Once the survey is complete, the results are provided to the NRC in a format that can be verified. The NRC then reviews and evaluates the information, performs an independent confirmation of radiological site conditions, and makes a determination on final termination of the license.

The NRC will terminate the operating licenses if it determines that site remediation has been performed in accordance with the LTP, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release.

2.1.3 Period 3 - Site Restoration

Following completion of decommissioning operations, site restoration activities will begin. Efficient removal of the contaminated materials and verification that residual radionuclide concentrations are below the NRC limits will result in substantial damage to many of the structures. Although performed in a controlled, safe manner, blasting, coring, drilling, scarification (surface removal), and the other decontamination activities will substantially degrade power block structures including the reactor and auxiliary buildings. Under certain circumstances,

verifying that subsurface radionuclide concentrations meet NRC site release requirements will require removal of grade slabs and lower floors, potentially weakening footings and structural supports. This removal activity will be necessary for those facilities and plant areas where historical records, when available, indicate the potential for radionuclides having been present in the soil, where system failures have been recorded, or where it is required to confirm that subsurface process and drain lines were not breached over the operating life of the station.

Prompt dismantling of site structures is clearly the most appropriate and cost-effective option. It is unreasonable to anticipate that these structures would be repaired and preserved after the radiological contamination is removed. The cost to dismantle site structures with a work force already mobilized on site is more efficient than if the process were deferred. Site facilities quickly degrade without maintenance, adding additional expense and creating potential hazards to the public as well as to future workers. Abandonment creates a breeding ground for vermin infestation as well as other biological hazards.

This cost study presumes that non-essential structures and site facilities are dismantled as a continuation of the decommissioning activity. Foundations and exterior walls are removed to a nominal depth of three feet below grade. The three-foot depth allows for the placement of gravel for drainage, as well as topsoil, so that vegetation can be established for erosion control. Site areas affected by the dismantling activities are restored and the plant area graded as required to prevent ponding and inhibit the refloating of subsurface materials.

Non-contaminated concrete rubble produced by demolition activities is processed to remove reinforcing steel and miscellaneous embedments. The processed material is then used on site to backfill foundation voids. Excess non-contaminated materials are trucked to an off-site area for disposal as construction debris.

2.1.4 ISFSI Operations and Decommissioning

The ISFSI will continue to operate under a separate and independent license (10 CFR §72) following the termination of the §50 operating licenses. Assuming the DOE starts accepting fuel from the industry in 2020, transfer of spent fuel from Diablo Canyon is anticipated to begin in 2028, and continue through the year 2051.

At the conclusion of the spent fuel transfer process, the ISFSI will be decommissioned. The Commission will terminate the §72 license when it determines that the remediation of the ISFSI has been performed in accordance with an ISFSI license termination plan and that the final radiation survey and associated documentation demonstrate that the facility is suitable for release. Once the requirements are satisfied, the NRC can terminate the license for the ISFSI.

The ISFSI is based upon the currently licensed facility that uses multi-purpose canisters and concrete overpacks for pad storage. For purposes of this cost analysis, it is assumed that once the inner canisters containing the spent fuel assemblies have been removed, any required decontamination performed on the storage overpack (some minor activation is assumed), and the license for the facility terminated, the concrete overpacks can be dismantled using conventional techniques for the demolition of reinforced concrete. The concrete storage pad is then removed and the area regraded.

2.2 SAFSTOR

The NRC defines SAFSTOR as "the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use." The facility is left intact (during the dormancy period), with structures maintained in a sound condition. Systems that are not required to support the spent fuel pools or site surveillance and security are drained, de-energized, and secured. Minimal cleaning/removal of loose contamination and/or fixation and sealing of remaining contamination is performed. Access to contaminated areas is secured to provide controlled access for inspection and maintenance.

The engineering and planning requirements for physical dismantling activities are similar to those for the DECON alternative. Site preparations for physical dismantling are also similar to those for the DECON alternative, with the exception of certain activities, such as spent fuel pool operations and maintenance, and chemical decontamination of primary systems.

Decommissioning operations are assumed to begin once the transfer of the spent fuel to the DOE is completed.

2.2.1 Period 1 - Preparations

Preparations for long-term storage include the planning for permanent defueling of the reactor, revision of technical specifications appropriate to the operating conditions and requirements, a characterization of the facility and major components, and the development of the PSDAR.

The process of placing the plant in safe-storage includes, but is not limited to, the following activities:

- Isolating of the spent fuel storage services and fuel handling systems so that safe-storage operations may commence on the balance of the plant. This activity may be carried out by plant personnel in accordance with existing operating technical specifications. Activities are scheduled around the fuel handling systems to the greatest extent possible.
- Transferring of the spent fuel from the storage pools to the DOE, following the minimum required cooling period in the spent fuel pools.
- Draining and de-energizing of the non-contaminated systems not required to support continued site operations or maintenance.
- Disposing of contaminated filter elements and resin beds not required for processing wastes from layup activities for future operations.
- Draining of the reactor vessel, with the internals left in place and the vessel head secured.
- Draining and de-energizing non-essential, contaminated systems with decontamination as required for future maintenance and inspection.
- Preparing lighting and alarm systems whose continued use is required; de-energizing portions of fire protection, electric power, and HVAC systems whose continued use is not required.
- Cleaning of the loose surface contamination from building access pathways.
- Performing an interim radiation survey of plant, posting warning signs where appropriate.
- Erecting physical barriers and/or securing all access to radioactive or contaminated areas, except as required for inspection and maintenance.

- Installing security and surveillance monitoring equipment and relocating security fence around secured structures, as required.

2.2.2 Period 2 - Dormancy

The second phase identified by the NRC in its rule addresses licensed activities during a storage period and is applicable to the dormancy phases of the deferred decommissioning alternatives. Dormancy activities include a 24-hour security force, preventive and corrective maintenance on security systems, area lighting, general building maintenance, heating and ventilation of buildings, routine radiological inspections of contaminated structures, maintenance of structural integrity, and a site environmental and radiation monitoring program. Resident maintenance personnel perform equipment maintenance, inspection activities, routine services to maintain safe conditions, adequate lighting, heating, and ventilation, and periodic preventive maintenance on essential site services.

An environmental surveillance program is carried out during the dormancy period to ensure that releases of radioactive material to the environment are prevented and/or detected and controlled. Appropriate emergency procedures are established and initiated for potential releases that exceed prescribed limits. The environmental surveillance program constitutes an abbreviated version of the program in effect during normal plant operations.

Security during the dormancy period is conducted primarily to prevent unauthorized entry and to protect the public from the consequences of its own actions. The security fence, sensors, alarms, and other surveillance equipment provide security. Fire and radiation alarms are also monitored and maintained.

Consistent with the DECON scenario, the spent fuel storage pools are emptied within approximately 12 years of the cessation of operations. The transfer of the spent fuel to the DOE continues throughout the dormancy period until completed in 2051. Once emptied, the ISFSI is secured for storage and decommissioned along with the power block structures in Period 4.

After an optional period of storage (such that license termination is accomplished within 60 years of final shutdown), it is required that the licensee submit an application to terminate the license, along with an LTP (described in Section 2.1.2), thereby initiating the third phase.

2.2.3 Periods 3 and 4 - Delayed Decommissioning

Prior to the commencement of decommissioning operations, preparations are undertaken to reactivate site services and prepare for decommissioning. Preparations include engineering and planning, a detailed site characterization, and the assembly of a decommissioning management organization. Final planning for activities and the writing of activity specifications and detailed procedures are also initiated at this time.

Much of the work in developing a termination plan is relevant to the development of the detailed engineering plans and procedures. The activities associated with this phase and the follow-on decontamination and dismantling processes are detailed in Sections 2.1.1 and 2.1.2. The primary difference between the sequences anticipated for the DECON and this deferred scenario is the absence, in the latter, of any constraint on the availability of the fuel storage facilities for decommissioning.

Variations in the length of the dormancy period are expected to have little effect upon the quantities of radioactive wastes generated from system and structure removal operations. Given the levels of radioactivity and spectrum of radionuclides expected from forty years of plant operation, no plant process system identified as being contaminated upon final shutdown will become releasable due to the decay period alone, i.e., there is no significant reduction in the waste generated from the decommissioning activities. However, due to the lower activity levels, a greater percentage of the waste volume can be designated for off-site processing and recovery.

The delay in decommissioning also yields lower working area radiation levels. As such, the estimate for this delayed scenario incorporates reduced ALARA controls for the SAFSTOR's lower occupational exposure potential.

Although the initial radiation levels due to ^{60}Co will decrease during the dormancy period, the internal components of the reactor vessel will still exhibit sufficiently high radiation dose rates to require remote sectioning under water due to the presence of long-lived radionuclides such as ^{94}Nb, ^{59}Ni, and ^{63}Ni. Therefore, the dismantling procedures described for the DECON alternative would still be employed during this scenario. Portions of the biological shield will still be radioactive due to the presence of activated trace elements with long half-lives (^{152}Eu and ^{154}Eu). Decontamination will require controlled removal and

disposal. It is assumed that radioactive corrosion products on inner surfaces of piping and components will not have decayed to levels that will permit unrestricted use or allow conventional removal. These systems and components will be surveyed as they are removed and disposed of in accordance with the existing radioactive release criteria.

2.2.4 Period 5 - Site Restoration

Following completion of decommissioning operations, site-restoration activities can begin. Dismantling, as a continuation of the decommissioning process, is clearly the most appropriate and cost-effective option, as described in Section 2.1.3. The basis for the dismantling cost in this scenario is consistent with that described for DECON, presuming the removal of structures and site facilities to a nominal depth of three feet below grade and the limited restoration of the site.

3. COST ESTIMATE

The cost estimates prepared for decommissioning Diablo Canyon consider the unique features of the site, including the NSSS, power generation systems, support services, site buildings, and ancillary facilities. The basis of the estimates, including the sources of information relied upon, the estimating methodology employed, site-specific considerations, and other pertinent assumptions, is described in this section.

3.1 BASIS OF ESTIMATE

The estimates were developed using the site-specific, technical information from the 2005 analysis. This information was reviewed for the current analysis and updated as deemed appropriate. The site-specific considerations and assumptions used in the previous evaluation were also revisited. Modifications were incorporated where new information was available or experience from ongoing decommissioning programs provided viable alternatives or improved processes.

3.2 METHODOLOGY

The methodology used to develop the estimates follows the basic approach originally presented in the AIF/NESP-036 study report, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates,"[19] and the DOE "Decommissioning Handbook."[20] These documents present a unit factor method for estimating decommissioning activity costs, which simplifies the estimating calculations. Unit factors for concrete removal ($/cubic yard), steel removal ($/ton), and cutting costs ($/inch) are developed using local labor rates. The activity-dependent costs are estimated with the item quantities (cubic yards and tons), developed from plant drawings and inventory documents. Removal rates and material costs for the conventional disposition of components and structures rely upon information available in the industry publication, "Building Construction Cost Data," published by R.S. Means. [21]

The unit factor method provides a demonstrable basis for establishing reliable cost estimates. The detail provided in the unit factors, including activity duration, labor costs (by craft), and equipment and consumable costs, ensures that essential elements have not been omitted. Appendix A presents the detailed development of a typical unit factor. Appendix B provides the values contained within one set of factors developed for this analysis.

This analysis reflects lessons learned from TLG's involvement in the Shippingport Station Decommissioning Project, completed in 1989, as well as the decommissioning of the Cintichem reactor, hot cells, and associated facilities, completed in 1997. In addition, the planning and engineering for the Pathfinder, Shoreham, Rancho Seco, Trojan, Yankee Rowe, Big Rock Point, Maine Yankee, Humboldt Bay-3, Oyster Creek, Connecticut Yankee, and San Onofre-1 nuclear units have provided additional insight into the process, the regulatory aspects, and the technical challenges of decommissioning commercial nuclear units.

Work Difficulty Factors

TLG has historically applied work difficulty adjustment factors (WDFs) to account for the inefficiencies in working in a power plant environment. WDFs are assigned to each unique set of unit factors, commensurate with the inefficiencies associated with working in confined, hazardous environments. The ranges used for the WDFs are as follows:

◦ Access Factor	10% to 20%
◦ Respiratory Protection Factor	10% to 50%
◦ Radiation/ALARA Factor	10% to 37%
◦ Protective Clothing Factor	10% to 30%
◦ Work Break Factor	8.33%

The factors and their associated range of values were developed in conjunction with the AIF/NESP-036 study. The application of the factors is discussed in more detail in that publication.

Scheduling Program Durations

The unit factors, adjusted by the WDFs as described above, are applied against the inventory of materials to be removed in the radiologically controlled areas. The resulting man-hours, or crew-hours, are used in the development of the decommissioning program schedule, using resource loading and event sequencing considerations. The scheduling of conventional removal and dismantling activities is based upon productivity information available from the "Building Construction Cost Data" publication.

An activity duration critical path is used to determine the total decommissioning program schedule. The schedule is relied upon in calculating the carrying costs, which include program management, administration, field

engineering, equipment rental, and support services such as quality control and security. This systematic approach for assembling decommissioning estimates ensures a high degree of confidence in the reliability of the resulting costs.

3.3 IMPACT OF DECOMMISSIONING MULTIPLE REACTOR UNITS

In estimating the near simultaneous decommissioning of two co-located reactor units there can be opportunities to achieve economies of scale, by sharing costs between units, and coordinating the sequence of work activities. There will also be schedule constraints, particularly where there are requirements for specialty equipment and staff, or practical limitations on when final status surveys can take place. For purposes of the estimate, Units 1 and 2 are assumed to be essentially identical. Common facilities have been assigned to Unit 2. A summary of the principal impacts are listed below.

- The sequence of work generally follows the principal that the work is done at Unit 1 first, followed by similar work at Unit 2. This permits the experience gained at Unit 1 to be applied by the workforce at the second unit. It should be noted however, that the estimate does not consider productivity improvements at the second unit, since there is little documented experience with decommissioning two units simultaneously. The work associated with developing activity specifications and procedures can be considered essentially identical between the two units, therefore the second unit costs are assumed to be a fraction of the first unit (~ 43%).
- Segmenting the reactor vessel and internals will require the use of special equipment. The decommissioning project will be scheduled such that Unit 2's reactor internals and vessel are segmented immediately after the activities at Unit 1 have been completed.
- Some program management and support costs, particularly costs associated with the more senior positions, can be avoided with two reactors undergoing decommissioning simultaneously. As a result, the estimate is based on a "lead" unit that includes these senior positions, and a "second" unit that excludes these positions. The designation as lead is based on the unit undertaking the most complex tasks (for instance vessel segmentation) or performing tasks for the first time.
- The final radiological survey schedule is also affected by a two-unit decommissioning schedule. It would be considered impractical to try to complete the final status survey of Unit 1, while Unit 2 still has ongoing radiological remediation work and waste handling in process. As such, the transfer of the spent fuel from the storage pools and subsequent

decontamination of the spent fuel pool areas is coordinated so as to synchronize the final status survey for the station.

- The final demolition of buildings at Units 1 and 2 are considered to take place concurrently. This is considered a reasonable assumption since access to the buildings is considered good at the station.
- Unit 1, as the first unit to enter decommissioning, incurs the majority of site characterization costs.
- Shared systems and common structures are generally assigned to Unit 2.
- Station costs such as emergency response fees, regulatory agency fees, corporate overhead, and insurance are generally allocated on an equal basis between the two units.

3.4 FINANCIAL COMPONENTS OF THE COST MODEL

TLG's proprietary decommissioning cost model, DECCER, produces a number of distinct cost elements. These direct expenditures, however, do not comprise the total cost to accomplish the project goal, i.e., license termination and site restoration.

Inherent in any cost estimate that does not rely on historical data is the inability to specify the precise source of costs imposed by factors such as tool breakage, accidents, illnesses, weather delays, and labor stoppages. In the DECCER cost model, contingency fulfills this role. Contingency is added to each line item to account for costs that are difficult or impossible to develop analytically. Such costs are historically inevitable over the duration of a job of this magnitude; therefore, this cost analysis includes funds to cover these types of expenses.

3.4.1 Contingency

The activity- and period-dependent costs are combined to develop the total decommissioning cost. A contingency is then applied on a line-item basis, using one or more of the contingency types listed in the AIF/NESP-036 study. "Contingencies" are defined in the American Association of Cost Engineers "Project and Cost Engineers' Handbook"[22] as "specific provision for unforeseeable elements of cost within the defined project scope; particularly important where previous experience relating estimates and actual costs has shown that unforeseeable events which will increase costs are likely to occur." The cost elements in this analysis are based upon ideal conditions and maximum efficiency; therefore, consistent with industry practice,

contingency is included. In the AIF/NESP-036 study, the types of unforeseeable events that are likely to occur in decommissioning are discussed and guidelines are provided for percentage contingency in each category. It should be noted that contingency, as used in this analysis, includes contingency based on a preliminary technical position[23] to reflect the California Public Utilities Commission's desire for owners to conservatively establish an appropriate contingency factor for inclusion in the decommissioning revenue requirements.

Contingency Based on AIF Guidelines

As stated in the AIF study contingency funds are an integral part of the total cost to complete the decommissioning process. Exclusion of this component puts at risk a successful completion of the intended tasks and, potentially, subsequent related activities. For this study, TLG examined the major activity-related problems (decontamination, segmentation, equipment handling, packaging, transport, and waste disposal) that necessitate a contingency. Individual activity contingencies ranged from 10% to 75%, depending on the degree of difficulty judged to be appropriate from TLG's actual decommissioning experience. The contingency values used in this study are as follows:

- Decontamination 50%
- Contaminated Component Removal 25%
- Contaminated Component Packaging 10%
- Contaminated Component Transport 15%
- Low-Level Radioactive Waste Disposal 25%

- Reactor Segmentation 75%
- NSSS Component Removal 25%
- Reactor Waste Packaging 25%
- Reactor Waste Transport 25%
- Reactor Vessel Component Disposal 50%
- GTCC Disposal 15%

- Non-Radioactive Component Removal 15%
- Heavy Equipment and Tooling 15%
- Supplies 25%
- Engineering 15%
- Energy 15%

- Characterization and Termination Surveys 30%
- Construction 15%

- Taxes and Fees 10%
- Insurance 10%
- Staffing 15%

The contingency values are applied to the appropriate components of the estimates on a line item basis. The composite contingency value (excluding additional contingency described in the Preliminary Technical Position) for the DECON alternative is approximately 17.9%. The value for the SAFSTOR alternative is approximately 17.5%.

Contingency Based on Preliminary Technical Position

In addition to the contingency based on the AIF guidelines additional contingency was added to reflect the California Public Utilities Commission desire for owners to conservatively establish an appropriate contingency factor for inclusion in the decommissioning revenue requirements. Based on the previously referenced technical position, additional contingency was added to reflect an overall project contingency of 25% (both scenarios). This contingency was incorporated on a line item basis, with each line item receiving a pro-rated share of the increase.

3.4.2 Financial Risk

In addition to the routine uncertainties addressed by contingency, another cost element that is sometimes necessary to consider when bounding decommissioning costs relates to uncertainty, or risk. Examples can include changes in work scope, pricing, job performance, and other variations that could conceivably, but not necessarily, occur. Consideration is sometimes necessary to generate a level of confidence in the estimate, within a range of probabilities. TLG considers these types of costs under the broad term "financial risk." Included within the category of financial risk are:

- Transition activities and costs: ancillary expenses associated with eliminating 50% to 80% of the site labor force shortly after the cessation of plant operations, added cost for worker separation packages throughout the decommissioning program, national or company-mandated retraining, and retention incentives for key personnel.
- Delays in approval of the decommissioning plan due to intervention, public participation in local community meetings, legal challenges, and national and local hearings.

- Changes in the project work scope from the baseline estimate, involving the discovery of unexpected levels of contaminants, contamination in places not previously expected, contaminated soil previously undiscovered (either radioactive or hazardous material contamination), variations in plant inventory or configuration not indicated by the as-built drawings.
- Regulatory changes, for example, affecting worker health and safety, site release criteria, waste transportation, and disposal.
- Policy decisions altering national commitments (e.g., in the ability to accommodate certain waste forms for disposition), or in the timetable for such, for example, the start and rate of acceptance of spent fuel by the DOE.
- Pricing changes for basic inputs such as labor, energy, materials, and disposal. Items subject to widespread price competition (such as materials) may not show significant variation; however, others such as waste disposal could exhibit large pricing uncertainties, particularly in markets where limited access to services is available.

It has been TLG's experience that the results of a risk analysis, when compared with the base case estimate for decommissioning, indicate that the chances of the base decommissioning estimate's being too high is a low probability, and the chances that the estimate is too low is a higher probability. This is mostly due to the pricing uncertainty for low-level radioactive waste burial, and to a lesser extent due to schedule increases from changes in plant conditions and to pricing variations in the cost of labor (both craft and staff). This cost study, however, does not add any additional costs to the estimate for financial risk, since there is insufficient historical data from which to project future liabilities. Consequently, the areas of uncertainty or risk are revisited periodically and addressed through repeated revisions or updates of the base estimates.

3.5 SITE-SPECIFIC CONSIDERATIONS

There are a number of site-specific considerations that affect the method for dismantling and removal of equipment from the site and the degree of restoration required. The cost impact of the considerations identified below is included in this cost study.

3.5.1 Spent Fuel Management

The cost to dispose of spent fuel generated from plant operations is not reflected within the estimates to decommission the Diablo Canyon site. Ultimate disposition of the spent fuel is within the province of the DOE's Waste Management System, as defined by the NWPA. As such, the disposal cost is financed by a 1 mill/kWhr surcharge paid into the DOE's waste fund during operations. However, the NRC requires licensees to establish a program to manage and provide funding for the management of all irradiated fuel at the reactors until title of the fuel is transferred to the Secretary of Energy. This funding requirement is fulfilled through inclusion of certain high-level waste cost elements within the estimate, as described below.

The total inventory of assemblies that will require handling during decommissioning is based upon the following assumptions. The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. For purposes of this analysis, acceptance of commercial spent fuel by the DOE is expected to begin in 2020. The first assemblies removed from the Diablo Canyon site are assumed to be in 2028. With an estimated, maximum rate of transfer of 3,000 metric tons of uranium (MTU)/year, [24] completion of the removal of fuel from the site is projected to be in the year 2051. Consequently, costs are included within the estimates for the long-term caretaking of the spent fuel at the Diablo Canyon site until the year 2051.

The estimates incorporate a minimum cooling period of approximately 12 years for the spent fuel that resides in the storage pools when operations cease. The current Part 72 ISFSI license does not allow dry cask storage of spent fuel with burnups above 45,000 MWD/metric ton. It is assumed that PG&E can amend the Part 72 license to store the higher burnup fuel, but that as a condition of the amendment it will require longer decay times (12 years) before storing the spent fuel in the casks.

In both scenarios that were analyzed, any residual fuel remaining in the pool after the 12-year period is relocated to the ISFSI to await transfer to a DOE facility. Operation and maintenance costs for the storage facilities are included within the estimates and address the cost for staffing the facilities, as well as security, insurance, and licensing fees. The estimates include the costs to purchase, load, and transfer the fuel storage canisters. Costs are also provided for the final disposition of the facilities once the transfer is complete.

Canister Design

A multi-purpose storage canister (HOLTEC HI-STORM 100 system), with a 32-fuel assemblies capacity, is assumed for future cask acquisitions. A unit cost of approximately $1,000,000 is used for pricing the internal multi-purpose canister (MPC) and concrete overpack. The DOE is assumed to provide the MPC for fuel transferred directly from the pools to the DOE at no cost to the owner.

Canister Loading and Transfer

An average cost of approximately $220,000 per canister is used for the labor and consumables to load/transport the spent fuel from the pools to the ISFSI pad, based upon Diablo Canyon operating experience. An average cost of approximately $200,000 per canister is used to estimate the cost to transfer the fuel from the spent fuel pools to the DOE. For estimating purposes, 50% of the pool to DOE cost is used to estimate the cost to transfer the fuel from the ISFSI to the DOE.

Operations and Maintenance

Annual costs (excluding labor) of approximately $1,500,000 and $430,000 are used for operation and maintenance of the spent fuel pools and the ISFSI, respectively.

ISFSI Decommissioning Design Considerations

A HI-STORM multi-purpose (storage and transport) dry shielded storage canister with a vertical, reinforced concrete storage overpack is used as a basis for the cost analyses. Approximately 50% of the overpacks are assumed to have some level of neutron-induced activation as a result of the long-term storage of the fuel, i.e., to levels exceeding free-release limits. Approximately 10% of the concrete and steel is assumed to be removed from the overpacks for controlled disposal. The cost to dispose of this material, as well as the demolition of the ISFSI facility, is included in the estimates.

GTCC

The dismantling of the reactor internals generates radioactive waste considered unsuitable for shallow land disposal (i.e., low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste (GTCC)).

The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned the federal government the responsibility for the disposal of this material. The Act also stated that the beneficiaries of the activities resulting in the generation of such radioactive waste bear all reasonable costs of disposing of such waste. Although there are strong arguments that GTCC waste is covered by the spent fuel contact with DOE and the fees being paid pursuant to that contract, DOE has taken the position that GTCC waste is not covered by that contract or its fees and that utilities, including PG&E, will have to pay an additional fee for the disposal of their GTCC waste. However, to date, the federal government has not identified a cost for disposing of GTCC or a schedule for acceptance. As such, the GTCC radioactive waste has been packaged and disposed of as high-level waste, at a cost equivalent to that envisioned for the spent fuel.

For purposes of this study, GTCC is packaged in the same type of canister used to store spent fuel. Disposal costs are based upon a cost equivalent to that envisioned for the spent fuel. It is not anticipated that the DOE would accept this waste prior to completing the transfer of spent fuel. Therefore, until such time the DOE is ready to accept GTCC waste, it is reasonable to assume that this material would remain in storage with the spent fuel in the ISFSI at the Diablo Canyon site (for the DECON alternative). In the SAFSTOR scenario, the GTCC material is shipped directly to a DOE facility as it is generated since the fuel has been removed from the site prior to the start of decommissioning and the ISFSI deactivated.

3.5.2 Reactor Vessel and Internal Components

The reactor pressure vessel and internal components are segmented for disposal in shielded, reusable transportation casks. Segmentation is performed in the refueling canal, where a turntable and remote cutter are installed. The vessel is segmented in place, using a mast-mounted cutter supported off the lower head and directed from a shielded work platform installed overhead in the reactor cavity. Transportation cask specifications and transportation regulations dictate the segmentation and packaging methodology.

Intact disposal of reactor vessel shells has been successfully demonstrated at several of the sites currently being decommissioned. Access to navigable waterways has allowed these large packages to be transported to the Barnwell disposal site with minimal overland travel. Intact disposal of the reactor vessel and internal components can

provide savings in cost and worker exposure by eliminating the complex segmentation requirements, isolation of the GTCC material, and transport/storage of the resulting waste packages. Portland General Electric (PGE) was able to dispose of the Trojan reactor as an intact package (including the internals). However, its location on the Columbia River simplified the transportation analysis since:

- the reactor package could be secured to the transport vehicle for the entire journey, i.e., the package was not lifted during transport,
- there were no man-made or natural terrain features between the plant site and the disposal location that could produce a large drop, and
- transport speeds were very low, limited by the overland transport vehicle and the river barge.

As a member of the Northwest Compact, PGE had a site available for disposal of the package - the US Ecology facility in Washington State. The characteristics of this arid site proved favorable in demonstrating compliance with land disposal regulations.

It is not known whether this option will be available when the Diablo Canyon plant ceases operation. Future viability of this option will depend upon the ultimate location of the disposal site, as well as the disposal site licensee's ability to accept highly radioactive packages and effectively isolate them from the environment. Consequently, the study assumes the reactor vessel will require segmentation, as a bounding condition. With lower levels of activation, the vessel shell can be packaged more efficiently than the curie-limited internal components. This will allow the use of more conventional waste packages rather than shielded casks for transport (although some shielded casks are still required).

3.5.3 Primary System Components

In the DECON scenario, the reactor coolant system components are assumed to be decontaminated using chemical agents prior to the start of dismantling operations. This type of decontamination can be expected to have a significant ALARA impact, since in this scenario the removal work is done within the first few years of shutdown. A decontamination factor (average reduction) of 10 is assumed for the process. Disposal of the decontamination solution effluent is included within the estimates

as a "process liquid waste" charge. In the SAFSTOR scenario, radionuclide decay is expected to provide the same benefit and, therefore, a chemical decontamination is not included.

The following discussion deals with the removal and disposition of the steam generators, but the techniques involved are also applicable to other large components, such as heat exchangers, component coolers, and the pressurizer. The steam generators' size and weight, as well as their location within the reactor building, will ultimately determine the removal strategy.

A trolley crane is set up for the removal of the generators. It can also be used to move portions of the steam generator cubicle walls and floor slabs from the reactor building to a location where they can be decontaminated and transported to the material handling area. Interferences within the work area, such as grating, piping, and other components are removed to create sufficient laydown space for processing these large components.

The generators are rigged for removal, disconnected from the surrounding piping and supports, and maneuvered into the open area where they are lowered onto a dolly. Each generator is rotated into the horizontal position for extraction from the containment and placed onto a multi-wheeled vehicle for transport to an on-site processing and storage area.

The generators are disassembled on-site with the steam domes and lightly contaminated subassemblies designated for off-site recycling. The more highly contaminated lower shell and tube bundle are packaged for direct disposal. The interior volume is filled with low-density cellular concrete for stabilization of the internal contamination.

Disposal costs are based upon the displaced volume of the units. Each component is then loaded onto a rail car for transport to the disposal facility.

Reactor coolant piping is cut from the reactor vessel once the water level in the vessel (used for personnel shielding during dismantling and cutting operations in and around the vessel) is dropped below the nozzle zone. The piping is boxed and transported by shielded van. The reactor coolant pumps and motors are lifted out intact, packaged, and transported for processing and/or disposal.

3.5.4 Retired Components

Both Diablo Canyon units are expected to replace their original sets of steam generators prior to final shutdown; these retired sets will be stored on site within a concrete protective structure. The cost for transportation and disposal of these retired sets of steam generators has been included in this analysis.

3.5.5 Main Turbine and Condenser

The main turbine is dismantled using conventional maintenance procedures. The turbine rotors and shafts are removed to a laydown area. The lower turbine casings are removed from their anchors by controlled demolition. The main condensers are also disassembled and moved to a laydown area. Material is then prepared for transportation to an off-site recycling facility where it is surveyed and designated for either decontamination or volume reduction, conventional disposal, or controlled disposal. Components are packaged and readied for transport in accordance with the intended disposition.

3.5.6 Transportation Methods

Contaminated piping, components, and structural material other than the highly activated reactor vessel and internal components will qualify as LSA-I, II or III or Surface Contaminated Object, SCO-I or II, as described in Title 49.[25] The contaminated material will be packaged in Industrial Packages (IP-1, IP-2, or IP-3, as defined in subpart 173.411) for transport unless demonstrated to qualify as their own shipping containers. The reactor vessel and internal components are expected to be transported in accordance with Part 71, as Type B. It is conceivable that the reactor, due to its limited specific activity, could qualify as LSA II or III. However, the high radiation levels on the outer surface would require that additional shielding be incorporated within the packaging so as to attenuate the dose to levels acceptable for transport.

Transport of the highly activated metal, produced in the segmentation of the reactor vessel and internal components, will be by shielded truck cask. Cask shipments may exceed 95,000 pounds, including vessel segment(s), supplementary shielding, cask tie-downs, and tractor-trailer. The maximum level of activity per shipment assumed permissible was based upon the license limits of the available shielded transport casks. The segmentation scheme for the vessel and internal segments is designed to meet these limits.

The transport of large intact components (e.g., large heat exchangers and other oversized components) will be by a combination of truck, rail, and/or multi-wheeled transporter.

Transportation costs for Class A low-level radioactive waste are based upon the mileage to the EnergySolutions facility in Clive, Utah. Transportation costs for Class B and C waste are based upon the mileage to Andrews County, Texas. Transportation costs for off-site waste processing are based upon the mileage to Memphis, Tennessee. Truck transport costs are estimated using published tariffs from Tri-State Motor Transit. [26]

3.5.7 Low-Level Radioactive Waste Disposal

To the greatest extent practical, metallic material generated in the decontamination and dismantling processes is processed to reduce the total cost of controlled disposal. Material meeting the regulatory and/or site release criterion, is released as scrap, requiring no further cost consideration. Conditioning (preparing the material to meet the waste acceptance criteria of the disposal site) and recovery of the waste stream is performed off site at a licensed processing center. Any material leaving the site is subject to a survey and release charge, at a minimum. Based on TLG's experience, rates were assumed for off-site processing as well as survey and release.

The mass of radioactive waste generated during the various decommissioning activities at the site is shown on a line-item basis in the detailed Appendices C and D, and summarized in Section 5. The quantified waste summaries shown in these tables are consistent with 10 CFR Part 61 classifications. Commercially available steel containers are presumed to be used for the disposal of piping, small components, and concrete. Larger components can serve as their own containers, with proper closure of all openings, access ways, and penetrations. The volumes are calculated based on the exterior package dimensions for containerized material or a specific calculation for components serving as their own waste containers.

The more highly activated reactor components will be shipped in reusable, shielded truck casks with disposable liners. In calculating disposal costs, the burial fees are applied against the liner volume, as well as the special handling requirements of the payload. Packaging efficiencies are lower for the highly activated materials (greater than

Type A quantity waste), where high concentrations of gamma-emitting radionuclides limit the capacity of the shipping canisters.

For the purpose of this analysis, the EnergySolutions' facility is used as the disposal site for the majority of the radioactive waste (Class A). This waste was disposed of at a rate of $62 per cubic foot for "Bulk" waste, and a rate of $252 per cubic foot for "General" waste. These rates include State of Utah taxes and Southwest Compact fees. There are no currently operating disposal facilities available to PG&E that have a license to dispose of the more highly radioactive waste (Classes B and C), for example, generated in the dismantling of the reactor vessel. As such, waste disposal costs were estimated. The cost for disposal for Class B and C waste was $2,916 per cubic foot. This rate includes Southwest Compact fees. These disposal costs for low-level radioactive waste are based on a study sponsored by PG&E and Southern California Edison Company, "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning."[13] The study was done to reflect the California Public Utilities Commission's desire for these owners to conservatively estimate their nuclear decommissioning LLRW disposal rates.

3.5.8 Site Conditions Following Decommissioning

The NRC will terminate (or amend) the site license if it determines that site remediation has been performed in accordance with the license termination plan, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release. The NRC's involvement in the decommissioning process will end at this point. Local building codes and state environmental regulations will dictate the next step in the decommissioning process, as well as the owner's own future plans for the site.

All structures will be removed except for the switchyard. The switchyard is required for grid operations. Structures to be removed include but are not limited to the reactor buildings, auxiliary building, turbine buildings, intake and discharge structures, and steam generator storage facility.

The structures that are expected to require decontamination or radiological remediation are the reactor buildings, auxiliary building, and radwaste storage building.

The estimates presented herein include the dismantling of the major structures to a nominal depth of three feet below grade, backfilling and the collapsing of below grade voids, and general terra-forming such that the site upon which the power block and supplemental structures are located is transformed into a "grassy plain."

The estimate does not assume the remediation of any significant volume of contaminated soil. This assumption may be affected by continued plant operations and/or future regulatory actions, such as the development of site-specific release criteria.

3.6 ASSUMPTIONS

The following are the major assumptions made in the development of the estimates for decommissioning the site.

3.6.1 Estimating Basis

The study follows the principles of ALARA through the use of work duration adjustment factors. These factors address the impact of activities such as radiological protection instruction, mock-up training, and the use of respiratory protection and protective clothing. The factors lengthen a task's duration, increasing costs and lengthening the overall schedule. ALARA planning is considered in the costs for engineering and planning, and in the development of activity specifications and detailed procedures. Changes to worker exposure limits may impact the decommissioning cost and project schedule.

3.6.2 Labor Costs

The craft labor required to decontaminate and dismantle the nuclear plant is acquired through standard site contracting practices. The current cost of labor at the site is used as an estimating basis.

The owner will provide radiological health and safety, quality assurance and overall site administration during the decommissioning and demolition phases. Contract personnel will provide engineering services, e.g., for preparing the activity specifications, work procedures, activation, and structural analyses, under the direction of PG&E.

Personnel costs are based upon average salary information provided by PG&E. Overhead costs are included for site and corporate support, reduced commensurate with the staffing of the project.

Security, while reduced from operating levels, is maintained throughout the decommissioning for access control, material control, and to safeguard the spent fuel.

3.6.3 Design Conditions

Any fuel cladding failure that occurred during the lifetime of the plant is assumed to have released fission products at sufficiently low levels that the buildup of quantities of long-lived isotopes (e.g., ^{137}Cs, ^{90}Sr, or transuranics) has been prevented from reaching levels exceeding those that permit the major NSSS components to be shipped under current transportation regulations and disposal requirements.

The curie contents of the vessel and internals at final shutdown are derived from those listed in NUREG/CR-3474.[27] Actual estimates are derived from the curie/gram values contained therein and adjusted for the different mass of the Diablo Canyon components, projected operating life, and different periods of decay. Additional short-lived isotopes were derived from CR-0130[28] and CR-0672,[29] and benchmarked to the long-lived values from CR-3474.

The control elements are disposed of along with the spent fuel, i.e., there is no additional cost provided for their disposal.

Activation of the containment building structure is confined to the biological shield. More extensive activation (at very low levels) of the interior structures within containment has been detected at several reactors and the owners have elected to dispose of the affected material at a controlled facility rather than reuse the material as fill on site or send it to a landfill. The ultimate disposition of the material removed from the containment building will depend upon the site release criteria selected, as well as the designated end use for the site.

3.6.4 General

Transition Activities

Existing warehouses are cleared of non-essential material and remain for use by PG&E and its subcontractors. The plant's operating staff performs the following activities at no additional cost or credit to the project during the transition period:

- Drain and collect fuel oils, lubricating oils, and transformer oils for recycle and/or sale.
- Drain and collect acids, caustics, and other chemical stores for recycle and/or sale.
- Process operating waste inventories, i.e., the estimates do not address the disposition of any legacy wastes; the disposal of operating wastes during this initial period is not considered a decommissioning expense.

Secondary Side Systems

Selected secondary side systems are assumed to be contaminated, and will require radiological controls during dismantling, and off-site waste processing. Systems assumed to be affected include:

- Auxiliary Steam
- Condensate
- Extraction Steam and Heater Drip
- Lube Oil Distribution and Purification
- Turbine Steam Supply
- Turbine and Generator
- Main Condensers
- Main Turbine/Generator

Contaminated Surfaces

Contaminated concrete surfaces in the reactor buildings, fuel handling areas, containment penetration areas, radwaste storage building and auxiliary building will require decontamination by scabbling (removal of concrete surfaces to a depth of one-half inch), or a drill and spall technique (removal of concrete surfaces to a depth of two inches).

Electrical Switchyard

The existing electrical switchyard will remain after decommissioning in support of the utility's electrical transmission and distribution system.

Scrap and Salvage

The existing plant equipment is considered obsolete and suitable for scrap as deadweight quantities only. PG&E will make economically

reasonable efforts to salvage equipment following final plant shutdown. However, dismantling techniques assumed by TLG for equipment in this analysis are not consistent with removal techniques required for salvage (resale) of equipment. Experience has indicated that some buyers wanted equipment stripped down to very specific requirements before they would consider purchase. This required expensive rework after the equipment had been removed from its installed location. Since placing a salvage value on this machinery and equipment would be speculative, and the value would be small in comparison to the overall decommissioning expenses, this analysis does not attempt to quantify the value that an owner may realize based upon those efforts.

It is assumed, for purposes of this analysis, that any value received from the sale of scrap generated in the dismantling process would be more than offset by the on-site processing costs. The dismantling techniques assumed in the decommissioning estimates do not include the additional cost for size reduction and preparation to meet "furnace ready" conditions. For example, the recovery of copper from electrical cabling may require the removal and disposition of any contaminated insulation, an added expense. With a volatile market, the potential profit margin in scrap recovery is highly speculative, regardless of the ability to free release this material. This assumption is an implicit recognition of scrap value in the disposal of clean metallic waste at no additional cost to the project.

Furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, and other property is removed at no cost or credit to the decommissioning project. Disposition may include relocation to other facilities. Spare parts are also made available for alternative use.

Energy

For estimating purposes, the plant is assumed to be de-energized, with the exception of those facilities associated with spent fuel storage. Replacement power costs are used to calculate the cost of energy consumed during decommissioning for tooling, lighting, ventilation, and essential services.

Insurance

Costs for continuing coverage (nuclear liability and property insurance) following cessation of plant operations and during decommissioning are included and based upon current operating premiums. Reductions in

premiums, throughout the decommissioning process, are based upon the guidance and the limits for coverage defined in the NRC's proposed rulemaking "Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors."[30] The NRC's financial protection requirements are based on various reactor (and spent fuel) configurations.

Taxes

Property taxes are included for all decommissioning periods.

Site Modifications

The perimeter fence and in-plant security barriers will be moved, as appropriate, to conform to the Site Security Plan in force during the various stages of the project.

3.7 COST ESTIMATE SUMMARY

Schedules of expenditures are provided in Tables 3.1 and 3.2. The tables delineate the cost contributors by year of expenditures as well as cost contributor (e.g., labor, materials, and waste disposal).

Additional tables in Appendices C and D provide detailed costs elements. The cost elements are also assigned to one of three subcategories: "License Termination," "Spent Fuel Management," and "Site Restoration." The subcategory "License Termination" is used to accumulate costs that are consistent with "decommissioning" as defined by the NRC in its financial assurance regulations (i.e., 10 CFR §50.75). The cost reported for this subcategory is generally sufficient to terminate the plant's operating license, recognizing that there may be some additional cost impact from spent fuel management.

The "Spent Fuel Management" subcategory contains costs associated with the containerization and transfer of spent fuel from the pools to the DOE and the transfer of casks from the ISFSI to the DOE. Costs are also included for the operations of the pools and management of the ISFSI until such time that the transfer of all fuel from this facility to an off-site location (e.g., geologic repository) is complete.

"Site Restoration" is used to capture costs associated with the dismantling and demolition of buildings and facilities demonstrated to be free from contamination. This includes structures never exposed to radioactive

materials, as well as those facilities that have been decontaminated to appropriate levels. Structures are removed to a depth of three feet and backfilled to conform to local grade.

As discussed in Section 3.4.1, it is not anticipated that the DOE will accept the GTCC waste prior to completing the transfer of spent fuel. Therefore, the cost of GTCC disposal is shown in the final year of ISFSI operation (for the DECON alternative). While designated for disposal at the geologic repository along with the spent fuel, GTCC waste is still classified as low-level radioactive waste and, as such, included as a "License Termination" expense.

Decommissioning costs are reported in 2008 dollars. Costs are not inflated, escalated, or discounted over the period of expenditure (or projected lifetime of the plant). The schedules are based upon the detailed activity costs reported in Appendices C and D, along with the timeline presented in Section 4.

TABLE 3.1a
DECON ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 1
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2024	5,240	426	2,808	8	3,301	11,783
2025	31,907	4,829	19,265	3,169	21,306	80,477
2026	25,455	19,743	33,361	38,606	20,127	137,292
2027	21,656	20,478	34,008	45,390	15,945	137,476
2028	15,898	9,071	24,740	12,725	10,316	72,750
2029	13,422	7,763	20,678	10,605	10,308	62,776
2030	1,057	1,239	373	8	10,408	13,086
2031	1,057	1,239	373	8	10,408	13,086
2032	1,060	1,243	374	8	10,437	13,122
2033	1,057	1,239	373	8	10,408	13,086
2034	1,057	1,239	373	8	10,408	13,086
2035	1,057	1,239	373	8	10,408	13,086
2036	1,060	1,243	374	8	10,437	13,122
2037	2,560	2,521	4,083	2,289	9,623	21,077
2038	5,485	3,510	22,055	3,466	4,296	38,813
2039	1,101	8,431	9,927	1	2,422	21,882
2040	1,012	8,664	9,559	0	2,393	21,627
2041	603	663	2,866	0	2,235	6,366
2042	569	0	2,312	0	2,222	5,103
2043	569	0	2,312	0	2,222	5,103
2044	570	0	2,319	0	2,228	5,117
2045	569	0	2,312	0	2,222	5,103
2046	569	0	2,312	0	2,222	5,103
2047	569	0	2,312	0	2,222	5,103
2048	570	0	2,319	0	2,228	5,117
2049	569	0	2,312	0	2,222	5,103
2050	569	0	2,312	0	2,222	5,103
2051	569	349	2,315	4	13,014	16,251
2052	220	1,457	1,466	516	1,287	4,945
	137,653	96,587	210,569	116,839	209,499	771,148

TABLE 3.1b
DECON ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 2
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2025	9,011	1,157	7,959	17	6,861	25,005
2026	25,695	7,762	26,170	6,668	19,904	86,198
2027	23,205	21,815	43,514	44,172	16,257	148,963
2028	22,538	19,284	43,905	37,978	14,646	138,350
2029	21,813	10,551	39,706	11,900	12,513	96,482
2030	16,451	7,340	29,024	7,731	11,705	72,250
2031	6,522	1,396	9,246	12	10,208	27,383
2032	6,540	1,400	9,271	12	10,236	27,458
2033	6,522	1,396	9,246	12	10,208	27,383
2034	6,522	1,396	9,246	12	10,208	27,383
2035	6,522	1,396	9,246	12	10,208	27,383
2036	6,540	1,400	9,271	12	10,236	27,458
2037	8,254	2,774	12,749	2,132	9,398	35,307
2038	10,960	4,123	35,182	3,229	4,018	57,511
2039	4,739	32,960	36,726	1	2,424	76,850
2040	4,618	34,005	36,793	0	2,402	77,819
2041	880	2,602	4,956	0	2,240	10,677
2042	571	0	2,319	0	2,227	5,116
2043	571	0	2,319	0	2,227	5,116
2044	572	0	2,325	0	2,233	5,130
2045	571	0	2,319	0	2,227	5,116
2046	571	0	2,319	0	2,227	5,116
2047	571	0	2,319	0	2,227	5,116
2048	572	0	2,325	0	2,233	5,130
2049	571	0	2,319	0	2,227	5,116
2050	571	0	2,319	0	2,227	5,116
2051	570	349	2,322	4	13,050	16,296
2052	220	1,461	1,472	518	1,290	4,962
	193,262	154,566	396,886	114,419	198,066	1,057,198

TABLE 3.2a
SAFSTOR ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 1
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2024	5,259	352	1,131	8	1,443	8,192
2025	30,958	4,209	8,474	326	9,132	53,099
2026	9,269	3,677	3,298	671	24,008	40,923
2027	1,114	1,348	351	31	10,012	12,857
2028	1,118	1,351	352	31	10,039	12,892
2029	1,114	1,348	351	31	10,012	12,857
2030	1,114	1,348	351	31	10,012	12,857
2031	1,114	1,348	351	31	10,012	12,857
2032	1,118	1,351	352	31	10,039	12,892
2033	1,114	1,348	351	31	10,012	12,857
2034	1,114	1,348	351	31	10,012	12,857
2035	1,114	1,348	351	31	10,012	12,857
2036	1,118	1,351	352	31	10,039	12,892
2037	589	295	2	31	2,644	3,561
2038	588	293	1	31	2,624	3,536
2039	588	293	1	31	2,624	3,536
2040	589	293	1	31	2,631	3,545
2041	588	293	1	31	2,624	3,536
2042	588	293	1	31	2,624	3,536
2043	588	293	1	31	2,624	3,536
2044	589	293	1	31	2,631	3,545
2045	588	293	1	31	2,624	3,536
2046	588	293	1	31	2,624	3,536
2047	588	293	1	31	2,624	3,536
2048	589	293	1	31	2,631	3,545
2049	588	293	1	31	2,624	3,536
2050	588	293	1	31	2,624	3,536
2051	1,377	353	869	32	2,616	5,246
2052	19,859	1,950	21,842	44	2,726	46,420
2053	19,369	14,251	35,855	28,584	14,007	112,066
2054	18,116	19,367	33,742	46,649	16,313	134,188
2055	13,128	8,946	24,128	12,817	5,269	64,289
2056	10,885	7,302	19,633	10,431	4,349	52,600

TABLE 3.2a (continued)
SAFSTOR ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 1
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2057	1,474	335	3,053	12	481	5,353
2058	2,900	4,447	17,762	22	1,033	26,164
2059	1,013	8,889	9,674	0	290	19,866
2060	677	5,942	6,467	0	194	13,280
	153,673	97,609	189,456	100,344	218,830	759,912

TABLE 3.2b
SAFSTOR ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 2
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2025	11,261	1,014	5,491	18	4,215	21,999
2026	32,110	7,428	20,954	728	15,858	77,079
2027	10,473	2,042	10,517	336	15,904	39,272
2028	6,569	1,323	9,229	35	9,739	26,895
2029	6,552	1,319	9,204	35	9,712	26,821
2030	6,552	1,319	9,204	35	9,712	26,821
2031	6,552	1,319	9,204	35	9,712	26,821
2032	6,569	1,323	9,229	35	9,739	26,895
2033	6,552	1,319	9,204	35	9,712	26,821
2034	6,552	1,319	9,204	35	9,712	26,821
2035	6,552	1,319	9,204	35	9,712	26,821
2036	6,569	1,323	9,229	35	9,739	26,895
2037	5,824	1,134	8,370	34	8,408	23,770
2038	2,591	308	4,662	32	2,606	10,199
2039	2,591	308	4,662	32	2,606	10,199
2040	2,598	309	4,674	32	2,613	10,227
2041	2,591	308	4,662	32	2,606	10,199
2042	2,591	308	4,662	32	2,606	10,199
2043	2,591	308	4,662	32	2,606	10,199
2044	2,598	309	4,674	32	2,613	10,227
2045	2,591	308	4,662	32	2,606	10,199
2046	2,591	308	4,662	32	2,606	10,199
2047	2,591	308	4,662	32	2,606	10,199
2048	2,598	309	4,674	32	2,613	10,227
2049	2,591	308	4,662	32	2,606	10,199
2050	2,591	308	4,662	32	2,606	10,199
2051	2,508	307	4,470	32	2,536	9,854
2052	2,516	489	1,382	33	1,101	5,520
2053	14,922	2,305	11,448	41	2,785	31,502
2054	18,130	16,601	31,370	33,107	13,418	112,627
2055	19,728	19,645	37,211	41,953	14,797	133,334
2056	18,988	10,267	33,375	10,869	4,704	78,203
2057	17,524	9,174	33,462	9,390	4,226	73,775

TABLE 3.2b (continued)
SAFSTOR ALTERNATIVE
SCHEDULE OF TOTAL ANNUAL EXPENDITURES, UNIT 2
(thousands, 2008 dollars)

Year	PG&E Labor	Equipment & Materials	Contractor Labor	Burial	Other	Total
2058	6,494	14,496	34,206	24	872	56,092
2059	3,370	34,316	33,548	0	296	71,530
2060	2,253	22,940	22,427	0	198	47,817
	258,817	158,049	431,782	97,302	210,703	1,156,654

4. SCHEDULE ESTIMATE

The schedules for the decommissioning scenarios considered in this study follow the sequences presented in the AIF/NESP-036 study, with minor changes to reflect recent experience and site-specific constraints. In addition, the scheduling has been revised to reflect the spent fuel management plan described in Section 3.5.1.

A schedule or sequence of activities for the DECON alternative from shutdown ISFSI site restoration is presented in Figure 4.1. The scheduling sequence is based on the fuel being removed from the spent fuel pools within twelve years. The key activities listed in the schedule do not reflect a one-to-one correspondence with those activities in the cost tables, but reflect dividing some activities for clarity and combining others for convenience. The schedule was prepared using the "Microsoft Project Professional 2003" computer software. [31]

4.1 SCHEDULE ESTIMATE ASSUMPTIONS

The schedule reflects the results of a precedence network developed for the site decommissioning activities, i.e., a PERT (Program Evaluation and Review Technique) Software Package. The work activity durations used in the precedence network reflect the actual man-hour estimates from the cost table, adjusted by stretching certain activities over their slack range and shifting the start and end dates of others. The following assumptions were made in the development of the decommissioning schedule:

- The spent fuel pools are isolated until such time that all spent fuel has been discharged from the spent fuel pools to the DOE. Decontamination and dismantling of the storage pools is initiated once the transfer of spent fuel is complete (DECON option).
- All work (except vessel and internals removal) is performed during an 8-hour workday, 5 days per week, with no overtime. There are eleven paid holidays per year.
- Reactor and internals removal activities are performed by using separate crews for different activities working on different shifts, with a corresponding backshift charge for the second shift.
- Multiple crews work parallel activities to the maximum extent possible, consistent with optimum efficiency, adequate access for cutting, removal and laydown space, and with the stringent safety measures necessary during demolition of heavy components and structures.

- For plant systems removal, the systems with the longest removal durations in areas on the critical path are considered to determine the duration of the activity.

4.2 PROJECT SCHEDULE

The period-dependent costs presented in the detailed cost tables are based upon the durations developed in the schedules for decommissioning. Durations are established between several milestones in each project period; these durations are used to establish a critical path for the entire project. In turn, the critical path duration for each period is used as the basis for determining the period-dependent costs. A second critical path is shown for the spent fuel storage period, which determines the release of the fuel pool areas for final decontamination.

Project timelines are for the DECON and SAFSTOR scenarios are provided in Figures 4.2 and 4.3 with milestone dates based on the 2024 and 2025 shutdown dates for Units 1 and 2, respectively. The fuel pools are emptied approximately twelve years after shutdown, while ISFSI operations continue until the DOE can complete the transfer of assemblies to its geologic repository. Deferred decommissioning in the SAFSTOR scenarios is assumed to commence so that the physical dismantling takes place immediately after all spent fuel has been removed from the site.

FIGURE 4.1
ACTIVITY SCHEDULE

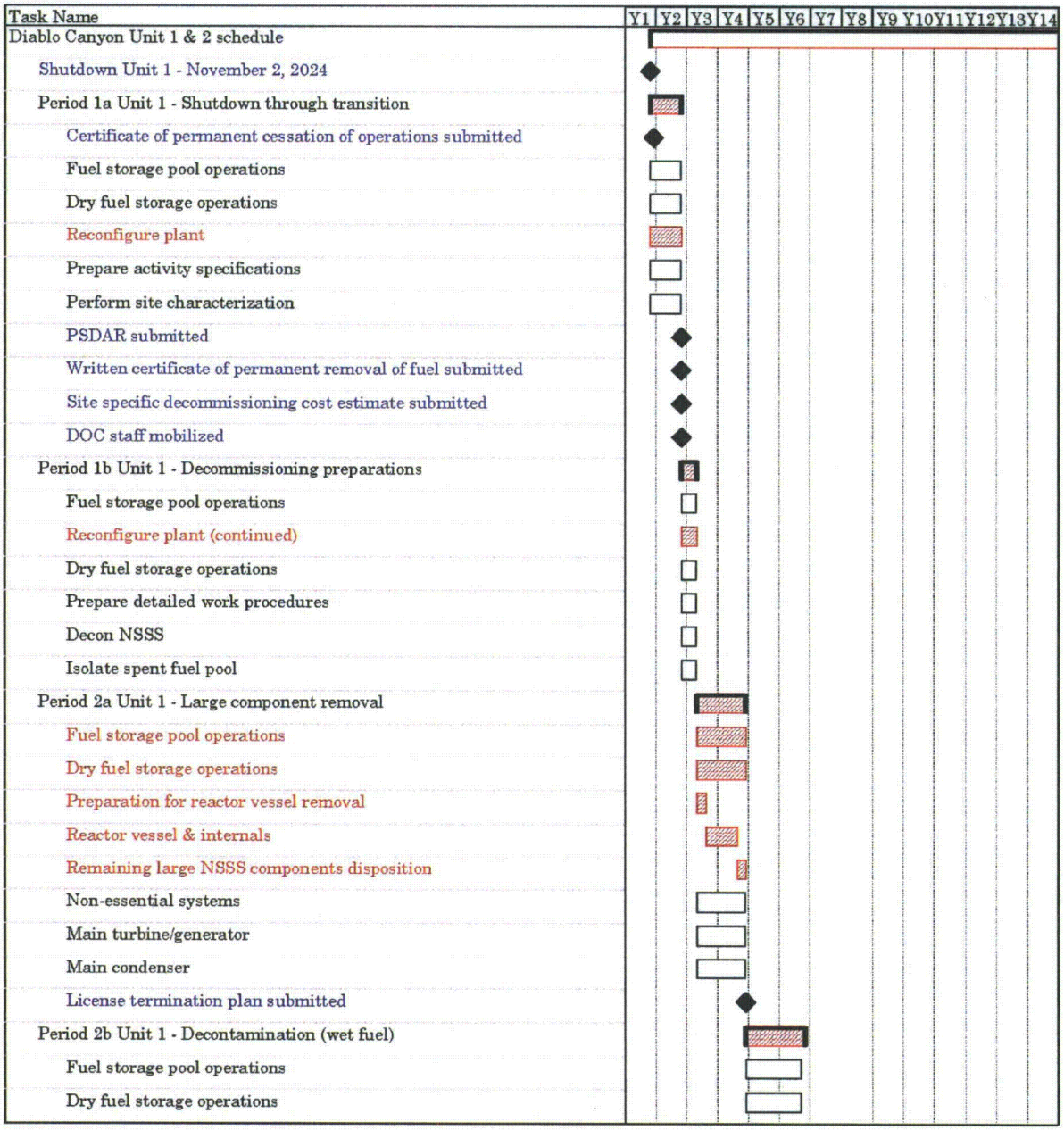


FIGURE 4.1 (continued)
ACTIVITY SCHEDULE

FIGURE 4.1 (continued)
ACTIVITY SCHEDULE

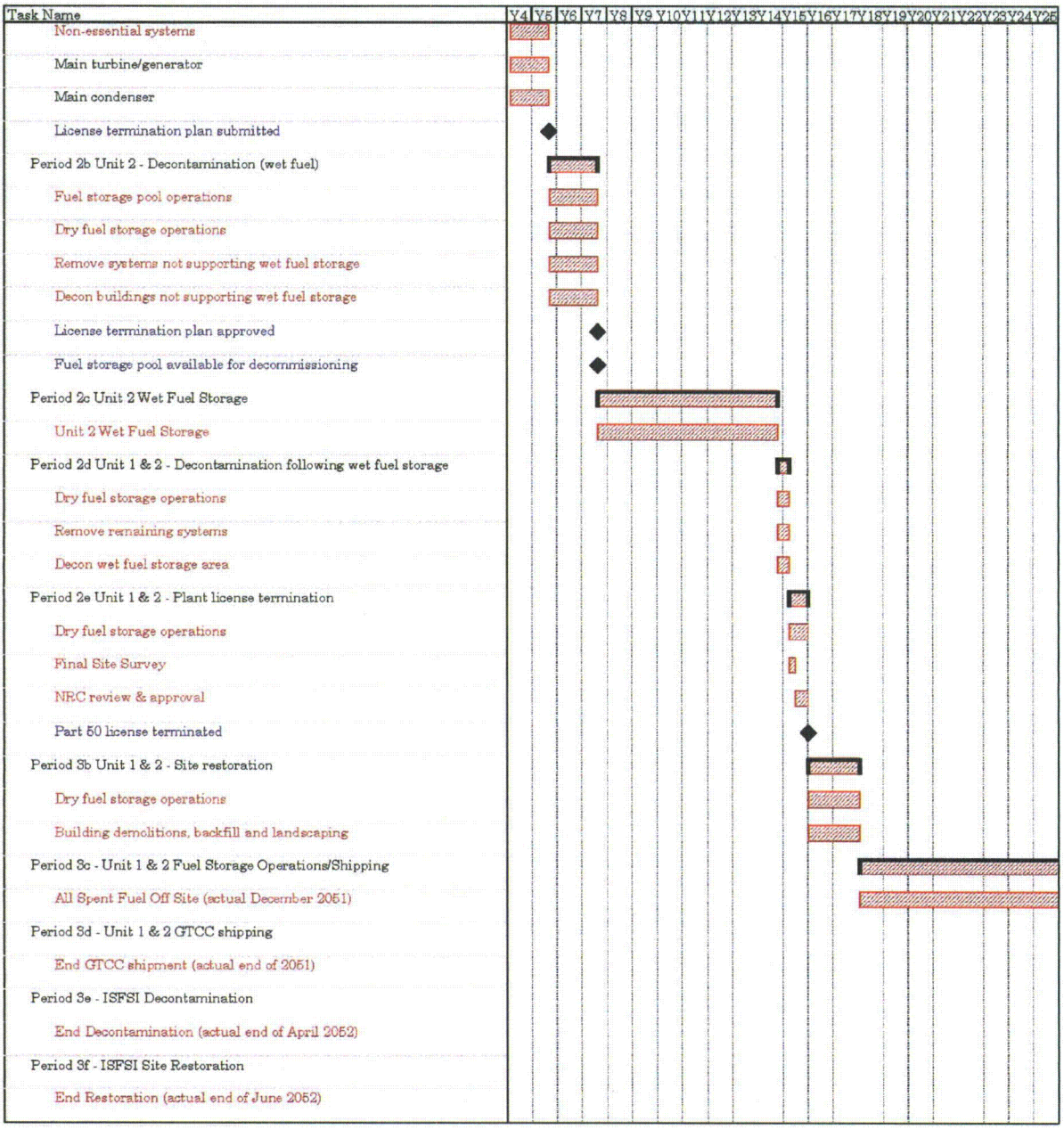


FIGURE 4.1 (continued)
ACTIVITY SCHEDULE
LEGEND

Legend: 1. Red text and/or shaded scheduling bars indicate critical path activities

2. Shaded scheduling bars associated with major decommissioning periods, e.g., Period 1a, indicate overall duration of that period

3. Blue text and/or diamond symbols indicate major milestones

4. Due to limitations within Microsoft PROJECT, dates beyond 2049 can not be printed. Those activities that continue past 2049 have the end date noted in the Task Name.

FIGURE 4.2
DECOMMISSIONING TIMELINE
DECON
(not to scale)

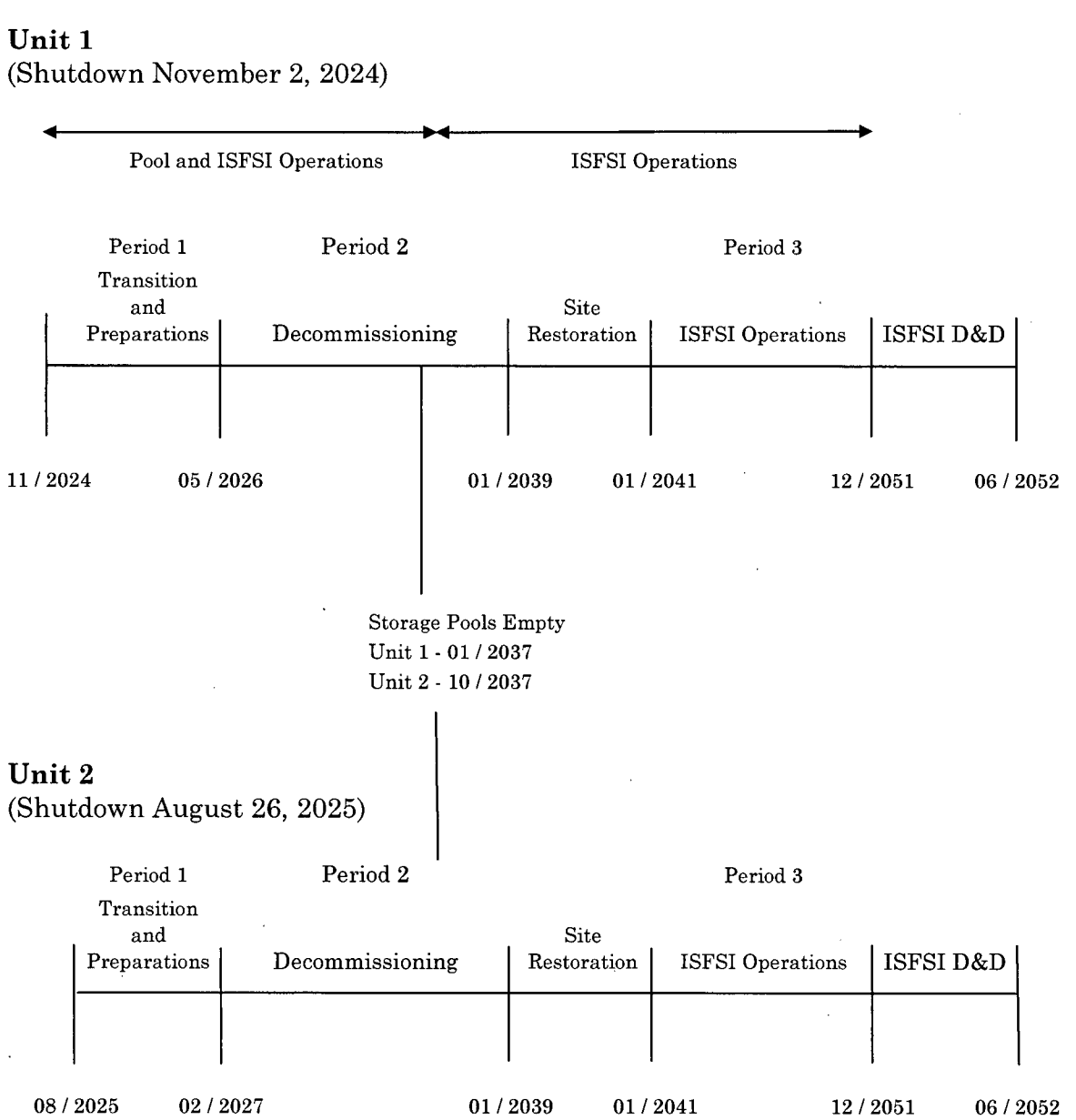
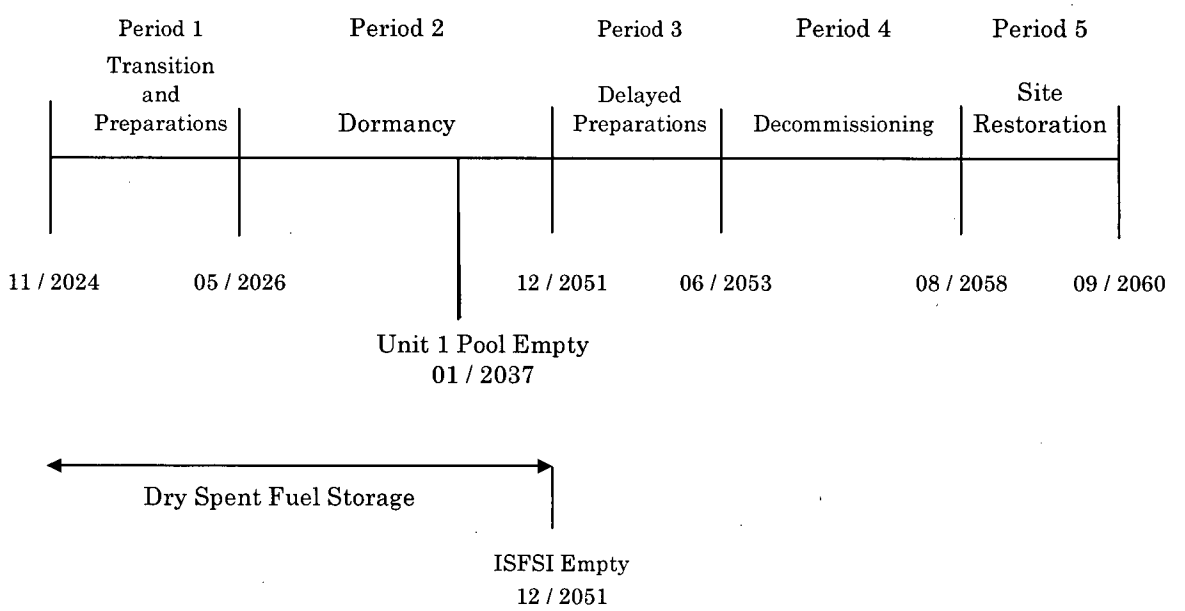
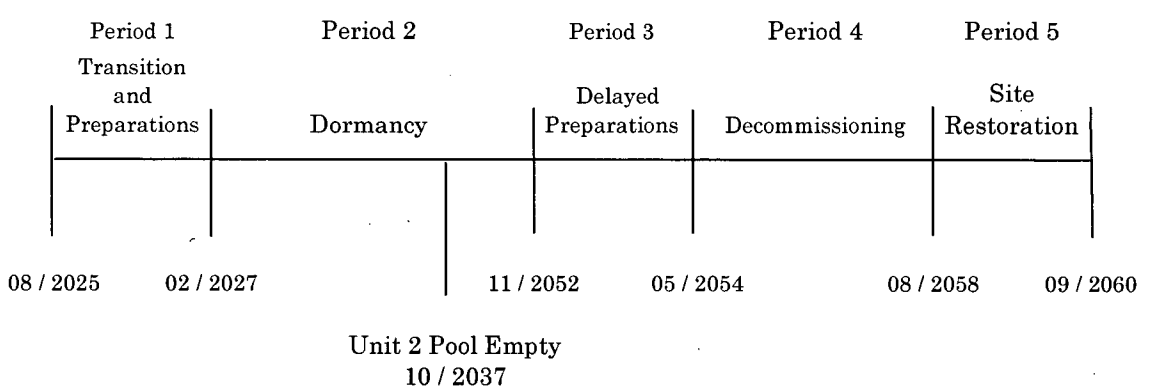


FIGURE 4.3
DECOMMISSIONING TIMELINE
SAFSTOR
(not to scale)

Unit 1
(Shutdown November 2, 2024)



Unit 2
(Shutdown August 26, 2025)



5. RADIOACTIVE WASTES

The objectives of the decommissioning process are the removal of all radioactive material from the site that would restrict its future use and the termination of the NRC license. This currently requires the remediation of all radioactive material at the site in excess of applicable legal limits. Under the Atomic Energy Act,[32] the NRC is responsible for protecting the public from sources of ionizing radiation. Title 10 of the Code of Federal Regulations delineates the production, utilization, and disposal of radioactive materials and processes. In particular, Part 71 defines radioactive material as it pertains to transportation and Part 61 specifies its disposition.

Most of the materials being transported for controlled burial are categorized as Low Specific Activity (LSA) or Surface Contaminated Object (SCO) materials containing Type A quantities, as defined in 49 CFR Parts 173-178. Shipping containers are required to be Industrial Packages (IP-1, IP-2 or IP-3, as defined in 10 CFR §173.411). For this study, commercially available steel containers are presumed to be used for the disposal of piping, small components, and concrete. Larger components can serve as their own containers, with proper closure of all openings, access ways, and penetrations.

The volumes of radioactive waste generated during the various decommissioning activities at the site are shown on a line-item basis in Appendices C and D, and summarized in Tables 5.1 and 5.2. The quantified waste volume summaries shown in these tables are consistent with Part 61 classifications. The volumes are calculated based on the exterior dimensions for containerized material and on the displaced volume of components serving as their own waste containers.

The reactor vessel and internals are categorized as large quantity shipments and, accordingly, will be shipped in reusable, shielded truck casks with disposable liners. In calculating disposal costs, the burial fees are applied against the liner volume, as well as the special handling requirements of the payload. Packaging efficiencies are lower for the highly activated materials (greater than Type A quantity waste), where high concentrations of gamma-emitting radionuclides limit the capacity of the shipping canisters.

No process system containing/handling radioactive substances at shutdown is presumed to meet material release criteria by decay alone (i.e., systems radioactive at shutdown will still be radioactive over the time period during which the decommissioning is accomplished, due to the presence of long-lived radionuclides). While the dose rates decrease with time, radionuclides such as ^{137}Cs will still control the disposition requirements.

The waste material produced in the decontamination and dismantling of the nuclear plants is primarily generated during Period 2 of DECON and Period 4 of SAFSTOR. Material that is considered potentially contaminated when removed from the radiological controlled area is sent to processing facilities in Tennessee for conditioning and disposal. Heavily contaminated components and activated materials are routed for controlled disposal. The disposal volumes reported in the tables reflect the savings resulting from reprocessing and recycling.

For the purpose of this analysis, the EnergySolutions' facility is used as the disposal site for the majority of the radioactive waste (Class A). This waste was disposed of at a rate of $62 per cubic foot for "Bulk" waste, and a rate of $252 per cubic foot for "General" waste. These rates include State of Utah taxes and Southwest Compact fees. There are no currently operating disposal facilities available to PG&E that have a license to dispose of the more highly radioactive waste (Classes B and C), for example, generated in the dismantling of the reactor vessel. As such, waste disposal costs and waste transportation distances were estimated. For purposes of estimating the Class B and C waste transportation cost it was assumed that this waste was shipped to Andrews County, Texas. The cost for disposal for Class B and C waste was $2,916 per cubic foot. This rate includes Southwest Compact fees. These disposal costs for low-level radioactive waste are based on a study sponsored by PG&E and Southern California Edison Company. The study was done to reflect the California Public Utilities Commission's desire for these owners to conservatively estimate their nuclear decommissioning LLRW disposal rates.

TABLE 5.1
UNIT 1 DECON ALTERNATIVE
DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface disposal)	EnergySolutions	A	137,783	12,029,047
	Estimate [2]	B	5,627	684,759
	Estimate [2]	C	574	69,650
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	433	85,510
Total [3]			144,417	12,868,966
Processed/Conditioned (off-site recycling center)	Recycling Vendors	A	402,284	15,636,010
Scrap Metal				95,983,842

[1] Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

[2] Costs for disposal of Class B and C waste was based on the following study: "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008

[3] Columns may not add due to rounding.

TABLE 5.2
UNIT 2 DECON ALTERNATIVE
DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface disposal)	EnergySolutions	A	146,080	12,657,732
	Estimate [2]	B	5,645	686,747
	Estimate [2]	C	574	69,650
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	433	85,510
Total [3]			152,732	13,499,639
Processed/Conditioned (off-site recycling center)	Recycling Vendors	A	358,841	13,879,480
Scrap Metal				153,210,831

[1] Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

[2] Costs for disposal of Class B and C waste was based on the following study: "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008

[3] Columns may not add due to rounding.

TABLE 5.3
UNIT 1 SAFSTOR ALTERNATIVE
DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface disposal)	EnergySolutions	A	130,665	10,701,162
	Estimate [2]	B	2,754	353,167
	Estimate [2]	C	584	68,960
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	433	85,510
Total [3]			134,437	11,208,799
Processed/Conditioned (off-site recycling center)	Recycling Vendors	A	416,013	16,212,920
Scrap Metal				96,120,000

[1] Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

[2] Costs for disposal of Class B and C waste was based on the following study: "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008

[3] Columns may not add due to rounding.

TABLE 5.4
UNIT 2 SAFSTOR ALTERNATIVE
DECOMMISSIONING WASTE SUMMARY

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface disposal)	EnergySolutions	A	137,862	11,224,803
	Estimate [2]	B	2,754	353,167
	Estimate [2]	C	584	68,960
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	433	85,510
Total [3]			141,634	11,732,440
Processed/Conditioned (off-site recycling center)	Recycling Vendors	A	371,549	14,414,930
Scrap Metal				153,348,000

[1] Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55

[2] Costs for disposal of Class B and C waste was based on the following study: "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008

[3] Columns may not add due to rounding.

6. RESULTS

The analysis to estimate the costs to decommission Diablo Canyon relied upon the site-specific, technical information developed for a previous analysis prepared in 2005. While not an engineering study, the estimates provide PG&E with sufficient information to assess their financial obligations, as they pertain to the eventual decommissioning of the nuclear station.

The estimates described in this report are based on numerous fundamental assumptions, including regulatory requirements, project contingencies, low-level radioactive waste disposal practices, high-level radioactive waste management options, and site restoration requirements. The decommissioning scenarios assume continued operation of the station's spent fuel pools for a minimum of twelve years following the cessation of operations for continued cooling of the assemblies.

The cost projected to promptly decommission (DECON) Diablo Canyon is estimated to be $1,828.3 million. The majority of this cost (approximately 68.2%) is associated with the physical decontamination and dismantling of the nuclear plant so that the operating license can be terminated. Another 20.9% is associated with the management, interim storage, and eventual transfer of the spent fuel. The remaining 10.9% is for the demolition of the designated structures and limited restoration of the site.

The cost projected for deferred decommissioning (SAFSTOR) is estimated to be $1,916.6 million. The majority of this cost (approximately 55.7%) is associated with placing the plant in storage, ongoing caretaking of the plant during dormancy, and the eventual physical decontamination and dismantling of the nuclear plant so that the operating license can be terminated. Another 34.0% is associated with the management, interim storage, and eventual transfer of the spent fuel. The remaining 10.3% is for the demolition of the designated structures and limited restoration of the site.

The primary cost contributors, identified in Tables 6.1 thru 6.4, are either labor-related or associated with the management and disposition of the radioactive waste. Program management is the largest single contributor to the overall cost. The magnitude of the expense is a function of both the size of the organization required to manage the decommissioning, as well as the duration of the program. The size and composition of the management organization varies with the decommissioning phase and associated site activities. However, once the operating licenses are terminated, the staff is substantially reduced for the conventional demolition and restoration of the site, and the long-term care of the spent fuel (for the DECON alternative).

As described in this report, the spent fuel pools will remain operational for a minimum of twelve years following the cessation of operations. The pools will be isolated and an independent spent fuel island created. This will allow decommissioning operations to proceed in and around the pool areas. Over the twelve-year period, the spent fuel will be packaged into multi-purpose canisters for transfer to the ISFSI. Spent fuel will also be in storage at the ISFSI (from operations). This inventory will be transferred to the DOE after the pools are emptied.

The cost for waste disposal includes only those costs associated with the controlled disposition of the low-level radioactive waste generated from decontamination and dismantling activities, including plant equipment and components, structural material, filters, resins and dry-active waste. As described in Section 5, disposition of the majority of the low-level radioactive material requiring controlled disposal is at the EnergySolutions' facility. Highly activated components, requiring additional isolation from the environment (GTCC), are packaged for geologic disposal. The cost of geologic disposal is based upon a cost equivalent for spent fuel.

A significant portion of the metallic waste is designated for additional processing and treatment at an off-site facility. Processing reduces the volume of material requiring controlled disposal through such techniques and processes as survey and sorting, decontamination, and volume reduction. The material that cannot be unconditionally released is packaged for controlled disposal at one of the currently operating facilities. The cost identified in the summary tables for processing is all-inclusive, incorporating the ultimate disposition of the material.

Decontamination and removal costs reflect the labor-intensive nature of the decommissioning process, as well as the management controls required to ensure a safe and successful program. Non-radiological demolition is a natural extension of the decommissioning process. The methods employed in decontamination and dismantling are generally destructive and indiscriminate in inflicting collateral damage. With a work force mobilized to support decommissioning operations, non-radiological demolition can be an integrated activity and a logical expansion of the work being performed in the process of terminating the operating license. Prompt demolition reduces future liabilities and can be more cost effective than deferral, due to the deterioration of the facilities (and therefore the working conditions) with time.

The reported cost for transport includes the tariffs and surcharges associated with moving large components and/or overweight shielded casks overland, as well as the general expense, e.g., labor and fuel, of transporting material to the destinations

identified in this report. For purposes of this analysis, material is primarily moved overland by truck.

Decontamination is used to reduce the plant's radiation fields and minimize worker exposure. Slightly contaminated material or material located within a contaminated area is sent to an off-site processing center, i.e., this analysis does not assume that contaminated plant components and equipment can be decontaminated for uncontrolled release in-situ. Centralized processing centers have proven to be a more economical means of handling the large volumes of material produced in the dismantling of a nuclear plant.

License termination survey costs are associated with the labor intensive and complex activity of verifying that contamination has been removed from the site to the levels specified by the regulating agency. This process involves a systematic survey of all remaining plant surface areas and surrounding environs, sampling, isotopic analysis, and documentation of the findings. The status of any plant components and materials not removed in the decommissioning process will also require confirmation and will add to the expense of surveying the facilities alone.

The remaining costs include allocations for heavy equipment and temporary services, as well as for other expenses such as regulatory fees and the premiums for nuclear insurance. While site operating costs are greatly reduced following the final cessation of plant operations, certain administrative functions do need to be maintained either at a basic functional or regulatory level.

TABLE 6.1
UNIT 1 DECON ALTERNATIVE
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Total	Percentage
Decontamination	18,180	2.4
Removal	116,996	15.2
Packaging	18,508	2.4
Transportation	15,738	2.0
Waste Disposal	81,180	10.5
Off-site Waste Processing	48,280	6.3
Program Management [1]	255,057	33.1
Spent Fuel Pool Isolation	11,358	1.5
Spent Fuel Management	145,290	18.8
Insurance and Regulatory Fees	20,535	2.7
Energy	11,230	1.5
Characterization and Licensing Surveys	19,165	2.5
Property Taxes	3,177	0.4
Miscellaneous Equipment	6,454	0.8
Total [2]	771,148	100.0

Cost Element	Total	Percentage
License Termination	538,104	69.8
Spent Fuel Management	189,088	24.5
Site Restoration	43,956	5.7
Total [2]	771,148	100.0

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

TABLE 6.2
UNIT 2 DECON ALTERNATIVE
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Total	Percentage
Decontamination	21,089	2.0
Removal	213,110	20.2
Packaging	18,570	1.8
Transportation	15,183	1.4
Waste Disposal	84,060	8.0
Off-site Waste Processing	43,016	4.1
Program Management [1]	450,584	42.6
Spent Fuel Pool Isolation	7,593	0.7
Spent Fuel Management	144,151	13.6
Insurance and Regulatory Fees	18,420	1.7
Energy	11,137	1.1
Characterization and Licensing Surveys	20,718	2.0
Property Taxes	3,090	0.3
Miscellaneous Equipment	6,478	0.6
Total [2]	1,057,198	100.0

Cost Element	Total	Percentage
License Termination	709,740	67.1
Spent Fuel Management	192,789	18.2
Site Restoration	154,668	14.6
Total [2]	1,057,198	100.0

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

TABLE 6.3
UNIT 1 SAFSTOR ALTERNATIVE
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Total	Percentage
Decontamination	15,031	2.0
Removal	116,384	15.3
Packaging	14,704	1.9
Transportation	14,078	1.9
Waste Disposal	62,782	8.3
Off-site Waste Processing	50,229	6.6
Program Management [1]	250,533	33.0
Spent Fuel Pool Isolation	11,398	1.5
Spent Fuel Management	145,031	19.1
Insurance and Regulatory Fees	27,205	3.6
Energy	15,758	2.1
Characterization and Licensing Surveys	20,915	2.8
Property Taxes	4,126	0.5
Miscellaneous Equipment	11,738	1.5
Total [2]	759,912	100.0

Cost Element	Total	Percentage
License Termination	510,831	67.2
Spent Fuel Management	203,537	26.8
Site Restoration	45,545	6.0
Total [2]	759,912	100.0

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

TABLE 6.4
UNIT 2 SAFSTOR ALTERNATIVE
DECOMMISSIONING COST ELEMENTS
(thousands of 2008 dollars)

Cost Element	Total	Percentage
Decontamination	21,150	1.8
Removal	213,969	18.5
Packaging	15,027	1.3
Transportation	13,709	1.2
Waste Disposal	65,153	5.6
Off-site Waste Processing	44,863	3.9
Program Management [1]	550,768	47.6
Spent Fuel Pool Isolation	7,627	0.7
Spent Fuel Management	144,707	12.5
Insurance and Regulatory Fees	25,122	2.2
Energy	16,017	1.4
Characterization and Licensing Surveys	22,518	1.9
Property Taxes	4,043	0.3
Miscellaneous Equipment	11,980	1.0
Total [2]	1,156,654	100.0

Cost Element	Total	Percentage
NRC License Termination	555,813	48.1
Spent Fuel Management	448,831	38.8
Site Restoration	152,010	13.1
Total [2]	1,156,654	100.0

[1] Includes engineering and security costs
[2] Columns may not add due to rounding

7. REFERENCES

1. "Decommissioning Cost Analysis for the Diablo Canyon Power Plant," Document No. P01-1513-004, Rev. 1, TLG Services, Inc., August 2005

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3. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," October 2003

4. U.S. Code of Federal Regulations, Title 10, Part 20, Subpart E, "Radiological Criteria for License Termination"

5. U.S. Code of Federal Regulations, Title 10, Parts 20 and 50, "Entombment Options for Power Reactors," Advanced Notice of Proposed Rulemaking, Federal Register Volume 66, Number 200, October 16, 2001

6. U.S. Code of Federal Regulations, Title 10, Parts 2, 50 and 51, "Decommissioning of Nuclear Power Reactors," Nuclear Regulatory Commission, Federal Register Volume 61 (p 39278 et seq.), July 29, 1996

7. "Nuclear Waste Policy Act of 1982 and Amendments," U.S. Department of Energy's Office of Civilian Radioactive Waste Management, 1982

8. DOE/RW-0604, "Project Decision Schedule," U.S. Department of Energy's Office of Civilian Radioactive Waste Management, January 2009

9. U.S. Code of Federal Regulations, Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," Subpart 54 (bb), "Conditions of Licenses"

10. U.S. Code of Federal Regulations, Title 10, Part 61.55, "Waste classification"

11. "Low Level Radioactive Waste Policy Act," Public Law 96-573, 1980

12. "Low-Level Radioactive Waste Policy Amendments Act of 1985," Public Law 99-240, 1986

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13. "Establishing an Appropriate Disposal Rate for Low Level Radioactive Waste During Decommissioning", Robert A Snyder NEWEX, Revision 0, July 2008

14. U.S. Code of Federal Regulations, Title 10, Part 20, Subpart E, "Radiological Criteria for License Termination," Federal Register, Volume 62, Number 139 (p 39058 et seq.), July 21, 1997

15. "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination," EPA Memorandum OSWER No. 9200.4-18, August 22, 1997.

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17. "Memorandum of Understanding Between the Environmental Protection Agency and the Nuclear Regulatory Commission: Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites," OSWER 9295.8-06a, October 9, 2002

18. "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," NUREG-1575, Rev. 1, EPA 402-R-97-016, Rev. 1, August 2000

19. T.S. LaGuardia et al., "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986

20. W.J. Manion and T.S. LaGuardia, "Decommissioning Handbook," U.S. Department of Energy, DOE/EV/10128-1, November 1980

21. "Building Construction Cost Data 2008," Robert Snow Means Company, Inc., Kingston, Massachusetts

22. Project and Cost Engineers' Handbook, Second Edition, p. 239, American Association of Cost Engineers, Marcel Dekker, Inc., New York, New York, 1984

7. REFERENCES
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23. "Technical Position Paper for Establishing an Appropriate Contingency Factor for Inclusion in the Decommissioning Revenue Requirements", Study Number: DECON-POS-H002, Revision A, Status: Preliminary (provided by PG&E)

24. DOE/RW-0351, "Civilian Radioactive Waste Management System Waste Acceptance System Requirements Document", Revision 5, May 31, 2007

25. U.S. Department of Transportation, Title 49 of the Code of Federal Regulations, "Transportation," Parts 173 through 178, 2007

26. Tri-State Motor Transit Company, published tariffs, Interstate Commerce Commission (ICC), Docket No. MC-427719 Rules Tariff, March 2004, Radioactive Materials Tariff, January 2008

27. J.C. Evans et al., "Long-Lived Activation Products in Reactor Materials" NUREG/CR-3474, Pacific Northwest Laboratory for the Nuclear Regulatory Commission. August 1984

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APPENDIX A

UNIT COST FACTOR DEVELOPMENT

APPENDIX A
UNIT COST FACTOR DEVELOPMENT

Example: Unit Factor for Removal of Contaminated Heat Exchanger < 3,000 lbs.

1. SCOPE

Heat exchangers weighing < 3,000 lbs. will be removed in one piece using a crane or small hoist. They will be disconnected from the inlet and outlet piping. The heat exchanger will be sent to the waste processing area.

2. CALCULATIONS

Act ID	Activity Description	Activity Duration (minutes)	Critical Duration (minutes)*
a	Remove insulation	60	(b)
b	Mount pipe cutters	60	60
c	Install contamination controls	20	(b)
d	Disconnect inlet and outlet lines	60	60
e	Cap openings	20	(d)
f	Rig for removal	30	30
g	Unbolt from mounts	30	30
h	Remove contamination controls	15	15
i	Remove, wrap, send to waste processing area	60	60
	Totals (Activity/Critical)	355	255

Duration adjustment(s):	
+ Respiratory protection adjustment (50% of critical duration)	128
+ Radiation/ALARA adjustment (37% of critical duration)	95
Adjusted work duration	478
+ Protective clothing adjustment (30% of adjusted duration)	143
Productive work duration	621
+ Work break adjustment (8.33 % of productive duration)	52
Total work duration (minutes)	673

***** Total duration = 11.217 hr *****

* alpha designators indicate activities that can be performed in parallel

APPENDIX A
(continued)

3. LABOR REQUIRED

Crew	Number	Duration (hours)	Rate ($/hr)	Cost
Laborers	3.00	11.217	$48.88	$1,644.86
Craftsmen	2.00	11.217	$59.39	$1,332.36
Foreman	1.00	11.217	$62.93	$705.89
General Foreman	0.25	11.217	$65.78	$184.46
Fire Watch	0.05	11.217	$48.88	$27.41
Health Physics Technician	1.00	11.217	$53.75	$602.91
Total Labor Cost				$4,497.89

4. EQUIPMENT & CONSUMABLES COSTS

Equipment Costs	none
Consumables/Materials Costs	
-Blotting paper 50 @ $0.58 sq ft {1}	$29.00
-Plastic sheets/bags 50 @ $0.18/sq ft {2}	$9.00
-Gas torch consumables 1 @ $10.52/hr x 1 hr {3}	$10.52
Subtotal cost of equipment and materials	$48.52
Overhead & profit on equipment and materials @ 17.25 %	$8.37
Total costs, equipment & material	$56.89

TOTAL COST:

Removal of contaminated **heat exchanger <3000 pounds:**	**$4,554.78**
Total labor cost:	$4,497.89
Total equipment/material costs:	$56.89
Total craft labor man-hours required per unit:	81.88

5. NOTES AND REFERENCES

- Work difficulty factors were developed in conjunction with the Atomic Industrial Forum's (now NEI) program to standardize nuclear decommissioning cost estimates and are delineated in Volume 1, Chapter 5 of the "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986.

- References for equipment & consumables costs:

  1. McMaster-Carr, Item 7193T88, Spill Control
  2. R.S. Means (2008) Division 01 56, Section 13.60-0200, page 20
  3. R.S. Means (2008) Division 01 54 33, Section 40-6360, Reference-10

- Material and consumable costs were adjusted using the regional indices for San Luis Obispo, California.

APPENDIX B

UNIT COST FACTOR LISTING
(DECON: Power Block Structures Only)

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of clean instrument and sampling tubing, $/linear foot	0.53
Removal of clean pipe 0.25 to 2 inches diameter, $/linear foot	5.65
Removal of clean pipe >2 to 4 inches diameter, $/linear foot	7.99
Removal of clean pipe >4 to 8 inches diameter, $/linear foot	15.37
Removal of clean pipe >8 to 14 inches diameter, $/linear foot	29.88
Removal of clean pipe >14 to 20 inches diameter, $/linear foot	38.77
Removal of clean pipe >20 to 36 inches diameter, $/linear foot	57.06
Removal of clean pipe >36 inches diameter, $/linear foot	67.83
Removal of clean valve >2 to 4 inches	102.44
Removal of clean valve >4 to 8 inches	153.66
Removal of clean valve >8 to 14 inches	298.82
Removal of clean valve >14 to 20 inches	387.72
Removal of clean valve >20 to 36 inches	570.65
Removal of clean valve >36 inches	678.35
Removal of clean pipe hanger for small bore piping	33.90
Removal of clean pipe hanger for large bore piping	124.18
Removal of clean pump, <300 pound	257.65
Removal of clean pump, 300-1000 pound	711.04
Removal of clean pump, 1000-10,000 pound	2,828.75
Removal of clean pump, >10,000 pound	5,465.31
Removal of clean pump motor, 300-1000 pound	299.03
Removal of clean pump motor, 1000-10,000 pound	1,177.97
Removal of clean pump motor, >10,000 pound	2,650.42
Removal of clean heat exchanger <3000 pound	1,516.92
Removal of clean heat exchanger >3000 pound	3,810.98
Removal of clean feedwater heater/deaerator	10,757.59
Removal of clean moisture separator/reheater	22,135.40
Removal of clean tank, <300 gallons	331.59
Removal of clean tank, 300-3000 gallon	1,048.60
Removal of clean tank, >3000 gallons, $/square foot surface area	8.70

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of clean electrical equipment, <300 pound	141.13
Removal of clean electrical equipment, 300-1000 pound	486.82
Removal of clean electrical equipment, 1000-10,000 pound	973.67
Removal of clean electrical equipment, >10,000 pound	2,308.13
Removal of clean electrical transformer < 30 tons	1,602.97
Removal of clean electrical transformer > 30 tons	4,616.28
Removal of clean standby diesel generator, <100 kW	1,637.30
Removal of clean standby diesel generator, 100 kW to 1 MW	3,654.56
Removal of clean standby diesel generator, >1 MW	7,565.66
Removal of clean electrical cable tray, $/linear foot	13.16
Removal of clean electrical conduit, $/linear foot	5.74
Removal of clean mechanical equipment, <300 pound	141.13
Removal of clean mechanical equipment, 300-1000 pound	486.82
Removal of clean mechanical equipment, 1000-10,000 pound	973.67
Removal of clean mechanical equipment, >10,000 pound	2,308.13
Removal of clean HVAC equipment, <300 pound	141.13
Removal of clean HVAC equipment, 300-1000 pound	486.82
Removal of clean HVAC equipment, 1000-10,000 pound	973.67
Removal of clean HVAC equipment, >10,000 pound	2,308.13
Removal of clean HVAC ductwork, $/pound	0.56
Removal of contaminated instrument and sampling tubing, $/linear foot	1.64
Removal of contaminated pipe 0.25 to 2 inches diameter, $/linear foot	22.13
Removal of contaminated pipe >2 to 4 inches diameter, $/linear foot	38.42
Removal of contaminated pipe >4 to 8 inches diameter, $/linear foot	60.30
Removal of contaminated pipe >8 to 14 inches diameter, $/linear foot	119.72
Removal of contaminated pipe >14 to 20 inches diameter, $/linear foot	144.08
Removal of contaminated pipe >20 to 36 inches diameter, $/linear foot	200.04
Removal of contaminated pipe >36 inches diameter, $/linear foot	236.75
Removal of contaminated valve >2 to 4 inches	466.22
Removal of contaminated valve >4 to 8 inches	558.77

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of contaminated valve >8 to 14 inches	1,152.68
Removal of contaminated valve >14 to 20 inches	1,466.63
Removal of contaminated valve >20 to 36 inches	1,955.83
Removal of contaminated valve >36 inches	2,322.96
Removal of contaminated pipe hanger for small bore piping	114.31
Removal of contaminated pipe hanger for large bore piping	379.89
Removal of contaminated pump, <300 pound	994.26
Removal of contaminated pump, 300-1000 pound	2,289.60
Removal of contaminated pump, 1000-10,000 pound	7,519.81
Removal of contaminated pump, >10,000 pound	18,316.19
Removal of contaminated pump motor, 300-1000 pound	967.26
Removal of contaminated pump motor, 1000-10,000 pound	3,053.97
Removal of contaminated pump motor, >10,000 pound	6,856.50
Removal of contaminated heat exchanger <3000 pound	4,554.78
Removal of contaminated heat exchanger >3000 pound	13,175.19
Removal of contaminated tank, <300 gallons	1,651.42
Removal of contaminated tank, >300 gallons, $/square foot	32.24
Removal of contaminated electrical equipment, <300 pound	773.83
Removal of contaminated electrical equipment, 300-1000 pound	1,860.19
Removal of contaminated electrical equipment, 1000-10,000 pound	3,581.23
Removal of contaminated electrical equipment, >10,000 pound	6,982.38
Removal of contaminated electrical cable tray, $/linear foot	37.36
Removal of contaminated electrical conduit, $/linear foot	17.17
Removal of contaminated mechanical equipment, <300 pound	861.55
Removal of contaminated mechanical equipment, 300-1000 pound	2,056.73
Removal of contaminated mechanical equipment, 1000-10,000 pound	3,953.19
Removal of contaminated mechanical equipment, >10,000 pound	6,982.38
Removal of contaminated HVAC equipment, <300 pound	861.55
Removal of contaminated HVAC equipment, 300-1000 pound	2,056.73
Removal of contaminated HVAC equipment, 1000-10,000 pound	3,953.19

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of contaminated HVAC equipment, >10,000 pound	6,982.38
Removal of contaminated HVAC ductwork, $/pound	2.29
Removal/plasma arc cut of contaminated thin metal components, $/linear in.	4.11
Additional decontamination of surface by washing, $/square foot	8.60
Additional decontamination of surfaces by hydrolasing, $/square foot	36.12
Decontamination rig hook up and flush, $/ 250 foot length	7,312.90
Chemical flush of components/systems, $/gallon	16.76
Removal of clean standard reinforced concrete, $/cubic yard	145.04
Removal of grade slab concrete, $/cubic yard	193.82
Removal of clean concrete floors, $/cubic yard	379.84
Removal of sections of clean concrete floors, $/cubic yard	1,123.28
Removal of clean heavily rein concrete w/#9 rebar, $/cubic yard	254.39
Removal of contaminated heavily rein concrete w/#9 rebar, $/cubic yard	2,251.67
Removal of clean heavily rein concrete w/#18 rebar, $/cubic yard	321.60
Removal of contaminated heavily rein concrete w/#18 rebar, $/cubic yard	2,980.61
Removal heavily rein concrete w/#18 rebar & steel embedments, $/cubic yard	491.72
Removal of below-grade suspended floors, $/cubic yard	379.84
Removal of clean monolithic concrete structures, $/cubic yard	958.59
Removal of contaminated monolithic concrete structures, $/cubic yard	2,250.19
Removal of clean foundation concrete, $/cubic yard	752.34
Removal of contaminated foundation concrete, $/cubic yard	2,096.28
Explosive demolition of bulk concrete, $/cubic yard	32.43
Removal of clean hollow masonry block wall, $/cubic yard	108.56
Removal of contaminated hollow masonry block wall, $/cubic yard	357.95
Removal of clean solid masonry block wall, $/cubic yard	108.56
Removal of contaminated solid masonry block wall, $/cubic yard	357.95
Backfill of below-grade voids, $/cubic yard	28.42
Removal of subterranean tunnels/voids, $/linear foot	122.09
Placement of concrete for below-grade voids, $/cubic yard	154.57
Excavation of clean material, $/cubic yard	3.06

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Excavation of contaminated material, $/cubic yard	42.67
Removal of clean concrete rubble (tipping fee included), $/cubic yard	24.58
Removal of contaminated concrete rubble, $/cubic yard	26.80
Removal of building by volume, $/cubic foot	0.32
Removal of clean building metal siding, $/square foot	1.27
Removal of contaminated building metal siding, $/square foot	4.40
Removal of standard asphalt roofing, $/square foot	2.47
Removal of transite panels, $/square foot	2.33
Scarifying contaminated concrete surfaces (drill & spall), $/square foot	15.00
Scabbling contaminated concrete floors, $/square foot	8.77
Scabbling contaminated concrete walls, $/square foot	22.75
Scabbling contaminated ceilings, $/square foot	77.64
Scabbling structural steel, $/square foot	7.26
Removal of clean overhead crane/monorail < 10 ton capacity	673.87
Removal of contaminated overhead crane/monorail < 10 ton capacity	1,906.00
Removal of clean overhead crane/monorail >10-50 ton capacity	1,617.31
Removal of contaminated overhead crane/monorail >10-50 ton capacity	4,573.64
Removal of polar crane > 50 ton capacity	6,744.05
Removal of gantry crane > 50 ton capacity	28,851.72
Removal of structural steel, $/pound	0.23
Removal of clean steel floor grating, $/square foot	4.69
Removal of contaminated steel floor grating, $/square foot	13.68
Removal of clean free standing steel liner, $/square foot	13.05
Removal of contaminated free standing steel liner, $/square foot	37.73
Removal of clean concrete-anchored steel liner, $/square foot	6.52
Removal of contaminated concrete-anchored steel liner, $/square foot	43.96
Placement of scaffolding in clean areas, $/square foot	17.73
Placement of scaffolding in contaminated areas, $/square foot	29.17
Landscaping with topsoil, $/acre	26,058.01
Cost of CPC B-88 LSA box & preparation for use	1,931.00

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Cost of CPC B-25 LSA box & preparation for use	1,702.11
Cost of CPC B-12V 12 gauge LSA box & preparation for use	1,666.89
Cost of CPC B-144 LSA box & preparation for use	10,158.75
Cost of LSA drum & preparation for use	161.97
Cost of cask liner for CNSI 8 120A cask (resins)	8,060.01
Decontamination of surfaces with vacuuming, $/square foot	0.75

APPENDIX C

DETAILED COST ANALYSIS

DECON

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1a - Shutdown through Transition																					
Period 1a Direct Decommissioning Activities																					
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	156	32	188	188	-	-	-	-	-	-	-	-	-	1,300
1a.1.2	Notification of Cessation of Operations									a											
1a.1.3	Remove fuel & source material									n/a											
1a.1.4	Notification of Permanent Defueling									a											
1a.1.5	Deactivate plant systems & process waste									a											
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	240	50	289	289	-	-	-	-	-	-	-	-	-	2,000
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	551	114	666	666	-	-	-	-	-	-	-	-	-	4,600
1a.1.8	Perform detailed rad survey									a											
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1a.1.10	End product description	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	156	32	188	188	-	-	-	-	-	-	-	-	-	1,300
1a.1.12	Define major work sequence	-	-	-	-	-	-	899	186	1,086	1,086	-	-	-	-	-	-	-	-	-	7,500
1a.1.13	Perform SER and EA	-	-	-	-	-	-	372	77	449	449	-	-	-	-	-	-	-	-	-	3,100
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	599	124	724	724	-	-	-	-	-	-	-	-	-	5,000
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	491	102	593	593	-	-	-	-	-	-	-	-	-	4,096
1a.1.16	Receive NRC approval of termination plan									a											
Activity Specifications																					
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	590	122	712	641	-	71	-	-	-	-	-	-	-	4,920
1a.1.17.2	Plant systems	-	-	-	-	-	-	500	104	603	543	-	60	-	-	-	-	-	-	-	4,167
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	60	12	72	72	-	-	-	-	-	-	-	-	-	500
1a.1.17.4	Reactor internals	-	-	-	-	-	-	851	176	1,028	1,028	-	-	-	-	-	-	-	-	-	7,100
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	779	162	941	941	-	-	-	-	-	-	-	-	-	6,500
1a.1.17.6	Biological shield	-	-	-	-	-	-	60	12	72	72	-	-	-	-	-	-	-	-	-	500
1a.1.17.7	Steam generators	-	-	-	-	-	-	374	78	452	452	-	-	-	-	-	-	-	-	-	3,120
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	192	40	232	116	-	116	-	-	-	-	-	-	-	1,600
1a.1.17.9	Main Turbine	-	-	-	-	-	-	48	10	58	-	-	58	-	-	-	-	-	-	-	400
1a.1.17.10	Main Condensers	-	-	-	-	-	-	48	10	58	-	-	58	-	-	-	-	-	-	-	400
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	374	78	452	226	-	226	-	-	-	-	-	-	-	3,120
1a.1.17.12	Waste management	-	-	-	-	-	-	551	114	666	666	-	-	-	-	-	-	-	-	-	4,600
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	108	22	130	65	-	65	-	-	-	-	-	-	-	900
1a.1.17	Total	-	-	-	-	-	-	4,535	940	5,475	4,821	-	654	-	-	-	-	-	-	-	37,827
Planning & Site Preparations																					
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	288	60	347	347	-	-	-	-	-	-	-	-	-	2,400
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	560	3,260	3,260	-	-	-	-	-	-	-	-	-	-
1a.1.20	Design water clean-up system	-	-	-	-	-	-	168	35	203	203	-	-	-	-	-	-	-	-	-	1,400
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	435	2,535	2,535	-	-	-	-	-	-	-	-	-	-
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	147	31	178	178	-	-	-	-	-	-	-	-	-	1,230
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	13,642	2,828	16,470	15,816	-	654	-	-	-	-	-	-	-	73,753
Period 1a Additional Costs																					
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	9,407	1,950	11,358	11,358	-	-	-	-	-	-	-	-	-	-
1a.2	Subtotal Period 1a Additional Costs	-	-	-	-	-	-	9,407	1,950	11,358	11,358	-	-	-	-	-	-	-	-	-	-
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	836	173	1,009	-	1,009	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	836	173	1,009	-	1,009	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	1,195	165	1,360	1,360	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	101	14	115	115	-	-	-	-	-	-	-	-	-	-

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1a Period-Dependent Costs (continued)																					
1a.4.3	Health physics supplies	-	486	-	-	-	-	-	168	654	654	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	102	591	591	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	11	4	-	38	-	16	69	69	-	-	-	610	-	-	-	12,190	22	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	276	1,605	1,605	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	159	-	159	-	159	-	-	-	-	-	-	-	-	-
1a.4.8	NRC Fees	-	-	-	-	-	-	706	98	803	803	-	-	-	-	-	-	-	-	-	-
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	174	1,432	-	1,432	-	-	-	-	-	-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	152	887	-	887	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	118	24	142	-	142	-	-	-	-	-	-	-	-	-
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,594	330	1,925	-	1,925	-	-	-	-	-	-	-	-	-
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	239	50	289	-	289	-	-	-	-	-	-	-	-	-
1a.4.14	Security Staff Cost	-	-	-	-	-	-	775	161	936	936	-	-	-	-	-	-	-	-	-	12,264
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	26,403	5,473	31,876	31,876	-	-	-	-	-	-	-	-	-	423,400
1a.4	Subtotal Period 1a Period-Dependent Costs	-	976	11	4	-	38	34,612	7,202	42,843	38,009	4,834	-	-	610	-	-	-	12,190	22	435,664
1a.0	TOTAL PERIOD 1a COST	-	976	11	4	-	38	58,497	12,153	71,680	65,183	5,842	654	-	610	-	-	-	12,190	22	509,417
PERIOD 1b - Decommissioning Preparations																					
Period 1b Direct Decommissioning Activities																					
Detailed Work Procedures																					
1b.1.1.1	Plant systems	-	-	-	-	-	-	567	118	685	617	-	69	-	-	-	-	-	-	-	4,733
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.3	Reactor internals	-	-	-	-	-	-	300	62	362	362	-	-	-	-	-	-	-	-	-	2,500
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	162	34	195	49	-	147	-	-	-	-	-	-	-	1,350
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	435	90	525	525	-	-	-	-	-	-	-	-	-	3,630
1b.1.1.9	Facility closeout	-	-	-	-	-	-	144	30	174	87	-	87	-	-	-	-	-	-	-	1,200
1b.1.1.10	Missile shields	-	-	-	-	-	-	54	11	65	65	-	-	-	-	-	-	-	-	-	450
1b.1.1.11	Biological shield	-	-	-	-	-	-	144	30	174	174	-	-	-	-	-	-	-	-	-	1,200
1b.1.1.12	Steam generators	-	-	-	-	-	-	551	114	666	666	-	-	-	-	-	-	-	-	-	4,600
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	120	25	145	72	-	72	-	-	-	-	-	-	-	1,000
1b.1.1.14	Main Turbine	-	-	-	-	-	-	187	39	226	-	-	226	-	-	-	-	-	-	-	1,560
1b.1.1.15	Main Condensers	-	-	-	-	-	-	187	39	226	-	-	226	-	-	-	-	-	-	-	1,560
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	327	68	395	356	-	40	-	-	-	-	-	-	-	2,730
1b.1.1.17	Reactor building	-	-	-	-	-	-	327	68	395	356	-	40	-	-	-	-	-	-	-	2,730
1b.1.1	Total	-	-	-	-	-	-	3,986	826	4,812	3,907	-	905	-	-	-	-	-	-	-	33,243
1b.1.2	Decon primary loop	1,623	-	-	-	-	-	-	1,122	2,745	2,745	-	-	-	-	-	-	-	-	1,067	-
1b.1	Subtotal Period 1b Activity Costs	1,623	-	-	-	-	-	3,986	1,948	7,557	6,652	-	905	-	-	-	-	-	-	1,067	33,243
Period 1b Additional Costs																					
1b.2.1	Site Characterization	-	-	-	-	-	-	4,549	1,886	6,435	6,435	-	-	-	-	-	-	-	-	25,000	9,412
1b.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	122	713	713	-	-	-	-	-	-	-	-	-	-
1b.2.3	Mixed Waste Management	-	-	-	-	-	-	912	189	1,101	1,101	-	-	-	-	-	-	-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	6,051	2,197	8,248	8,248	-	-	-	-	-	-	-	-	25,000	9,412
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	935	-	-	-	-	-	-	194	1,129	1,129	-	-	-	-	-	-	-	-	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	289	1,684	1,684	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process liquid waste	64	-	188	786	-	6,988	-	2,648	10,674	10,674	-	-	-	400	2,403	-	-	290,742	547	-
1b.3.4	Small tool allowance	-	2	-	-	-	-	-	0	3	3	-	-	-	-	-	-	-	-	-	-

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1b Collateral Costs (continued)																					
1b.3.5	Pipe cutting equipment	-	1,000	-	-	-	-	-	207	1,207	1,207	-	-	-	-	-	-	-	-	-	-
1b.3.6	Decon rig	1,400	-	-	-	-	-	-	290	1,690	1,690	-	-	-	-	-	-	-	-	-	-
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	496	103	599	-	599	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	2,399	1,002	188	786	-	6,988	1,891	3,731	16,986	16,388	599	-	-	400	2,403	-	-	290,742	547	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	28	-	-	-	-	-	-	10	38	38	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	592	82	674	674	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	50	7	57	57	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	272	-	-	-	-	-	94	366	366	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	243	-	-	-	-	-	50	293	293	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	7	2	-	22	-	9	40	40	-	-	-	354	-	-	-	7,084	13	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,319	273	1,592	1,592	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	95	-	95	-	95	-	-	-	-	-	-	-	-	-
1b.4.9	NRC Fees	-	-	-	-	-	-	350	48	398	398	-	-	-	-	-	-	-	-	-	-
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	369	51	420	-	420	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	364	76	440	-	440	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI - Operating Costs	-	-	-	-	-	-	70	14	84	-	84	-	-	-	-	-	-	-	-	-
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,578	327	1,906	-	1,906	-	-	-	-	-	-	-	-	-
1b.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	142	29	172	-	172	-	-	-	-	-	-	-	-	-
1b.4.15	Security Staff Cost	-	-	-	-	-	-	385	80	464	464	-	-	-	-	-	-	-	-	-	6,082
1b.4.16	DOC Staff Cost	-	-	-	-	-	-	5,260	1,090	6,350	6,350	-	-	-	-	-	-	-	-	-	63,091
1b.4.17	Utility Staff Cost	-	-	-	-	-	-	13,172	2,730	15,902	15,902	-	-	-	-	-	-	-	-	-	210,994
1b.4	Subtotal Period 1b Period-Dependent Costs	28	515	7	2	-	22	23,745	4,972	29,292	26,176	3,116	-	-	354	-	-	-	7,084	13	280,167
1b.0	TOTAL PERIOD 1b COST	4,051	1,517	195	789	-	7,010	35,672	12,849	62,083	57,464	3,714	905	-	755	2,403	-	-	297,826	26,626	322,822
PERIOD 1 TOTALS		4,051	2,493	206	793	-	7,048	94,170	25,002	133,763	122,647	9,557	1,559	-	1,364	2,403	-	-	310,016	26,648	832,239
PERIOD 2a - Large Component Removal																					
Period 2a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
2a.1.1.1	Reactor Coolant Piping	305	287	40	40	-	766	-	588	2,027	2,027	-	-	-	2,141	-	-	-	258,908	10,138	-
2a.1.1.2	Pressurizer Quench Tank	32	29	6	6	-	108	-	72	254	254	-	-	-	329	-	-	-	36,557	1,073	-
2a.1.1.3	Reactor Coolant Pumps & Motors	120	101	44	121	-	1,358	-	618	2,360	2,360	-	-	-	5,388	-	-	-	871,200	4,152	-
2a.1.1.4	Pressurizer	38	59	454	295	-	620	-	385	1,852	1,852	-	-	-	2,460	-	-	-	269,821	2,282	-
2a.1.1.5	Steam Generators	394	3,846	2,686	1,924	2,974	5,939	-	5,040	22,803	22,803	-	-	37,344	23,568	-	-	-	3,353,901	23,234	1,750
2a.1.1.6	Retired Steam Generator Units	-	-	1,895	1,890	2,974	5,768	-	3,263	15,790	15,790	-	-	37,344	22,887	-	-	-	3,128,906	10,800	1,125
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	162	92	224	37	-	255	-	270	1,040	1,040	-	-	-	3,881	-	-	-	86,025	4,285	-
2a.1.1.8	Reactor Vessel Internals	144	2,231	5,070	914	-	4,579	234	7,692	20,864	20,864	-	-	-	1,753	845	574	-	359,588	28,500	1,272
2a.1.1.9	Reactor Vessel	100	4,159	1,598	651	-	8,548	234	11,113	26,404	26,404	-	-	-	6,416	2,379	-	-	964,382	28,500	1,272
2a.1.1	Totals	1,295	10,804	12,018	5,878	5,948	27,941	469	29,041	93,394	93,394	-	-	74,688	68,822	3,224	574	-	9,329,287	112,963	5,419
Removal of Major Equipment																					
2a.1.2	Main Turbine/Generator	-	534	192	139	881	605	-	631	2,981	2,981	-	-	7,712	2,301	-	-	-	551,290	9,450	-
2a.1.3	Main Condensers	-	1,529	181	131	831	570	-	950	4,193	4,193	-	-	7,274	2,170	-	-	-	520,010	27,028	-
Cascading Costs from Clean Building Demolition																					
2a.1.4.1	*Reactor	-	1,208	-	-	-	-	-	250	1,458	1,458	-	-	-	-	-	-	-	-	13,127	-
2a.1.4.2	Containment Penetration Area	-	66	-	-	-	-	-	14	79	79	-	-	-	-	-	-	-	-	704	-
2a.1.4.3	Fuel Handling	-	175	-	-	-	-	-	36	212	212	-	-	-	-	-	-	-	-	1,746	-
2a.1.4	Totals	-	1,449	-	-	-	-	-	300	1,749	1,749	-	-	-	-	-	-	-	-	15,578	-

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Disposal of Plant Systems																					
2a.1.5.1	Auxiliary Steam	-	245	6	56	458	-	-	192	958	958	-	-	4,445	-	-	-	-	180,494	4,001	-
2a.1.5.2	Auxiliary Steam (RCA)	-	213	3	29	240	-	-	130	616	616	-	-	2,330	-	-	-	-	94,627	3,528	-
2a.1.5.3	Condensate System	-	1,131	68	592	4,856	-	-	1,530	8,176	8,176	-	-	47,076	-	-	-	-	1,911,765	18,771	-
2a.1.5.4	Condensate System (Insulated)	-	401	21	182	1,497	-	-	489	2,590	2,590	-	-	14,512	-	-	-	-	589,348	6,833	-
2a.1.5.5	Containment Spray	-	194	10	87	713	-	-	234	1,237	1,237	-	-	6,908	-	-	-	-	280,525	3,329	-
2a.1.5.6	Extraction Steam & Heater Drip	-	450	16	143	1,176	-	-	431	2,216	2,216	-	-	11,399	-	-	-	-	462,924	7,441	-
2a.1.5.7	Feedwater System	-	65	5	48	395	-	-	115	628	628	-	-	3,829	-	-	-	-	155,509	1,130	-
2a.1.5.8	Feedwater System (Insulated)	-	271	11	101	825	-	-	287	1,495	1,495	-	-	7,995	-	-	-	-	324,669	4,542	-
2a.1.5.9	Feedwater System (RCA Insulated)	-	98	3	24	199	-	-	81	405	405	-	-	1,926	-	-	-	-	78,223	1,693	-
2a.1.5.10	Feedwater System (RCA)	-	5	0	1	10	-	-	4	21	21	-	-	101	-	-	-	-	4,117	81	-
2a.1.5.11	Lube Oil Distribution & Purification	-	188	3	25	205	-	-	113	533	533	-	-	1,986	-	-	-	-	80,661	3,052	-
2a.1.5.12	Nitrogen & Hydrogen	-	17	-	-	-	-	-	3	20	-	-	20	-	-	-	-	-	-	315	-
2a.1.5.13	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	17	-
2a.1.5.14	Nitrogen & Hydrogen (RCA Insulated)	-	5	0	0	2	-	-	2	9	9	-	-	20	-	-	-	-	793	75	-
2a.1.5.15	Nitrogen & Hydrogen (RCA)	-	87	1	5	38	-	-	39	169	169	-	-	371	-	-	-	-	15,060	1,433	-
2a.1.5.16	Oily Water Separator & TB Sump	-	30	1	8	63	-	-	25	126	126	-	-	607	-	-	-	-	24,649	464	-
2a.1.5.17	Saltwater System	-	162	-	-	-	-	-	33	195	-	-	195	-	-	-	-	-	-	2,926	-
2a.1.5.18	Turbine Steam Supply	-	1,227	80	700	5,742	-	-	1,770	9,519	9,519	-	-	55,669	-	-	-	-	2,260,765	20,590	-
2a.1.5.19	Turbine Steam Supply (RCA)	-	671	22	182	1,497	-	-	583	2,954	2,954	-	-	14,508	-	-	-	-	589,194	11,474	-
2a.1.5.20	Turbine and Generator	-	116	4	37	300	-	-	110	567	567	-	-	2,909	-	-	-	-	118,127	1,947	-
2a.1.5.21	Turbine and Generator (Insulated)	-	49	1	8	63	-	-	32	152	152	-	-	607	-	-	-	-	24,645	777	-
2a.1.5	Totals	-	5,622	256	2,228	18,278	-	-	6,204	32,587	32,371	-	216	177,198	-	-	-	-	7,196,094	94,419	-
2a.1.6	Scaffolding in support of decommissioning	-	2,311	12	9	67	10	-	819	3,227	3,227	-	-	586	37	-	-	-	29,669	18,689	-
2a.1	Subtotal Period 2a Activity Costs	1,295	22,249	12,658	8,384	26,006	29,126	469	37,945	138,131	137,915	-	216	267,458	73,330	3,224	574	-	17,626,350	278,128	5,419
Period 2a Additional Costs																					
2a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	528	1,355	1,355	-	-	-	2,002	-	-	-	211,020	2,100	84
2a.2	Subtotal Period 2a Additional Costs	-	102	151	55	-	503	15	528	1,355	1,355	-	-	-	2,002	-	-	-	211,020	2,100	84
Period 2a Collateral Costs																					
2a.3.1	Process liquid waste	106	-	49	196	-	183	-	184	718	718	-	-	-	725	-	-	-	43,508	141	-
2a.3.2	Small tool allowance	-	299	-	-	-	-	-	62	361	325	-	36	-	-	-	-	-	-	-	-
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,586	329	1,915	-	1,915	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	106	299	49	196	-	183	1,586	575	2,994	1,043	1,915	36	-	725	-	-	-	43,508	141	-
Period 2a Period-Dependent Costs																					
2a.4.1	Decon supplies	91	-	-	-	-	-	-	31	122	122	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	699	97	796	796	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	160	22	182	164	-	18	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	2,049	-	-	-	-	-	708	2,756	2,756	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,735	-	-	-	-	-	774	4,509	4,509	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	-	97	36	-	320	-	131	584	584	-	-	-	5,158	-	-	-	103,157	188	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	2,004	415	2,419	2,419	-	-	-	-	-	-	-	-	-	-
2a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	302	-	302	-	302	-	-	-	-	-	-	-	-	-
2a.4.9	NRC Fees	-	-	-	-	-	-	1,044	144	1,188	1,188	-	-	-	-	-	-	-	-	-	-
2a.4.10	Emergency Planning Fees	-	-	-	-	-	-	892	123	1,015	-	1,015	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	1,165	242	1,407	-	1,407	-	-	-	-	-	-	-	-	-
2a.4.12	ISFSI - Operating Costs	-	-	-	-	-	-	224	46	270	-	270	-	-	-	-	-	-	-	-	-
2a.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	6,026	1,249	7,276	-	7,276	-	-	-	-	-	-	-	-	-
2a.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	454	94	549	-	549	-	-	-	-	-	-	-	-	-
2a.4.15	Security Staff Cost	-	-	-	-	-	-	1,151	239	1,390	1,390	-	-	-	-	-	-	-	-	-	18,197
2a.4.16	DOC Staff Cost	-	-	-	-	-	-	20,607	4,272	24,879	24,879	-	-	-	-	-	-	-	-	-	251,451
2a.4.17	Utility Staff Cost	-	-	-	-	-	-	29,137	6,040	35,177	35,177	-	-	-	-	-	-	-	-	-	460,189
2a.4	Subtotal Period 2a Period-Dependent Costs	91	5,784	97	36	-	320	63,867	14,629	84,823	73,986	10,819	18	-	5,158	-	-	-	103,157	188	729,838

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt, Lbs.	Craft Manhours	Utility and Contractor Manhours
2a.0	TOTAL PERIOD 2a COST	1,492	28,433	12,955	8,671	26,006	30,131	65,937	53,676	227,302	214,298	12,734	271	267,458	81,215	3,224	574	-	17,984,030	280,557	735,341
PERIOD 2b - Site Decontamination																					
Period 2b Direct Decommissioning Activities																					
Disposal of Plant Systems																					
2b.1.1.1	Capital Additions 85-2002 (clean)	-	155	-	-	-	-	-	32	187	-	-	187	-	-	-	-	-	-	2,830	-
2b.1.1.2	Capital Additions 85-2002 (contaminated)	-	353	3	28	234	-	-	177	795	795	-	-	2,266	-	-	-	-	92,043	6,160	-
2b.1.1.3	Chemical & Volume Control	725	948	62	87	475	573	-	1,152	4,023	4,023	-	-	4,609	2,316	-	-	-	380,777	26,732	-
2b.1.1.4	Chemical & Volume Control (Insulated)	265	341	19	13	40	161	-	370	1,210	1,210	-	-	383	615	-	-	-	70,078	10,196	-
2b.1.1.5	Component Cooling Water	-	166	-	-	-	-	-	34	201	-	-	201	-	-	-	-	-	-	3,078	-
2b.1.1.6	Component Cooling Water (RCA)	-	478	13	107	876	-	-	371	1,844	1,844	-	-	8,495	-	-	-	-	344,999	8,025	-
2b.1.1.7	Compressed Air	-	148	-	-	-	-	-	31	178	-	-	178	-	-	-	-	-	-	2,744	-
2b.1.1.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	98	-
2b.1.1.9	Compressed Air (RCA Insulated)	-	22	0	1	10	-	-	10	45	45	-	-	102	-	-	-	-	4,130	380	-
2b.1.1.10	Compressed Air (RCA)	-	413	3	24	199	-	-	190	830	830	-	-	1,932	-	-	-	-	78,476	6,959	-
2b.1.1.11	Diesel Engine-Generator	-	152	-	-	-	-	-	32	184	-	-	184	-	-	-	-	-	-	2,760	-
2b.1.1.12	Diesel Engine-Generator (Insulated)	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	178	-
2b.1.1.13	Electrical (Clean)	-	1,809	-	-	-	-	-	375	2,184	-	-	2,184	-	-	-	-	-	-	32,770	-
2b.1.1.14	Electrical (Contaminated)	-	491	9	63	505	35	-	301	1,404	1,404	-	-	4,898	132	-	-	-	210,603	8,543	-
2b.1.1.15	Electrical (Decontaminated)	-	3,025	73	612	5,022	-	-	2,223	10,955	10,955	-	-	48,689	-	-	-	-	1,977,300	51,247	-
2b.1.1.16	Fire Protection	-	311	11	93	761	-	-	286	1,460	1,460	-	-	7,373	-	-	-	-	299,432	5,298	-
2b.1.1.17	Gaseous Radwaste	-	66	4	3	14	28	-	36	151	151	-	-	131	105	-	-	-	14,631	1,089	-
2b.1.1.18	HVAC (Clean Insulated)	-	24	-	-	-	-	-	5	29	-	-	29	-	-	-	-	-	-	475	-
2b.1.1.19	HVAC (Clean)	-	304	-	-	-	-	-	63	367	-	-	367	-	-	-	-	-	-	5,804	-
2b.1.1.20	HVAC (Contaminated Insulated)	-	254	6	36	281	30	-	165	772	772	-	-	2,728	114	-	-	-	120,927	4,027	-
2b.1.1.21	HVAC (Contaminated)	-	1,128	34	178	1,381	183	-	781	3,684	3,684	-	-	13,391	695	-	-	-	605,518	18,115	-
2b.1.1.22	Liquid Radwaste	478	598	48	44	172	440	-	741	2,521	2,521	-	-	1,667	1,886	-	-	-	216,389	18,104	-
2b.1.1.23	Liquid Radwaste (Insulated)	56	63	4	2	5	36	-	75	241	241	-	-	46	135	-	-	-	13,869	1,993	-
2b.1.1.24	Make-up Water	-	306	-	-	-	-	-	63	369	-	-	369	-	-	-	-	-	-	5,614	-
2b.1.1.25	Make-up Water (Insulated)	-	28	-	-	-	-	-	6	34	-	-	34	-	-	-	-	-	-	521	-
2b.1.1.26	Make-up Water (RCA Insulated)	-	34	0	3	28	-	-	18	84	84	-	-	269	-	-	-	-	10,909	564	-
2b.1.1.27	Make-up Water (RCA)	-	180	2	19	157	-	-	99	458	458	-	-	1,522	-	-	-	-	61,817	2,969	-
2b.1.1.28	Miscellaneous Reactor Coolant	17	98	4	5	29	31	-	64	250	250	-	-	283	124	-	-	-	21,970	1,932	-
2b.1.1.29	Nuclear Steam Supply Sampling	-	146	4	6	31	35	-	71	292	292	-	-	299	133	-	-	-	23,955	2,684	-
2b.1.1.30	Nuclear Steam Supply Sampling (Insulated	-	44	1	1	1	8	-	19	73	73	-	-	10	31	-	-	-	3,177	816	-
2b.1.1.31	Residual Heat Removal	275	258	56	68	309	589	-	569	2,124	2,124	-	-	2,999	2,242	-	-	-	320,783	5,703	-
2b.1.1.32	Safety Injection	-	101	4	11	76	31	-	64	287	287	-	-	736	121	-	-	-	40,322	1,773	-
2b.1.1.33	Safety Injection (Insulated)	-	5	0	0	3	2	-	3	13	13	-	-	25	7	-	-	-	1,628	82	-
2b.1.1.34	Safety Injection (RCA Insulated)	-	32	2	4	23	17	-	23	100	100	-	-	221	64	-	-	-	14,653	537	-
2b.1.1.35	Safety Injection (RCA)	-	270	17	33	205	151	-	197	874	874	-	-	1,989	576	-	-	-	131,878	4,462	-
2b.1.1.36	Service Cooling Water	-	100	-	-	-	-	-	21	121	-	-	121	-	-	-	-	-	-	1,856	-
2b.1.1.37	Service Cooling Water (RCA)	-	23	0	3	26	-	-	14	67	67	-	-	253	-	-	-	-	10,286	384	-
2b.1.1	Totals	1,817	12,889	382	1,445	10,864	2,349	-	8,681	38,426	34,556	-	3,871	105,317	9,297	-	-	-	5,070,550	247,503	-
2b.1.2	Scaffolding in support of decommissioning	-	2,889	15	11	84	12	-	1,024	4,034	4,034	-	-	733	46	-	-	-	37,087	23,361	-
Decontamination of Site Buildings																					
2b.1.3.1	*Reactor	1,524	1,737	381	349	426	3,703	-	3,146	11,265	11,265	-	-	4,128	20,482	-	-	-	2,076,526	53,197	-
2b.1.3.2	Capital Additions 85-2004	27	23	1	4	40	3	-	36	133	133	-	-	386	14	-	-	-	16,586	839	-
2b.1.3.3	Containment Penetration Area	266	188	29	33	120	394	-	421	1,450	1,450	-	-	1,164	1,509	-	-	-	180,273	7,367	-
2b.1.3	Totals	1,817	1,947	410	386	586	4,099	-	3,603	12,848	12,848	-	-	5,678	22,005	-	-	-	2,273,384	61,403	-
2b.1	Subtotal Period 2b Activity Costs	3,634	17,724	807	1,842	11,533	6,460	-	13,308	55,308	51,438	-	3,871	111,728	31,348	-	-	-	7,381,021	332,267	-

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Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2b Collateral Costs																					
2b.3.1	Process liquid waste	210	-	189	779	-	1,011	-	682	2,873	2,873	-	-	-	2,821	-	-	-	240,731	550	-
2b.3.2	Small tool allowance	-	366	-	-	-	-	-	76	441	441	-	-	-	-	-	-	-	-	-	-
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	898	186	1,084	-	1,084	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	210	366	189	779	-	1,011	898	944	4,399	3,314	1,084	-	-	2,821	-	-	-	240,731	550	-
Period 2b Period-Dependent Costs																					
2b.4.1	Decon supplies	792	-	-	-	-	-	-	274	1,066	1,066	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	846	117	963	963	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	-	-	-	-	-	-	194	27	220	220	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	2,360	-	-	-	-	-	815	3,176	3,176	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	4,490	-	-	-	-	-	931	5,420	5,420	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	89	33	-	294	-	121	536	536	-	-	-	4,735	-	-	-	94,697	172	-
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,915	397	2,312	2,312	-	-	-	-	-	-	-	-	-	-
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	366	-	366	-	366	-	-	-	-	-	-	-	-	-
2b.4.9	NRC Fees	-	-	-	-	-	-	1,264	175	1,439	1,439	-	-	-	-	-	-	-	-	-	-
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	715	99	814	-	814	-	-	-	-	-	-	-	-	-
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	918	190	1,108	-	1,108	-	-	-	-	-	-	-	-	-
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,411	293	1,704	-	1,704	-	-	-	-	-	-	-	-	-
2b.4.13	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	369	76	445	445	-	-	-	-	-	-	-	-	-	-
2b.4.14	ISFSI - Operating Costs	-	-	-	-	-	-	271	56	327	-	327	-	-	-	-	-	-	-	-	-
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	5,128	1,063	6,191	-	6,191	-	-	-	-	-	-	-	-	-
2b.4.16	ISFSI - Fixed Costs	-	-	-	-	-	-	550	114	664	-	664	-	-	-	-	-	-	-	-	-
2b.4.17	Security Staff Cost	-	-	-	-	-	-	1,394	289	1,683	1,683	-	-	-	-	-	-	-	-	-	22,031
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	17,184	3,562	20,747	20,747	-	-	-	-	-	-	-	-	-	216,309
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	25,221	5,228	30,450	30,450	-	-	-	-	-	-	-	-	-	402,574
2b.4	Subtotal Period 2b Period-Dependent Costs	792	6,850	89	33	-	294	57,747	13,827	79,632	68,458	11,174	-	-	4,735	-	-	-	94,697	172	640,914
2b.0	TOTAL PERIOD 2b COST	4,636	24,940	1,086	2,654	11,533	7,765	58,645	28,079	139,339	123,210	12,258	3,871	111,728	38,904	-	-	-	7,716,449	332,989	640,914
PERIOD 2c - Wet Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
Period 2c Collateral Costs																					
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	9,873	2,047	11,920	-	11,920	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	9,873	2,047	11,920	-	11,920	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	3,474	480	3,954	3,954	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	805	111	917	917	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	701	-	-	-	-	-	242	943	943	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	15	6	-	49	-	20	90	90	-	-	-	797	-	-	-	15,949	29	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,016	418	2,434	2,434	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,522	-	1,522	-	1,522	-	-	-	-	-	-	-	-	-
2c.4.7	NRC Fees	-	-	-	-	-	-	1,457	201	1,659	1,659	-	-	-	-	-	-	-	-	-	-
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,974	411	3,386	-	3,386	-	-	-	-	-	-	-	-	-
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,050	839	4,889	-	4,889	-	-	-	-	-	-	-	-	-
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	5,868	1,216	7,084	-	7,084	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	1,125	233	1,359	-	1,359	-	-	-	-	-	-	-	-	-
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	44,027	9,127	53,154	-	53,154	-	-	-	-	-	-	-	-	-
2c.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	2,288	474	2,762	-	2,762	-	-	-	-	-	-	-	-	-
2c.4.14	Utility Staff Cost	-	-	-	-	-	-	6,990	1,449	8,439	8,439	-	-	-	-	-	-	-	-	-	118,932
2c.4	Subtotal Period 2c Period-Dependent Costs	-	701	15	6	-	49	76,596	15,223	92,590	18,435	74,155	-	-	797	-	-	-	15,949	29	118,932
2c.0	TOTAL PERIOD 2c COST	-	701	15	6	-	49	86,469	17,270	104,510	18,435	86,075	-	-	797	-	-	-	15,949	29	118,932

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2d - Decontamination Following Wet Fuel Storage																					
Period 2d Direct Decommissioning Activities																					
2d.1.1	Remove spent fuel racks	477	47	136	34	-	656	-	598	1,948	1,948	-	-	-	2,496	-	-	-	221,587	962	-
Disposal of Plant Systems																					
2d.1.2.1	Electrical (Contaminated) - FHB	-	142	1	10	77	5.	-	69	305	305	-	-	746	20	-	-	-	32,098	2,475	-
2d.1.2.2	Electrical (Decontaminated) - FHB	-	880	11	90	742	-	-	478	2,202	2,202	-	-	7,198	-	-	-	-	292,312	14,847	-
2d.1.2.3	Fire Protection (RCA)	-	191	2	20	162	-	-	104	478	478	-	-	1,570	-	-	-	-	63,760	3,139	-
2d.1.2.4	HVAC (Contaminated) - FHB	-	268	8	41	320	36	-	181	854	854	-	-	3,102	138	-	-	-	138,203	4,294	-
2d.1.2.5	Spent Fuel Pit Cooling	-	70	22	26	117	221	-	133	588	588	-	-	1,130	841	-	-	-	120,463	1,270	-
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	97	24	27	125	237	-	150	660	660	-	-	1,209	903	-	-	-	129,199	1,737	-
2d.1.2	Totals	-	1,649	68	214	1,543	499	-	1,116	5,088	5,088	-	-	14,955	1,902	-	-	-	776,035	27,761	-
Decontamination of Site Buildings																					
2d.1.3.1	Fuel Handling	665	723	39	48	206	510	-	944	3,134	3,134	-	-	1,996	1,965	-	-	-	253,465	23,531	-
2d.1.3	Totals	665	723	39	48	206	510	-	944	3,134	3,134	-	-	1,996	1,965	-	-	-	253,465	23,531	-
2d.1.4	Scaffolding in support of decommissioning	-	578	3	2	17	2	-	205	807	807	-	-	147	9	-	-	-	7,417	4,672	-
2d.1	Subtotal Period 2d Activity Costs	1,142	2,996	246	298	1,765	1,668	-	2,862	10,977	10,977	-	-	17,097	6,372	-	-	-	1,258,505	56,927	-
Period 2d Additional Costs																					
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	669	277	946	946	-	-	-	-	-	-	-	-	-	6,240
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	669	277	946	946	-	-	-	-	-	-	-	-	-	6,240
Period 2d Collateral Costs																					
2d.3.1	Process liquid waste	116	-	53	215	-	200	-	201	785	785	-	-	-	794	-	-	-	47,648	155	-
2d.3.2	Small tool allowance	-	72	-	-	-	-	-	15	87	87	-	-	-	-	-	-	-	-	-	-
2d.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	99	-	215	1,229	1,229	-	-	6,000	378	-	-	-	303,548	88	-
2d.3	Subtotal Period 2d Collateral Costs	116	72	174	322	686	299	-	432	2,101	2,101	-	-	6,000	1,172	-	-	-	351,197	243	-
Period 2d Period-Dependent Costs																					
2d.4.1	Decon supplies	210	-	-	-	-	-	-	73	283	283	-	-	-	-	-	-	-	-	-	-
2d.4.2	Insurance	-	-	-	-	-	-	177	24	201	201	-	-	-	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	46	6	53	53	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	443	-	-	-	-	-	153	597	597	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental	-	1,076	-	-	-	-	-	223	1,299	1,299	-	-	-	-	-	-	-	-	-	-
2d.4.6	Disposal of DAW generated	-	-	26	10	-	87	-	36	159	159	-	-	-	1,400	-	-	-	28,006	51	-
2d.4.7	Plant energy budget	-	-	-	-	-	-	245	51	296	296	-	-	-	-	-	-	-	-	-	-
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	88	-	88	-	88	-	-	-	-	-	-	-	-	-
2d.4.9	NRC Fees	-	-	-	-	-	-	303	42	345	345	-	-	-	-	-	-	-	-	-	-
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	171	24	195	-	195	-	-	-	-	-	-	-	-	-
2d.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	207	43	250	-	250	-	-	-	-	-	-	-	-	-
2d.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	177	37	213	213	-	-	-	-	-	-	-	-	-	-
2d.4.13	ISFSI - Operating Costs	-	-	-	-	-	-	65	13	78	-	78	-	-	-	-	-	-	-	-	-
2d.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	132	27	159	-	159	-	-	-	-	-	-	-	-	-
2d.4.15	Security Staff Cost	-	-	-	-	-	-	182	38	220	220	-	-	-	-	-	-	-	-	-	2,880
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	2,769	574	3,343	3,343	-	-	-	-	-	-	-	-	-	35,040
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	3,526	731	4,257	4,257	-	-	-	-	-	-	-	-	-	58,080
2d.4	Subtotal Period 2d Period-Dependent Costs	210	1,519	26	10	-	87	8,088	2,095	12,036	11,265	770	-	-	1,400	-	-	-	28,006	51	96,000
2d.0	TOTAL PERIOD 2d COST	1,469	4,587	446	630	2,451	2,054	8,757	5,666	26,060	25,290	770	-	23,097	8,944	-	-	-	1,637,707	57,221	102,240

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Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2e - License Termination																					
Period 2e Direct Decommissioning Activities																					
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	63	216	216	-	-	-	-	-	-	-	-	-	-
2e.1.2	Terminate license									a											
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	153	63	216	216	-	-	-	-	-	-	-	-	-	-
Period 2e Additional Costs																					
2e.2.1	License Termination Survey	-	-	-	-	-	-	8,178	3,390	11,568	11,568	-	-	-	-	-	-	-	-	142,829	3,120
2e.2	Subtotal Period 2e Additional Costs	-	-	-	-	-	-	8,178	3,390	11,568	11,568	-	-	-	-	-	-	-	-	142,829	3,120
Period 2e Collateral Costs																					
2e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,395	289	1,684	1,684	-	-	-	-	-	-	-	-	-	-
2e.3	Subtotal Period 2e Collateral Costs	-	-	-	-	-	-	1,395	289	1,684	1,684	-	-	-	-	-	-	-	-	-	-
Period 2e Period-Dependent Costs																					
2e.4.1	Insurance	-	-	-	-	-	-	290	40	330	330	-	-	-	-	-	-	-	-	-	-
2e.4.2	Property taxes	-	-	-	-	-	-	76	11	86	86	-	-	-	-	-	-	-	-	-	-
2e.4.3	Health physics supplies	-	919	-	-	-	-	-	318	1,236	1,236	-	-	-	-	-	-	-	-	-	-
2e.4.4	Disposal of DAW generated	-	-	6	2	-	20	-	8	36	36	-	-	-	319	-	-	-	6,371	12	-
2e.4.5	Plant energy budget	-	-	-	-	-	-	200	42	242	242	-	-	-	-	-	-	-	-	-	-
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	144	-	144	-	144	-	-	-	-	-	-	-	-	-
2e.4.7	NRC Fees	-	-	-	-	-	-	532	73	605	605	-	-	-	-	-	-	-	-	-	-
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	281	39	319	-	319	-	-	-	-	-	-	-	-	-
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	339	70	409	-	409	-	-	-	-	-	-	-	-	-
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	106	22	128	-	128	-	-	-	-	-	-	-	-	-
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	216	45	261	-	261	-	-	-	-	-	-	-	-	-
2e.4.12	Security Staff Cost	-	-	-	-	-	-	298	62	360	360	-	-	-	-	-	-	-	-	-	4,714
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	2,847	590	3,437	3,437	-	-	-	-	-	-	-	-	-	36,143
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	2,525	523	3,048	3,048	-	-	-	-	-	-	-	-	-	39,286
2e.4	Subtotal Period 2e Period-Dependent Costs	-	919	6	2	-	20	7,852	1,842	10,642	9,381	1,261	-	-	319	-	-	-	6,371	12	80,143
2e.0	TOTAL PERIOD 2e COST	-	919	6	2	-	20	17,578	5,585	24,110	22,849	1,261	-	-	319	-	-	-	6,371	142,841	83,263
PERIOD 2 TOTALS		7,597	59,580	14,508	11,963	39,990	40,020	237,386	110,277	521,321	404,082	113,098	4,141	402,284	130,180	3,224	574	-	27,360,510	813,637	1,680,690
PERIOD 3b - Site Restoration																					
Period 3b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
3b.1.1.1	*Reactor	-	6,873	-	-	-	-	-	1,425	8,298	-	-	8,298	-	-	-	-	-	-	74,901	-
3b.1.1.2	Capital Additions 85-2004	-	273	-	-	-	-	-	57	330	-	-	330	-	-	-	-	-	-	3,572	-
3b.1.1.3	Containment Penetration Area	-	615	-	-	-	-	-	127	742	-	-	742	-	-	-	-	-	-	6,563	-
3b.1.1.4	Miscellaneous	-	26	-	-	-	-	-	5	31	-	-	31	-	-	-	-	-	-	249	-
3b.1.1.5	Turbine	-	3,274	-	-	-	-	-	679	3,952	-	-	3,952	-	-	-	-	-	-	38,602	-
3b.1.1.6	Turbine Pedestal	-	1,212	-	-	-	-	-	251	1,463	-	-	1,463	-	-	-	-	-	-	11,300	-
3b.1.1.7	Fuel Handling	-	1,689	-	-	-	-	-	350	2,039	-	-	2,039	-	-	-	-	-	-	16,750	-
3b.1.1	Totals	-	13,961	-	-	-	-	-	2,894	16,856	-	-	16,856	-	-	-	-	-	-	151,936	-
Site Closeout Activities																					
3b.1.2	Grade & landscape site	-	2,272	-	-	-	-	-	471	2,743	-	-	2,743	-	-	-	-	-	-	4,587	-
3b.1.3	Final report to NRC	-	-	-	-	-	-	187	39	226	226	-	-	-	-	-	-	-	-	-	1,560
3b.1	Subtotal Period 3b Activity Costs	-	16,234	-	-	-	-	187	3,404	19,825	226	-	19,599	-	-	-	-	-	-	156,523	1,560

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Diablo Canyon Unit 1
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Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3b Additional Costs																					
3b.2.1	Concrete Crushing	-	464	-	0	-	-	-	96	560	-	-	560	-	-	-	-	-	-	2,063	-
3b.2.2	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	91	529	-	-	529	-	-	-	-	-	-	4,004	-
3b.2	Subtotal Period 3b Additional Costs	-	901	-	0	-	-	-	187	1,089	-	-	1,089	-	-	-	-	-	-	6,067	-
Period 3b Collateral Costs																					
3b.3.1	Small tool allowance	-	187	-	-	-	-	-	39	225	-	-	225	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	187	-	-	-	-	-	39	225	-	-	225	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Insurance	-	-	-	-	-	-	787	109	896	-	896	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	207	29	235	-	235	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	6,420	-	-	-	-	-	1,331	7,750	-	-	7,750	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	273	56	329	-	-	329	-	-	-	-	-	-	-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	391	-	391	-	391	-	-	-	-	-	-	-	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	763	105	869	-	869	-	-	-	-	-	-	-	-	-
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	921	191	1,112	-	1,112	-	-	-	-	-	-	-	-	-
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	289	60	349	-	349	-	-	-	-	-	-	-	-	-
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	587	122	709	-	709	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	338	70	408	-	-	408	-	-	-	-	-	-	-	5,343
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	6,581	1,364	7,945	-	-	7,945	-	-	-	-	-	-	-	81,211
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	1,713	355	2,068	0	1,158	910	-	-	-	-	-	-	-	27,783
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,420	-	-	-	-	12,849	3,792	23,061	0	5,718	17,342	-	-	-	-	-	-	-	114,337
3b.0	TOTAL PERIOD 3b COST	-	23,741	-	0	-	-	13,036	7,422	44,199	226	5,718	38,255	-	-	-	-	-	-	162,590	115,897
PERIOD 3c - Fuel Storage Operations/Shipping																					
Period 3c Direct Decommissioning Activities																					
Period 3c Collateral Costs																					
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs																					
3c.4.1	Insurance	-	-	-	-	-	-	4,184	578	4,762	-	4,762	-	-	-	-	-	-	-	-	-
3c.4.2	Property taxes	-	-	-	-	-	-	1,098	152	1,250	-	1,250	-	-	-	-	-	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,075	-	2,075	-	2,075	-	-	-	-	-	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,055	560	4,615	-	4,615	-	-	-	-	-	-	-	-	-
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,865	1,009	5,874	-	5,874	-	-	-	-	-	-	-	-	-
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,534	318	1,852	-	1,852	-	-	-	-	-	-	-	-	-
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,119	647	3,766	-	3,766	-	-	-	-	-	-	-	-	-
3c.4.9	Security Staff Cost	-	-	-	-	-	-	20,852	4,323	25,174	-	25,174	-	-	-	-	-	-	-	-	306,566
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,130	1,064	6,194	-	6,194	-	-	-	-	-	-	-	-	76,755
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	46,913	8,650	55,562	-	55,562	-	-	-	-	-	-	-	-	383,321
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	46,913	8,650	55,562	-	55,562	-	-	-	-	-	-	-	-	383,321
PERIOD 3d - GTCC shipping																					
Period 3d Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	300	-	-	8,952	-	1,897	11,150	11,150	-	-	-	-	-	-	433	85,510	-	-
3d.1.1	Totals	-	-	300	-	-	8,952	-	1,897	11,150	11,150	-	-	-	-	-	-	433	85,510	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	300	-	-	8,952	-	1,897	11,150	11,150	-	-	-	-	-	-	433	85,510	-	-

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3d Collateral Costs																					
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3d Period-Dependent Costs																					
3d.4.1	Insurance	-	-	-	-	-	-	15	2	17	-	17	-	-	-	-	-	-	-	-	-
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	4	-	4	-	-	-	-	-	-	-	-	-
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	7	-	7	-	7	-	-	-	-	-	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	14	2	16	-	16	-	-	-	-	-	-	-	-	-
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7	-	7	-	-	-	-	-	-	-	-	-
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	11	2	13	-	13	-	-	-	-	-	-	-	-	-
3d.4.8	Security Staff Cost	-	-	-	-	-	-	73	15	89	-	89	-	-	-	-	-	-	-	-	1,080
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	18	4	22	-	22	-	-	-	-	-	-	-	-	270
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	148	27	175	-	175	-	-	-	-	-	-	-	-	1,350
3d.0	TOTAL PERIOD 3d COST	-	-	300	-	-	8,952	148	1,924	11,325	11,150	175	-	-	-	-	-	433	85,510	-	1,350
PERIOD 3e - ISFSI Decontamination																					
Period 3e Direct Decommissioning Activities																					
Period 3e Additional Costs																					
3e.2.1	ISFSI License Termination	-	1,059	4	100	-	387	789	678	3,016	-	3,016	-	-	6,239	-	-	-	748,943	15,356	1,280
3e.2	Subtotal Period 3e Additional Costs	-	1,059	4	100	-	387	789	678	3,016	-	3,016	-	-	6,239	-	-	-	748,943	15,356	1,280
Period 3e Collateral Costs																					
3e.3.1	Small tool allowance	-	14	-	-	-	-	-	3	17	-	17	-	-	-	-	-	-	-	-	-
3e.3	Subtotal Period 3e Collateral Costs	-	14	-	-	-	-	-	3	17	-	17	-	-	-	-	-	-	-	-	-
Period 3e Period-Dependent Costs																					
3e.4.1	Insurance	-	-	-	-	-	-	127	18	145	-	145	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	33	5	38	-	38	-	-	-	-	-	-	-	-	-
3e.4.3	Heavy equipment rental	-	309	-	-	-	-	-	64	373	-	373	-	-	-	-	-	-	-	-	-
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3e.4.5	Security Staff Cost	-	-	-	-	-	-	172	36	207	-	207	-	-	-	-	-	-	-	-	2,510
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	129	27	156	-	156	-	-	-	-	-	-	-	-	1,901
3e.4	Subtotal Period 3e Period-Dependent Costs	-	309	-	-	-	-	461	149	919	-	919	-	-	-	-	-	-	-	-	4,411
3e.0	TOTAL PERIOD 3e COST	-	1,383	4	100	-	387	1,250	829	3,953	-	3,953	-	-	6,239	-	-	-	748,943	15,356	5,691
PERIOD 3f - ISFSI Site Restoration																					
Period 3f Direct Decommissioning Activities																					
Period 3f Additional Costs																					
3f.2.1	ISFSI Demolition and Site Restoration	-	562	-	-	-	-	24	121	707	-	707	-	-	-	-	-	-	-	3,446	80
3f.2	Subtotal Period 3f Additional Costs	-	562	-	-	-	-	24	121	707	-	707	-	-	-	-	-	-	-	3,446	80
Period 3f Collateral Costs																					
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5	-	5	-	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	4	-	-	-	-	-	1	5	-	5	-	-	-	-	-	-	-	-	-
Period 3f Period-Dependent Costs																					
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	17	2	19	-	19	-	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	103	-	-	-	-	-	21	125	-	125	-	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table C-1
Diablo Canyon Unit 1
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3f Period-Dependent Costs (continued)																					
3f.4.5	Security Staff Cost	-	-	-	-	-	-	86	18	104	-	104	-	-	-	-	-	-	-	-	1,265
3f.4.6	Utility Staff Cost	-	-	-	-	-	-	54	11	65	-	65	-	-	-	-	-	-	-	-	784
3f.4	Subtotal Period 3f Period-Dependent Costs	-	103	-	-	-	-	158	53	314	-	314	-	-	-	-	-	-	-	-	2,050
3f.0	TOTAL PERIOD 3f COST	-	669	-	-	-	-	181	175	1,025	-	1,025	-	-	-	-	-	-	-	3,446	2,130
PERIOD 3 TOTALS		-	*25,793*	*304*	*100*	-	*9,339*	*61,529*	*19,000*	*116,064*	*11,375*	*66,434*	*38,255*	-	*6,239*	-	-	*433*	*834,453*	*181,392*	*508,389*
TOTAL COST TO DECOMMISSION		11,648	87,866	15,019	12,856	39,990	56,407	393,084	154,278	771,148	538,104	189,088	43,956	402,284	137,783	5,627	574	433	28,504,980	1,021,677	3,021,318

TOTAL COST TO DECOMMISSION WITH 25.01% CONTINGENCY:	**$771,148**	**thousands of 2008 dollars**
TOTAL NRC LICENSE TERMINATION COST IS 69.78% OR:	**$538,104**	**thousands of 2008 dollars**
SPENT FUEL MANAGEMENT COST IS 24.52% OR:	**$189,088**	**thousands of 2008 dollars**
NON-NUCLEAR DEMOLITION COST IS 5.7% OR:	**$43,956**	**thousands of 2008 dollars**
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	**143,984**	**Cubic Feet**
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	**433**	**Cubic Feet**
TOTAL SCRAP METAL REMOVED:	**47,992**	**Tons**
TOTAL CRAFT LABOR REQUIREMENTS:	**1,021,677**	**Man-hours**

End Notes:
n/a - indicates that this activity not charged as decommissioning expense.
a - indicates that this activity performed by decommissioning staff.
0 - indicates that this value is less than 0.5 but is non-zero.
a cell containing " - " indicates a zero value

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1a - Shutdown through Transition																					
Period 1a Direct Decommissioning Activities																					
1a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
1a.1.2	Notification of Cessation of Operations									a											
1a.1.3	Remove fuel & source material									n/a											
1a.1.4	Notification of Permanent Defueling									a											
1a.1.5	Deactivate plant systems & process waste									a											
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	103	22	124	124	-	-	-	-	-	-	-	-	-	855
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	236	50	286	286	-	-	-	-	-	-	-	-	-	1,967
1a.1.8	Perform detailed rad survey									a											
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1a.1.10	End product description	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
1a.1.12	Define major work sequence	-	-	-	-	-	-	384	81	466	466	-	-	-	-	-	-	-	-	-	3,207
1a.1.13	Perform SER and EA	-	-	-	-	-	-	159	33	192	192	-	-	-	-	-	-	-	-	-	1,326
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	256	54	310	310	-	-	-	-	-	-	-	-	-	2,138
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	210	44	254	254	-	-	-	-	-	-	-	-	-	1,751
1a.1.16	Receive NRC approval of termination plan									a											
Activity Specifications																					
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	252	53	305	275	-	31	-	-	-	-	-	-	-	2,104
1a.1.17.2	Plant systems	-	-	-	-	-	-	214	45	259	233	-	26	-	-	-	-	-	-	-	1,782
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	26	5	31	31	-	-	-	-	-	-	-	-	-	214
1a.1.17.4	Reactor internals	-	-	-	-	-	-	364	77	441	441	-	-	-	-	-	-	-	-	-	3,036
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	333	70	403	403	-	-	-	-	-	-	-	-	-	2,779
1a.1.17.6	Biological shield	-	-	-	-	-	-	26	5	31	31	-	-	-	-	-	-	-	-	-	214
1a.1.17.7	Steam generators	-	-	-	-	-	-	160	34	194	194	-	-	-	-	-	-	-	-	-	1,334
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	82	17	99	50	-	50	-	-	-	-	-	-	-	684
1a.1.17.9	Main Turbine	-	-	-	-	-	-	21	4	25	-	-	25	-	-	-	-	-	-	-	171
1a.1.17.10	Main Condensers	-	-	-	-	-	-	21	4	25	-	-	25	-	-	-	-	-	-	-	171
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	160	34	194	97	-	97	-	-	-	-	-	-	-	1,334
1a.1.17.12	Waste management	-	-	-	-	-	-	236	50	286	286	-	-	-	-	-	-	-	-	-	1,967
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	46	10	56	28	-	28	-	-	-	-	-	-	-	385
1a.1.17	Total	-	-	-	-	-	-	1,939	409	2,348	2,067	-	280	-	-	-	-	-	-	-	16,175
Planning & Site Preparations																					
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	123	26	149	149	-	-	-	-	-	-	-	-	-	1,026
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	569	3,269	3,269	-	-	-	-	-	-	-	-	-	-
1a.1.20	Design water clean-up system	-	-	-	-	-	-	72	15	87	87	-	-	-	-	-	-	-	-	-	599
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	443	2,543	2,543	-	-	-	-	-	-	-	-	-	-
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	63	13	76	76	-	-	-	-	-	-	-	-	-	526
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	8,581	1,808	10,389	10,109	-	280	-	-	-	-	-	-	-	31,537
Period 1a Additional Costs																					
1a.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	6,272	1,322	7,593	7,593	-	-	-	-	-	-	-	-	-	-
1a.2	Subtotal Period 1a Additional Costs	-	-	-	-	-	-	6,272	1,322	7,593	7,593	-	-	-	-	-	-	-	-	-	-
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,649	348	1,997	-	1,997	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,649	348	1,997	-	1,997	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	1,195	168	1,363	1,363	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	101	14	115	115	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	457	-	-	-	-	-	161	618	618	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	103	593	593	-	-	-	-	-	-	-	-	-	-

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1a Period-Dependent Costs (continued)																					
1a.4.5	Disposal of DAW generated	-	-	11	4	-	35	-	15	64	64	-	-	-	565	-	-	-	11,299	21	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	280	1,610	1,610	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	191	-	191	-	191	-	-	-	-	-	-	-	-	-
1a.4.8	NRC Fees	-	-	-	-	-	-	471	66	537	537	-	-	-	-	-	-	-	-	-	-
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	177	1,434	-	1,434	-	-	-	-	-	-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	155	890	-	890	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	141	30	171	-	171	-	-	-	-	-	-	-	-	-
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	4,385	924	5,309	-	5,309	-	-	-	-	-	-	-	-	-
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	286	60	347	-	347	-	-	-	-	-	-	-	-	-
1a.4.14	Security Staff Cost	-	-	-	-	-	-	10,231	2,156	12,388	12,388	-	-	-	-	-	-	-	-	-	157,471
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	21,222	4,473	25,695	25,695	-	-	-	-	-	-	-	-	-	346,229
1a.4	Subtotal Period 1a Period-Dependent Costs	-	947	11	4	-	35	41,545	8,782	51,324	42,982	8,341	-	-	565	-	-	-	11,299	21	503,700
1a.0	TOTAL PERIOD 1a COST	-	947	11	4	-	35	58,047	12,259	71,303	60,684	10,338	280	-	565	-	-	-	11,299	21	535,237
PERIOD 1b - Decommissioning Preparations																					
Period 1b Direct Decommissioning Activities																					
Detailed Work Procedures																					
1b.1.1.1	Plant systems	-	-	-	-	-	-	243	51	294	264	-	29	-	-	-	-	-	-	-	2,024
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1b.1.1.3	Reactor internals	-	-	-	-	-	-	128	27	155	155	-	-	-	-	-	-	-	-	-	1,069
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	69	15	84	21	-	63	-	-	-	-	-	-	-	577
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	186	39	225	225	-	-	-	-	-	-	-	-	-	1,552
1b.1.1.9	Facility closeout	-	-	-	-	-	-	62	13	74	37	-	37	-	-	-	-	-	-	-	513
1b.1.1.10	Missile shields	-	-	-	-	-	-	23	5	28	28	-	-	-	-	-	-	-	-	-	192
1b.1.1.11	Biological shield	-	-	-	-	-	-	62	13	74	74	-	-	-	-	-	-	-	-	-	513
1b.1.1.12	Steam generators	-	-	-	-	-	-	236	50	286	286	-	-	-	-	-	-	-	-	-	1,967
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	51	11	62	31	-	31	-	-	-	-	-	-	-	428
1b.1.1.14	Main Turbine	-	-	-	-	-	-	80	17	97	-	-	97	-	-	-	-	-	-	-	667
1b.1.1.15	Main Condensers	-	-	-	-	-	-	80	17	97	-	-	97	-	-	-	-	-	-	-	667
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	140	29	169	153	-	17	-	-	-	-	-	-	-	1,167
1b.1.1.17	Reactor building	-	-	-	-	-	-	140	29	169	153	-	17	-	-	-	-	-	-	-	1,167
1b.1.1	Total	-	-	-	-	-	-	1,704	359	2,063	1,675	-	388	-	-	-	-	-	-	-	14,215
1b.1.2	Decon primary loop	1,635	-	-	-	-	-	-	1,148	2,783	2,783	-	-	-	-	-	-	-	-	1,067	-
1b.1	Subtotal Period 1b Activity Costs	1,635	-	-	-	-	-	1,704	1,508	4,847	4,459	-	388	-	-	-	-	-	-	1,067	14,215
Period 1b Additional Costs																					
1b.2.1	Site Characterization	-	-	-	-	-	-	1,945	820	2,765	2,765	-	-	-	-	-	-	-	-	10,690	4,024
1b.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	124	715	715	-	-	-	-	-	-	-	-	-	-
1b.2.3	Mixed Waste Management	-	-	-	-	-	-	912	192	1,104	1,104	-	-	-	-	-	-	-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	3,447	1,136	4,583	4,583	-	-	-	-	-	-	-	-	10,690	4,024
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	935	-	-	-	-	-	-	197	1,132	1,132	-	-	-	-	-	-	-	-	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	294	1,689	1,689	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process liquid waste	64	-	190	791	-	7,041	-	2,711	10,796	10,796	-	-	-	401	2,421	-	-	292,773	550	-
1b.3.4	Small tool allowance	-	2	-	-	-	-	-	0	3	3	-	-	-	-	-	-	-	-	-	-
1b.3.5	Pipe cutting equipment	-	1,000	-	-	-	-	-	211	1,211	1,211	-	-	-	-	-	-	-	-	-	-
1b.3.6	Decon rig	1,400	-	-	-	-	-	-	295	1,695	1,695	-	-	-	-	-	-	-	-	-	-
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	504	106	610	-	610	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	2,399	1,002	190	791	-	7,041	1,899	3,815	17,137	16,526	610	-	-	401	2,421	-	-	292,773	550	-

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	29	-	-	-	-	-	-	10	39	39	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	602	85	687	687	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	51	7	58	58	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	255	-	-	-	-	-	90	345	345	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	247	-	-	-	-	-	52	299	299	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	6	2	-	20	-	8	37	37	-	-	-	327	-	-	-	6,541	12	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	1,341	283	1,623	1,623	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	96	-	96	-	96	-	-	-	-	-	-	-	-	-
1b.4.9	NRC Fees	-	-	-	-	-	-	237	33	271	271	-	-	-	-	-	-	-	-	-	-
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	375	53	427	-	427	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	370	78	448	-	448	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI - Operating Costs	-	-	-	-	-	-	71	15	86	-	86	-	-	-	-	-	-	-	-	-
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,919	404	2,324	-	2,324	-	-	-	-	-	-	-	-	-
1b.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	144	30	175	-	175	-	-	-	-	-	-	-	-	-
1b.4.15	Security Staff Cost	-	-	-	-	-	-	5,158	1,087	6,245	6,245	-	-	-	-	-	-	-	-	-	79,383
1b.4.16	DOC Staff Cost	-	-	-	-	-	-	3,863	814	4,677	4,677	-	-	-	-	-	-	-	-	-	47,314
1b.4.17	Utility Staff Cost	-	-	-	-	-	-	10,698	2,255	12,953	12,953	-	-	-	-	-	-	-	-	-	174,537
1b.4	Subtotal Period 1b Period-Dependent Costs	29	502	6	2	-	20	24,926	5,304	30,790	27,234	3,556	-	-	327	-	-	-	6,541	12	301,234
1b.0	TOTAL PERIOD 1b COST	4,063	1,505	196	794	-	7,061	31,976	11,763	57,356	52,802	4,167	388	-	728	2,421	-	-	299,314	12,319	319,473
PERIOD 1 TOTALS		4,063	2,452	206	798	-	7,096	90,023	24,022	128,660	113,486	14,505	669	-	1,293	2,421	-	-	310,613	12,339	854,710
PERIOD 2a - Large Component Removal																					
Period 2a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
2a.1.1.1	Reactor Coolant Piping	305	287	40	40	-	766	-	598	2,036	2,036	-	-	-	2,141	-	-	-	258,908	10,138	-
2a.1.1.2	Pressurizer Quench Tank	32	29	6	6	-	108	-	73	255	255	-	-	-	329	-	-	-	36,557	1,073	-
2a.1.1.3	Reactor Coolant Pumps & Motors	120	101	44	121	-	1,358	-	628	2,371	2,371	-	-	-	5,388	-	-	-	871,200	4,152	-
2a.1.1.4	Pressurizer	38	59	454	295	-	620	-	391	1,859	1,859	-	-	-	2,460	-	-	-	269,821	2,282	-
2a.1.1.5	Steam Generators	394	3,846	2,686	1,924	2,974	5,939	-	5,124	22,887	22,887	-	-	37,344	23,568	-	-	-	3,353,901	23,234	1,750
2a.1.1.6	Retired Steam Generator Units	-	-	1,895	1,890	2,974	5,768	-	3,317	15,844	15,844	-	-	37,344	22,887	-	-	-	3,128,906	10,800	1,125
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	162	92	224	37	-	255	-	275	1,044	1,044	-	-	-	3,881	-	-	-	86,025	4,285	-
2a.1.1.8	Reactor Vessel Internals	134	2,198	5,018	870	-	4,516	229	7,700	20,667	20,667	-	-	-	1,502	845	574	-	352,188	27,833	1,245
2a.1.1.9	Reactor Vessel	100	4,126	1,562	651	-	8,548	229	11,250	26,467	26,467	-	-	-	6,416	2,379	-	-	964,382	27,833	1,245
2a.1.1	Totals	1,285	10,739	11,930	5,835	5,948	27,878	459	29,356	93,430	93,430	-	-	74,688	68,572	3,224	574	-	9,321,887	111,630	5,366
Removal of Major Equipment																					
2a.1.2	Main Turbine/Generator	-	532	191	138	879	603	-	640	2,983	2,983	-	-	7,691	2,294	-	-	-	549,788	9,425	-
2a.1.3	Main Condensers	-	1,529	181	131	831	570	-	966	4,208	4,208	-	-	7,274	2,170	-	-	-	520,010	27,028	-
Cascading Costs from Clean Building Demolition																					
2a.1.4.1	*Reactor	-	1,208	-	-	-	-	-	255	1,462	1,462	-	-	-	-	-	-	-	-	13,127	-
2a.1.4.2	Auxiliary	-	652	-	-	-	-	-	137	790	790	-	-	-	-	-	-	-	-	7,054	-
2a.1.4.3	Containment Penetration Area	-	66	-	-	-	-	-	14	80	80	-	-	-	-	-	-	-	-	704	-
2a.1.4.4	Radwaste Storage	-	82	-	-	-	-	-	17	99	99	-	-	-	-	-	-	-	-	918	-
2a.1.4.5	Fuel Handling	-	175	-	-	-	-	-	37	212	212	-	-	-	-	-	-	-	-	1,746	-
2a.1.4	Totals	-	2,183	-	-	-	-	-	460	2,643	2,643	-	-	-	-	-	-	-	-	23,550	-
Disposal of Plant Systems																					
2a.1.5.1	Auxiliary Steam	-	128	3	31	252	-	-	105	519	519	-	-	2,440	-	-	-	-	99,082	2,123	-
2a.1.5.2	Auxiliary Steam (RCA)	-	109	2	14	118	-	-	67	310	310	-	-	1,146	-	-	-	-	46,536	1,820	-
2a.1.5.3	Building Services (Non-Power Block)	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	106	-
2a.1.5.4	Condensate System	-	1,031	62	546	4,477	-	-	1,429	7,545	7,545	-	-	43,400	-	-	-	-	1,762,487	17,105	-
2a.1.5.5	Condensate System (Insulated)	-	388	21	181	1,481	-	-	490	2,561	2,561	-	-	14,362	-	-	-	-	583,235	6,634	-

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2a Disposal of Plant Systems (continued)																					
2a.1.5.6	Containment Spray	-	183	10	84	688	-	-	228	1,192	1,192	-	-	6,667	-	-	-	-	270,737	3,135	-
2a.1.5.7	Extraction Steam & Heater Drip	-	391	16	137	1,126	-	-	406	2,076	2,076	-	-	10,916	-	-	-	-	443,294	6,490	-
2a.1.5.8	Feedwater System	-	93	13	112	919	-	-	252	1,389	1,389	-	-	8,906	-	-	-	-	361,684	1,645	-
2a.1.5.9	Feedwater System (Insulated)	-	137	-	-	-	-	-	29	166	-	-	166	-	-	-	-	-	-	2,547	-
2a.1.5.10	Feedwater System (RCA Insulated)	-	93	3	24	197	-	-	80	396	396	-	-	1,907	-	-	-	-	77,448	1,601	-
2a.1.5.11	Feedwater System (RCA)	-	4	0	1	10	-	-	4	20	20	-	-	100	-	-	-	-	4,076	76	-
2a.1.5.12	NSSS Sampling	-	128	4	3	8	43	-	63	251	251	-	-	81	164	-	-	-	17,884	2,398	-
2a.1.5.13	NSSS Sampling (Insulated)	-	38	1	0	-	5	-	15	59	59	-	-	-	20	-	-	-	1,787	711	-
2a.1.5.14	Nitrogen & Hydrogen	-	16	-	-	-	-	-	3	20	-	-	20	-	-	-	-	-	-	309	-
2a.1.5.15	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	16	-
2a.1.5.16	Nitrogen & Hydrogen (RCA Insulated)	-	4	0	0	2	-	-	2	8	8	-	-	17	-	-	-	-	705	72	-
2a.1.5.17	Nitrogen & Hydrogen (RCA)	-	81	0	4	34	-	-	37	157	157	-	-	330	-	-	-	-	13,400	1,362	-
2a.1.5.18	Oily Water Separator & TB Sump	-	24	1	5	41	-	-	18	89	89	-	-	402	-	-	-	-	16,329	394	-
2a.1.5.19	Saltwater System	-	153	-	-	-	-	-	32	186	-	-	186	-	-	-	-	-	-	2,779	-
2a.1.5.20	Turbine Steam Supply	-	1,240	81	714	5,855	-	-	1,831	9,721	9,721	-	-	56,760	-	-	-	-	2,305,038	20,783	-
2a.1.5.21	Turbine Steam Supply (RCA)	-	685	23	191	1,567	-	-	614	3,079	3,079	-	-	15,189	-	-	-	-	616,829	11,698	-
2a.1.5.22	Turbine and Generator	-	119	4	39	318	-	-	118	598	598	-	-	3,082	-	-	-	-	125,162	2,001	-
2a.1.5.23	Turbine and Generator (Insulated)	-	44	1	7	58	-	-	29	140	140	-	-	565	-	-	-	-	22,940	696	-
2a.1.5	Totals	-	5,099	245	2,093	17,151	48	-	5,854	30,489	30,110	-	380	166,269	185	-	-	-	6,768,654	86,499	-
2a.1.6	Scaffolding in support of decommissioning	-	4,344	26	19	149	22	-	1,572	6,132	6,132	-	-	1,300	82	-	-	-	65,745	37,341	-
2a.1	Subtotal Period 2a Activity Costs	1,285	24,426	12,573	8,216	24,958	29,122	459	38,848	139,887	139,507	-	380	257,222	73,303	3,224	574	-	17,226,080	295,473	5,366
Period 2a Additional Costs																					
2a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	537	1,363	1,363	-	-	-	2,002	-	-	-	211,020	2,100	84
2a.2	Subtotal Period 2a Additional Costs	-	102	151	55	-	503	15	537	1,363	1,363	-	-	-	2,002	-	-	-	211,020	2,100	84
Period 2a Collateral Costs																					
2a.3.1	Process liquid waste	107	-	49	198	-	184	-	189	727	727	-	-	-	731	-	-	-	43,889	143	-
2a.3.2	Small tool allowance	-	318	-	-	-	-	-	67	385	346	-	38	-	-	-	-	-	-	-	-
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,160	244	1,404	-	1,404	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	107	318	49	198	-	184	1,160	500	2,516	1,074	1,404	38	-	731	-	-	-	43,889	143	-
Period 2a Period-Dependent Costs																					
2a.4.1	Decon supplies	89	-	-	-	-	-	-	31	120	120	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	685	96	781	781	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	157	22	179	161	-	18	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	2,113	-	-	-	-	-	742	2,856	2,856	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	3,658	-	-	-	-	-	771	4,428	4,428	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	-	104	39	-	342	-	143	628	628	-	-	-	5,524	-	-	-	110,482	201	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	1,962	414	2,376	2,376	-	-	-	-	-	-	-	-	-	-
2a.4.8	NRC ISFSI Fees	-	-	-	-	-	-	296	-	296	-	296	-	-	-	-	-	-	-	-	-
2a.4.9	NRC Fees	-	-	-	-	-	-	700	98	798	798	-	-	-	-	-	-	-	-	-	-
2a.4.10	Emergency Planning Fees	-	-	-	-	-	-	876	123	1,000	-	1,000	-	-	-	-	-	-	-	-	-
2a.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	352	74	427	-	427	-	-	-	-	-	-	-	-	-
2a.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,141	241	1,382	-	1,382	-	-	-	-	-	-	-	-	-
2a.4.13	ISFSI - Operating Costs	-	-	-	-	-	-	219	46	265	-	265	-	-	-	-	-	-	-	-	-
2a.4.14	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	4,531	955	5,486	-	5,486	-	-	-	-	-	-	-	-	-
2a.4.15	ISFSI - Fixed Costs	-	-	-	-	-	-	445	94	539	-	539	-	-	-	-	-	-	-	-	-
2a.4.16	Security Staff Cost	-	-	-	-	-	-	13,382	2,820	16,202	16,202	-	-	-	-	-	-	-	-	-	204,930
2a.4.17	DOC Staff Cost	-	-	-	-	-	-	20,180	4,253	24,433	24,433	-	-	-	-	-	-	-	-	-	246,240
2a.4.18	Utility Staff Cost	-	-	-	-	-	-	29,194	6,153	35,347	35,347	-	-	-	-	-	-	-	-	-	458,460
2a.4	Subtotal Period 2a Period-Dependent Costs	89	5,771	104	39	-	342	74,121	17,076	97,542	88,131	9,394	18	-	5,524	-	-	-	110,482	201	909,630
2a.0	TOTAL PERIOD 2a COST	1,481	30,617	12,877	8,508	24,958	30,151	75,755	56,961	241,309	230,074	10,798	436	257,222	81,561	3,224	574	-	17,591,480	297,917	915,080

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2b - Site Decontamination																					
Period 2b Direct Decommissioning Activities																					
Disposal of Plant Systems																					
2b.1.1.1	Capital Additions 85-2002 (Clean)	-	382	-	-	-	-	-	80	462	-	-	462	-	-	-	-	-	-	7,035	-
2b.1.1.2	Capital Additions 85-2002 (contaminated)	-	380	9	38	287	58	-	224	995	995	-	-	2,779	224	-	-	-	132,341	6,462	-
2b.1.1.3	Chemical & Volume Control	670	815	55	75	403	498	-	1,040	3,555	3,555	-	-	3,909	2,029	-	-	-	326,881	23,723	-
2b.1.1.4	Chemical & Volume Control (Insulated)	241	315	17	12	39	147	-	345	1,115	1,115	-	-	375	561	-	-	-	64,973	9,341	-
2b.1.1.5	Component Cooling Water	-	161	-	-	-	-	-	34	195	-	-	195	-	-	-	-	-	-	2,984	-
2b.1.1.6	Component Cooling Water (RCA)	-	462	13	107	877	-	-	372	1,831	1,831	-	-	8,505	-	-	-	-	345,395	7,753	-
2b.1.1.7	Compressed Air	-	100	-	-	-	-	-	21	122	-	-	122	-	-	-	-	-	-	1,881	-
2b.1.1.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	99	-
2b.1.1.9	Compressed Air (RCA Insulated)	-	23	0	1	11	-	-	11	46	46	-	-	108	-	-	-	-	4,393	387	-
2b.1.1.10	Compressed Air (RCA)	-	411	3	26	212	-	-	195	847	847	-	-	2,055	-	-	-	-	83,461	6,991	-
2b.1.1.11	Diesel Engine-Generator	-	116	-	-	-	-	-	24	141	-	-	141	-	-	-	-	-	-	2,089	-
2b.1.1.12	Diesel Engine-Generator (Insulated)	-	3	-	-	-	-	-	1	3	-	-	3	-	-	-	-	-	-	48	-
2b.1.1.13	Electrical (Clean)	-	2,645	-	-	-	-	-	557	3,203	-	-	3,203	-	-	-	-	-	-	47,918	-
2b.1.1.14	Electrical (Contaminated)	-	279	5	30	243	17	-	162	735	735	-	-	2,355	63	-	-	-	101,246	4,850	-
2b.1.1.15	Electrical (RCA)	-	1,691	30	256	2,103	-	-	1,095	5,176	5,176	-	-	20,389	-	-	-	-	828,008	28,569	-
2b.1.1.16	Fire Protection	-	293	10	91	750	-	-	282	1,426	1,426	-	-	7,268	-	-	-	-	295,145	4,992	-
2b.1.1.17	Gaseous Radwaste	-	102	5	9	61	34	-	63	273	273	-	-	587	132	-	-	-	35,376	1,724	-
2b.1.1.18	HVAC (Clean Insulated)	-	34	-	-	-	-	-	7	41	-	-	41	-	-	-	-	-	-	662	-
2b.1.1.19	HVAC (Clean)	-	356	-	-	-	-	-	75	431	-	-	431	-	-	-	-	-	-	6,878	-
2b.1.1.20	HVAC (Contaminated Insulated)	-	191	4	25	197	17	-	120	554	554	-	-	1,912	64	-	-	-	83,372	3,019	-
2b.1.1.21	HVAC (Contaminated)	-	849	22	125	970	124	-	576	2,665	2,665	-	-	9,399	474	-	-	-	423,748	13,623	-
2b.1.1.22	Liquid Radwaste	298	345	30	31	142	274	-	467	1,588	1,588	-	-	1,380	1,251	-	-	-	148,480	10,972	-
2b.1.1.23	Liquid Radwaste (Insulated)	24	32	2	1	2	18	-	35	115	115	-	-	23	67	-	-	-	6,908	948	-
2b.1.1.24	Lube Oil Distribution & Purification	-	211	5	42	342	-	-	156	755	755	-	-	3,315	-	-	-	-	134,627	3,487	-
2b.1.1.25	Make-up Water	-	208	-	-	-	-	-	44	251	-	-	251	-	-	-	-	-	-	3,794	-
2b.1.1.26	Make-up Water (Insulated)	-	20	-	-	-	-	-	4	24	-	-	24	-	-	-	-	-	-	376	-
2b.1.1.27	Make-up Water (RCA Insulated)	-	25	0	3	24	-	-	15	67	67	-	-	237	-	-	-	-	9,606	423	-
2b.1.1.28	Make-up Water (RCA)	-	126	2	17	138	-	-	77	361	361	-	-	1,340	-	-	-	-	54,432	2,103	-
2b.1.1.29	Mechanical Department Equipment	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	19	-
2b.1.1.30	Miscellaneous Reactor Coolant	17	101	4	5	30	31	-	67	256	256	-	-	288	124	-	-	-	22,203	1,982	-
2b.1.1.31	Nuclear Steam Supply Sampling	-	16	1	1	3	7	-	9	36	36	-	-	25	26	-	-	-	3,299	257	-
2b.1.1.32	Nuclear Steam Supply Sampling (Insulated	-	7	0	0	1	3	-	4	15	15	-	-	11	11	-	-	-	1,414	110	-
2b.1.1.33	Residual Heat Removal	265	236	55	67	305	583	-	560	2,071	2,071	-	-	2,957	2,219	-	-	-	317,012	5,170	-
2b.1.1.34	Safety Injection	-	98	4	11	76	31	-	64	284	284	-	-	734	121	-	-	-	40,197	1,726	-
2b.1.1.35	Safety Injection (Insulated)	-	4	0	0	3	2	-	3	12	12	-	-	24	7	-	-	-	1,614	70	-
2b.1.1.36	Safety Injection (RCA Insulated)	-	30	2	4	23	17	-	22	97	97	-	-	219	63	-	-	-	14,529	498	-
2b.1.1.37	Safety Injection (RCA)	-	250	17	33	203	150	-	193	845	845	-	-	1,971	571	-	-	-	130,758	4,112	-
2b.1.1.38	Service Cooling Water	-	118	-	-	-	-	-	25	142	-	-	142	-	-	-	-	-	-	2,186	-
2b.1.1.39	Service Cooling Water (RCA)	-	29	1	4	35	-	-	18	87	87	-	-	342	-	-	-	-	13,881	478	-
2b.1.1.40	Sewer System Expansion	-	40	-	-	-	-	-	8	49	-	-	49	-	-	-	-	-	-	746	-
2b.1.1	Totals	1,514	11,507	298	1,015	7,479	2,009	-	7,055	30,878	25,806	-	5,072	72,506	8,010	-	-	-	3,623,296	220,481	-
2b.1.2	Scaffolding in support of decommissioning	-	5,430	33	24	186	27	-	1,966	7,665	7,665	-	-	1,624	102	-	-	-	82,182	46,676	-
Decontamination of Site Buildings																					
2b.1.3.1	*Reactor	1,524	1,737	381	349	426	3,703	-	3,198	11,317	11,317	-	-	4,128	20,482	-	-	-	2,076,526	53,198	-
2b.1.3.2	Auxiliary	1,080	657	112	106	232	1,592	-	1,636	5,416	5,416	-	-	2,251	6,098	-	-	-	629,318	28,216	-
2b.1.3.3	Capital Additions 85-2004	345	150	24	21	30	345	-	430	1,345	1,345	-	-	288	1,320	-	-	-	128,360	8,143	-
2b.1.3.4	Containment Penetration Area	266	188	29	33	120	394	-	428	1,457	1,457	-	-	1,164	1,509	-	-	-	180,273	7,367	-
2b.1.3.5	Radwaste Storage	7	56	12	10	8	173	-	91	356	356	-	-	75	660	-	-	-	61,324	884	-
2b.1.3	Totals	3,222	2,788	558	519	816	6,206	-	5,782	19,891	19,891	-	-	7,907	30,069	-	-	-	3,075,801	97,808	-
2b.1	Subtotal Period 2b Activity Costs	4,736	19,725	888	1,558	8,480	8,242	-	14,803	58,434	53,362	-	5,072	82,037	38,181	-	-	-	6,781,279	364,965	-

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2b Collateral Costs																					
2b.3.1	Process liquid waste	224	-	185	758	-	956	-	679	2,803	2,803	-	-	-	2,749	-	-	-	227,668	536	-
2b.3.2	Small tool allowance	-	400	-	-	-	-	-	84	485	485	-	-	-	-	-	-	-	-	-	-
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	576	121	697	-	697	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	224	400	185	758	-	956	576	885	3,984	3,287	697	-	-	2,749	-	-	-	227,668	536	-
Period 2b Period-Dependent Costs																					
2b.4.1	Decon supplies	1,457	-	-	-	-	-	-	512	1,969	1,969	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	857	120	978	978	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	-	-	-	-	-	-	196	28	224	224	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	2,600	-	-	-	-	-	913	3,513	3,513	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	4,547	-	-	-	-	-	958	5,506	5,506	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	101	38	-	333	-	139	610	610	-	-	-	5,365	-	-	-	107,294	195	-
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,940	409	2,349	2,349	-	-	-	-	-	-	-	-	-	-
2b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	371	-	371	-	371	-	-	-	-	-	-	-	-	-
2b.4.9	NRC Fees	-	-	-	-	-	-	877	123	1,000	1,000	-	-	-	-	-	-	-	-	-	-
2b.4.10	Emergency Planning Fees	-	-	-	-	-	-	724	102	826	-	826	-	-	-	-	-	-	-	-	-
2b.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	1,232	260	1,492	-	1,492	-	-	-	-	-	-	-	-	-
2b.4.12	Spent Fuel Pool O&M	-	-	-	-	-	-	1,429	301	1,730	-	1,730	-	-	-	-	-	-	-	-	-
2b.4.13	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	374	79	452	452	-	-	-	-	-	-	-	-	-	-
2b.4.14	ISFSI - Operating Costs	-	-	-	-	-	-	274	58	332	-	332	-	-	-	-	-	-	-	-	-
2b.4.15	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	9,137	1,926	11,063	-	11,063	-	-	-	-	-	-	-	-	-
2b.4.16	ISFSI - Fixed Costs	-	-	-	-	-	-	557	117	675	-	675	-	-	-	-	-	-	-	-	-
2b.4.17	Security Staff Cost	-	-	-	-	-	-	16,757	3,532	20,289	20,289	-	-	-	-	-	-	-	-	-	256,614
2b.4.18	DOC Staff Cost	-	-	-	-	-	-	24,325	5,127	29,452	29,452	-	-	-	-	-	-	-	-	-	296,171
2b.4.19	Utility Staff Cost	-	-	-	-	-	-	35,045	7,386	42,431	42,431	-	-	-	-	-	-	-	-	-	549,743
2b.4	Subtotal Period 2b Period-Dependent Costs	1,457	7,147	101	38	-	333	94,096	22,088	125,260	108,771	16,489	-	-	5,365	-	-	-	107,294	195	1,102,529
2b.0	TOTAL PERIOD 2b COST	6,418	27,273	1,174	2,353	8,480	9,532	94,672	37,776	187,678	165,421	17,186	5,072	82,037	46,294	-	-	-	7,116,241	365,696	1,102,529
PERIOD 2c - Wet Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
Period 2c Collateral Costs																					
2c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	9,800	2,065	11,865	-	11,865	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	9,800	2,065	11,865	-	11,865	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	3,161	444	3,605	3,605	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	723	102	825	825	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	809	-	-	-	-	-	284	1,093	1,093	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	19	7	-	62	-	26	113	113	-	-	-	996	-	-	-	19,915	36	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	1,908	402	2,310	2,310	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC ISFSI Fees	-	-	-	-	-	-	1,367	-	1,367	-	1,367	-	-	-	-	-	-	-	-	-
2c.4.7	NRC Fees	-	-	-	-	-	-	1,224	172	1,395	1,395	-	-	-	-	-	-	-	-	-	-
2c.4.8	Emergency Planning Fees	-	-	-	-	-	-	2,671	375	3,047	-	3,047	-	-	-	-	-	-	-	-	-
2c.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	3,383	713	4,096	-	4,096	-	-	-	-	-	-	-	-	-
2c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	5,270	1,111	6,380	-	6,380	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	1,011	213	1,224	-	1,224	-	-	-	-	-	-	-	-	-
2c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	38,381	8,089	46,470	-	46,470	-	-	-	-	-	-	-	-	-
2c.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	2,055	433	2,488	-	2,488	-	-	-	-	-	-	-	-	-
2c.4.14	Security Staff Cost	-	-	-	-	-	-	52,323	11,027	63,350	63,350	-	-	-	-	-	-	-	-	-	796,620
2c.4.15	Utility Staff Cost	-	-	-	-	-	-	38,639	8,143	46,782	46,782	-	-	-	-	-	-	-	-	-	590,920
2c.4	Subtotal Period 2c Period-Dependent Costs	-	809	19	7	-	62	152,115	31,534	184,545	119,474	65,072	-	-	996	-	-	-	19,915	36	1,387,540
2c.0	TOTAL PERIOD 2c COST	-	809	19	7	-	62	161,915	33,599	196,411	119,474	76,937	-	-	996	-	-	-	19,915	36	1,387,540

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2d - Decontamination Following Wet Fuel Storage																					
Period 2d Direct Decommissioning Activities																					
2d.1.1	Remove spent fuel racks	477	47	136	34	-	656	-	608	1,958	1,958	-	-	-	2,496	-	-	-	221,587	962	-
Disposal of Plant Systems																					
2d.1.2.1	Electrical (Contaminated) - FHB	-	86	1	6	45	3	-	42	183	183	-	-	440	12	-	-	-	18,915	1,488	-
2d.1.2.2	Electrical (RCA)-FHB	-	521	6	53	434	-	-	287	1,301	1,301	-	-	4,211	-	-	-	-	171,029	8,801	-
2d.1.2.3	Fire Protection (RCA)	-	203	3	27	222	-	-	124	579	579	-	-	2,153	-	-	-	-	87,426	3,365	-
2d.1.2.4	HVAC (Contaminated) - FHB	-	190	4	27	212	17	-	124	573	573	-	-	2,055	65	-	-	-	89,234	3,027	-
2d.1.2.5	Spent Fuel Pit Cooling	-	72	22	26	119	222	-	137	597	597	-	-	1,156	844	-	-	-	121,824	1,291	-
2d.1.2.6	Spent Fuel Pit Cooling - FHB	-	98	24	28	129	238	-	154	671	671	-	-	1,246	907	-	-	-	131,056	1,753	-
2d.1.2	Totals	-	1,169	60	166	1,162	480	-	868	3,905	3,905	-	-	11,260	1,828	-	-	-	619,483	19,725	-
Decontamination of Site Buildings																					
2d.1.3.1	Fuel Handling	665	723	39	48	206	510	-	959	3,150	3,150	-	-	1,996	1,965	-	-	-	253,465	23,531	-
2d.1.3	Totals	665	723	39	48	206	510	-	959	3,150	3,150	-	-	1,996	1,965	-	-	-	253,465	23,531	-
2d.1.4	Scaffolding in support of decommissioning	-	1,086	7	5	37	5	-	393	1,533	1,533	-	-	325	20	-	-	-	16,436	9,335	-
2d.1	Subtotal Period 2d Activity Costs	1,142	3,024	242	253	1,404	1,652	-	2,828	10,546	10,546	-	-	13,581	6,310	-	-	-	1,110,972	53,554	-
Period 2d Additional Costs																					
2d.2.1	License Termination Survey Planning	-	-	-	-	-	-	669	282	951	951	-	-	-	-	-	-	-	-	-	6,240
2d.2	Subtotal Period 2d Additional Costs	-	-	-	-	-	-	669	282	951	951	-	-	-	-	-	-	-	-	-	6,240
Period 2d Collateral Costs																					
2d.3.1	Process liquid waste	116	-	53	215	-	200	-	204	787	787	-	-	-	793	-	-	-	47,568	155	-
2d.3.2	Small tool allowance	-	68	-	-	-	-	-	14	83	83	-	-	-	-	-	-	-	-	-	-
2d.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	99	-	219	1,232	1,232	-	-	6,000	378	-	-	-	303,548	88	-
2d.3	Subtotal Period 2d Collateral Costs	116	68	174	322	686	299	-	438	2,102	2,102	-	-	6,000	1,171	-	-	-	351,117	243	-
Period 2d Period-Dependent Costs																					
2d.4.1	Decon supplies	210	-	-	-	-	-	-	74	284	284	-	-	-	-	-	-	-	-	-	-
2d.4.2	Insurance	-	-	-	-	-	-	177	25	202	202	-	-	-	-	-	-	-	-	-	-
2d.4.3	Property taxes	-	-	-	-	-	-	46	7	53	53	-	-	-	-	-	-	-	-	-	-
2d.4.4	Health physics supplies	-	445	-	-	-	-	-	156	602	602	-	-	-	-	-	-	-	-	-	-
2d.4.5	Heavy equipment rental	-	1,076	-	-	-	-	-	227	1,303	1,303	-	-	-	-	-	-	-	-	-	-
2d.4.6	Disposal of DAW generated	-	-	35	13	-	115	-	48	212	212	-	-	-	1,862	-	-	-	37,235	68	-
2d.4.7	Plant energy budget	-	-	-	-	-	-	245	52	296	296	-	-	-	-	-	-	-	-	-	-
2d.4.8	NRC ISFSI Fees	-	-	-	-	-	-	88	-	88	-	88	-	-	-	-	-	-	-	-	-
2d.4.9	NRC Fees	-	-	-	-	-	-	207	29	237	237	-	-	-	-	-	-	-	-	-	-
2d.4.10	Emergency Planning Fees	-	-	-	-	-	-	171	24	196	-	196	-	-	-	-	-	-	-	-	-
2d.4.11	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	207	44	251	-	251	-	-	-	-	-	-	-	-	-
2d.4.12	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	177	37	214	214	-	-	-	-	-	-	-	-	-	-
2d.4.13	ISFSI - Operating Costs	-	-	-	-	-	-	65	14	79	-	79	-	-	-	-	-	-	-	-	-
2d.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	132	28	160	-	160	-	-	-	-	-	-	-	-	-
2d.4.15	Security Staff Cost	-	-	-	-	-	-	2,143	452	2,594	2,594	-	-	-	-	-	-	-	-	-	31,920
2d.4.16	DOC Staff Cost	-	-	-	-	-	-	3,931	828	4,759	4,759	-	-	-	-	-	-	-	-	-	48,000
2d.4.17	Utility Staff Cost	-	-	-	-	-	-	6,066	1,278	7,344	7,344	-	-	-	-	-	-	-	-	-	91,680
2d.4	Subtotal Period 2d Period-Dependent Costs	210	1,521	35	13	-	115	13,655	3,322	18,873	18,100	772	-	-	1,862	-	-	-	37,235	68	171,600
2d.0	TOTAL PERIOD 2d COST	1,468	4,614	451	588	2,090	2,066	14,324	6,870	32,471	31,699	772	-	19,581	9,342	-	-	-	1,499,323	53,865	177,840

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 2e - License Termination																					
Period 2e Direct Decommissioning Activities																					
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	64	217	217	-	-	-	-	-	-	-	-	-	-
2e.1.2	Terminate license									a											
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	153	64	217	217	-	-	-	-	-	-	-	-	-	-
Period 2e Additional Costs																					
2e.2.1	License Termination Survey	-	-	-	-	-	-	11,808	4,977	16,785	16,785	-	-	-	-	-	-	-	-	209,457	3,120
2e.2	Subtotal Period 2e Additional Costs	-	-	-	-	-	-	11,808	4,977	16,785	16,785	-	-	-	-	-	-	-	-	209,457	3,120
Period 2e Collateral Costs																					
2e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,395	294	1,689	1,689	-	-	-	-	-	-	-	-	-	-
2e.3	Subtotal Period 2e Collateral Costs	-	-	-	-	-	-	1,395	294	1,689	1,689	-	-	-	-	-	-	-	-	-	-
Period 2e Period-Dependent Costs																					
2e.4.1	Insurance	-	-	-	-	-	-	290	41	330	330	-	-	-	-	-	-	-	-	-	-
2e.4.2	Property taxes	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	-
2e.4.3	Health physics supplies	-	1,242	-	-	-	-	-	436	1,679	1,679	-	-	-	-	-	-	-	-	-	-
2e.4.4	Disposal of DAW generated	-	-	7	2	-	22	-	9	40	40	-	-	-	355	-	-	-	7,097	13	-
2e.4.5	Plant energy budget	-	-	-	-	-	-	200	42	243	243	-	-	-	-	-	-	-	-	-	-
2e.4.6	NRC ISFSI Fees	-	-	-	-	-	-	144	-	144	-	144	-	-	-	-	-	-	-	-	-
2e.4.7	NRC Fees	-	-	-	-	-	-	355	50	405	405	-	-	-	-	-	-	-	-	-	-
2e.4.8	Emergency Planning Fees	-	-	-	-	-	-	281	39	320	-	320	-	-	-	-	-	-	-	-	-
2e.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	339	71	410	-	410	-	-	-	-	-	-	-	-	-
2e.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	106	22	129	-	129	-	-	-	-	-	-	-	-	-
2e.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	216	45	261	-	261	-	-	-	-	-	-	-	-	-
2e.4.12	Security Staff Cost	-	-	-	-	-	-	3,433	723	4,156	4,156	-	-	-	-	-	-	-	-	-	51,071
2e.4.13	DOC Staff Cost	-	-	-	-	-	-	4,840	1,020	5,860	5,860	-	-	-	-	-	-	-	-	-	57,357
2e.4.14	Utility Staff Cost	-	-	-	-	-	-	5,631	1,187	6,817	6,817	-	-	-	-	-	-	-	-	-	80,929
2e.4	Subtotal Period 2e Period-Dependent Costs	-	1,242	7	2	-	22	15,910	3,698	20,881	19,617	1,264	-	-	355	-	-	-	7,097	13	189,357
2e.0	TOTAL PERIOD 2e COST	-	1,242	7	2	-	22	29,265	9,033	39,572	38,308	1,264	-	-	355	-	-	-	7,097	209,470	192,477
PERIOD 2 TOTALS		9,367	64,556	14,528	11,458	35,529	41,833	375,931	144,239	697,441	584,976	106,957	5,508	358,841	138,548	3,224	574	-	26,234,050	926,984	3,775,465
PERIOD 3b - Site Restoration																					
Period 3b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
3b.1.1.1	*Reactor	-	6,873	-	-	-	-	-	1,449	8,322	-	-	8,322	-	-	-	-	-	-	74,901	-
3b.1.1.2	Administration	-	960	-	-	-	-	-	202	1,163	-	-	1,163	-	-	-	-	-	-	10,358	-
3b.1.1.3	Auxiliary	-	5,977	-	-	-	-	-	1,260	7,237	-	-	7,237	-	-	-	-	-	-	64,471	-
3b.1.1.4	Capital Additions 85-2004	-	3,915	-	-	-	-	-	825	4,740	-	-	4,740	-	-	-	-	-	-	47,403	-
3b.1.1.5	Chemical Storage	-	4	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	46	-
3b.1.1.6	Chlorination	-	8	-	-	-	-	-	2	10	-	-	10	-	-	-	-	-	-	99	-
3b.1.1.7	Circulating Water Tunnels	-	1,008	-	-	-	-	-	213	1,221	-	-	1,221	-	-	-	-	-	-	12,071	-
3b.1.1.8	Cold Machine Shop	-	357	-	-	-	-	-	75	433	-	-	433	-	-	-	-	-	-	3,785	-
3b.1.1.9	Communication	-	4	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	44	-
3b.1.1.10	Condensate Polishing/Technical Support	-	763	-	-	-	-	-	161	923	-	-	923	-	-	-	-	-	-	9,300	-
3b.1.1.11	Containment Penetration Area	-	615	-	-	-	-	-	130	745	-	-	745	-	-	-	-	-	-	6,565	-
3b.1.1.12	Discharge Structure	-	854	-	-	-	-	-	180	1,034	-	-	1,034	-	-	-	-	-	-	8,317	-
3b.1.1.13	Fabrication Shop	-	107	-	-	-	-	-	23	130	-	-	130	-	-	-	-	-	-	1,223	-
3b.1.1.14	Fire Pump House	-	5	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	55	-
3b.1.1.15	Hazardous Waste Storage Facility	-	35	-	-	-	-	-	7	42	-	-	42	-	-	-	-	-	-	430	-
3b.1.1.16	Intake Structure	-	4,868	-	-	-	-	-	1,026	5,893	-	-	5,893	-	-	-	-	-	-	46,364	-
3b.1.1.17	Maintenance Shop	-	330	-	-	-	-	-	69	399	-	-	399	-	-	-	-	-	-	3,444	-

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3b Demolition of Remaining Site Buildings (continued)																					
3b.1.1.18	Miscellaneous Structures	-	57	-	-	-	-	-	12	69	-	-	69	-	-	-	-	-	-	673	-
3b.1.1.19	NPO Permanent Warehouse	-	1,221	-	-	-	-	-	257	1,478	-	-	1,478	-	-	-	-	-	-	14,093	-
3b.1.1.20	Ponds	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	24	-
3b.1.1.21	Portable Fire Pump & Fuel Cart	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	14	-
3b.1.1.22	Pretreatment	-	9	-	-	-	-	-	2	11	-	-	11	-	-	-	-	-	-	108	-
3b.1.1.23	Radwaste Storage	-	1,595	-	-	-	-	-	336	1,931	-	-	1,931	-	-	-	-	-	-	17,854	-
3b.1.1.24	Radwaste Storage Facility (Additional)	-	42	-	-	-	-	-	9	51	-	-	51	-	-	-	-	-	-	662	-
3b.1.1.25	Rotor Warehouse	-	742	-	-	-	-	-	156	898	-	-	898	-	-	-	-	-	-	9,938	-
3b.1.1.26	Security	-	303	-	-	-	-	-	64	366	-	-	366	-	-	-	-	-	-	3,944	-
3b.1.1.27	Security Buildings (additional)	-	46	-	-	-	-	-	10	56	-	-	56	-	-	-	-	-	-	722	-
3b.1.1.28	Simulator	-	370	-	-	-	-	-	78	448	-	-	448	-	-	-	-	-	-	4,191	-
3b.1.1.29	Steam Generator Storage Facility	-	821	-	-	-	-	-	173	994	-	-	994	-	-	-	-	-	-	8,888	-
3b.1.1.30	Telephone Terminal	-	2	-	-	-	-	-	1	3	-	-	3	-	-	-	-	-	-	28	-
3b.1.1.31	Turbine	-	4,940	-	-	-	-	-	1,041	5,981	-	-	5,981	-	-	-	-	-	-	57,743	-
3b.1.1.32	Turbine Pedestal	-	1,212	-	-	-	-	-	255	1,467	-	-	1,467	-	-	-	-	-	-	11,300	-
3b.1.1.33	Vehicle Maintenance	-	30	-	-	-	-	-	6	37	-	-	37	-	-	-	-	-	-	367	-
3b.1.1.34	Waste Water Holding & Treatment Facility	-	20	-	-	-	-	-	4	24	-	-	24	-	-	-	-	-	-	238	-
3b.1.1.35	Fuel Handling	-	1,689	-	-	-	-	-	356	2,045	-	-	2,045	-	-	-	-	-	-	16,750	-
3b.1.1	Totals	-	39,784	-	-	-	-	-	8,384	48,168	-	-	48,168	-	-	-	-	-	-	436,410	-
Site Closeout Activities																					
3b.1.2	Remove Rubble	-	1,470	-	-	-	-	-	310	1,779	-	-	1,779	-	-	-	-	-	-	8,191	-
3b.1.3	Grade & landscape site	-	2,272	-	-	-	-	-	479	2,751	-	-	2,751	-	-	-	-	-	-	4,587	-
3b.1.4	Final report to NRC	-	-	-	-	-	-	80	17	97	97	-	-	-	-	-	-	-	-	-	667
3b.1	Subtotal Period 3b Activity Costs	-	43,526	-	-	-	-	80	9,190	52,795	97	-	52,699	-	-	-	-	-	-	449,187	667
Period 3b Additional Costs																					
3b.2.1	Concrete Crushing	-	8,467	-	7	-	-	-	1,786	10,261	-	-	10,261	-	-	-	-	-	-	37,686	-
3b.2.2	Breakwater Demolition and Removal	-	33,893	-	-	-	-	-	11,905	45,798	-	-	45,798	-	-	-	-	-	-	128,379	46,649
3b.2.3	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	92	530	-	-	530	-	-	-	-	-	-	4,004	-
3b.2	Subtotal Period 3b Additional Costs	-	42,798	-	7	-	-	-	13,783	56,589	-	-	56,589	-	-	-	-	-	-	170,069	46,649
Period 3b Collateral Costs																					
3b.3.1	Small tool allowance	-	797	-	-	-	-	-	168	965	-	-	965	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	797	-	-	-	-	-	168	965	-	-	965	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Insurance	-	-	-	-	-	-	787	111	898	-	898	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	207	29	236	-	236	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	6,420	-	-	-	-	-	1,353	7,772	-	-	7,772	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	273	57	330	-	-	330	-	-	-	-	-	-	-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	391	-	391	-	391	-	-	-	-	-	-	-	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	763	107	870	-	870	-	-	-	-	-	-	-	-	-
3b.4.7	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	921	194	1,115	-	1,115	-	-	-	-	-	-	-	-	-
3b.4.8	ISFSI - Operating Costs	-	-	-	-	-	-	289	61	350	-	350	-	-	-	-	-	-	-	-	-
3b.4.9	ISFSI - Fixed Costs	-	-	-	-	-	-	587	124	711	-	711	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	9,337	1,968	11,305	0	4,748	6,557	-	-	-	-	-	-	-	138,914
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	12,616	2,659	15,275	-	-	15,275	-	-	-	-	-	-	-	145,326
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	7,795	1,643	9,438	0	1,133	8,305	-	-	-	-	-	-	-	116,474
3b.4	Subtotal Period 3b Period-Dependent Costs	-	6,420	-	-	-	-	33,965	8,305	48,690	0	10,451	38,239	-	-	-	-	-	-	-	400,714
3b.0	TOTAL PERIOD 3b COST	-	93,541	-	7	-	-	34,045	31,447	159,040	97	10,451	148,492	-	-	-	-	-	-	619,256	448,030

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 3c - Fuel Storage Operations/Shipping																					
Period 3c Direct Decommissioning Activities																					
Period 3c Collateral Costs																					
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs																					
3c.4.1	Insurance	-	-	-	-	-	-	4,184	588	4,772	-	4,772	-	-	-	-	-	-	-	-	-
3c.4.2	Property taxes	-	-	-	-	-	-	1,098	154	1,252	-	1,252	-	-	-	-	-	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	2,075	-	2,075	-	2,075	-	-	-	-	-	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	4,055	570	4,625	-	4,625	-	-	-	-	-	-	-	-	-
3c.4.6	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,865	1,025	5,891	-	5,891	-	-	-	-	-	-	-	-	-
3c.4.7	ISFSI - Operating Costs	-	-	-	-	-	-	1,534	323	1,857	-	1,857	-	-	-	-	-	-	-	-	-
3c.4.8	ISFSI - Fixed Costs	-	-	-	-	-	-	3,119	657	3,777	-	3,777	-	-	-	-	-	-	-	-	-
3c.4.9	Security Staff Cost	-	-	-	-	-	-	20,852	4,394	25,246	-	25,246	-	-	-	-	-	-	-	-	306,566
3c.4.10	Utility Staff Cost	-	-	-	-	-	-	5,130	1,081	6,212	-	6,212	-	-	-	-	-	-	-	-	76,755
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	46,913	8,794	55,706	-	55,706	-	-	-	-	-	-	-	-	383,321
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	46,913	8,794	55,706	-	55,706	-	-	-	-	-	-	-	-	383,321
PERIOD 3d - GTCC shipping																					
Period 3d Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	300	-	-	8,952	-	1,929	11,181	11,181	-	-	-	-	-	-	433	85,510	-	-
3d.1.1	Totals	-	-	300	-	-	8,952	-	1,929	11,181	11,181	-	-	-	-	-	-	433	85,510	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	300	-	-	8,952	-	1,929	11,181	11,181	-	-	-	-	-	-	433	85,510	-	-
Period 3d Collateral Costs																					
3d.3	Subtotal Period 3d Collateral Costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Period 3d Period-Dependent Costs																					
3d.4.1	Insurance	-	-	-	-	-	-	15	2	17	-	17	-	-	-	-	-	-	-	-	-
3d.4.2	Property taxes	-	-	-	-	-	-	4	1	4	-	4	-	-	-	-	-	-	-	-	-
3d.4.3	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	7	-	7	-	7	-	-	-	-	-	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	14	2	16	-	16	-	-	-	-	-	-	-	-	-
3d.4.6	ISFSI - Operating Costs	-	-	-	-	-	-	5	1	7	-	7	-	-	-	-	-	-	-	-	-
3d.4.7	ISFSI - Fixed Costs	-	-	-	-	-	-	11	2	13	-	13	-	-	-	-	-	-	-	-	-
3d.4.8	Security Staff Cost	-	-	-	-	-	-	73	15	89	-	89	-	-	-	-	-	-	-	-	1,080
3d.4.9	Utility Staff Cost	-	-	-	-	-	-	18	4	22	-	22	-	-	-	-	-	-	-	-	270
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	148	27	175	-	175	-	-	-	-	-	-	-	-	1,350
3d.0	TOTAL PERIOD 3d COST	-	-	300	-	-	8,952	148	1,956	11,357	11,181	175	-	-	-	-	-	433	85,510	-	1,350
PERIOD 3e - ISFSI Decontamination																					
Period 3e Direct Decommissioning Activities																					
Period 3e Additional Costs																					
3e.2.1	ISFSI License Termination	-	1,059	4	100	-	387	789	689	3,028	-	3,028	-	-	6,239	-	-	-	748,943	15,356	1,280
3e.2	Subtotal Period 3e Additional Costs	-	1,059	4	100	-	387	789	689	3,028	-	3,028	-	-	6,239	-	-	-	748,943	15,356	1,280

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3e Collateral Costs																					
3e.3.1	Small tool allowance	-	14	-	-	-	-	-	3	17	-	17	-	-	-	-	-	-	-	-	-
3e.3	Subtotal Period 3e Collateral Costs	-	14	-	-	-	-	-	3	17	-	17	-	-	-	-	-	-	-	-	-
Period 3e Period-Dependent Costs																					
3e.4.1	Insurance	-	-	-	-	-	-	127	18	145	-	145	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	33	5	38	-	38	-	-	-	-	-	-	-	-	-
3e.4.3	Heavy equipment rental	-	309	-	-	-	-	-	65	375	-	375	-	-	-	-	-	-	-	-	-
3e.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3e.4.5	Security Staff Cost	-	-	-	-	-	-	172	36	208	-	208	-	-	-	-	-	-	-	-	2,510
3e.4.6	Utility Staff Cost	-	-	-	-	-	-	129	27	156	-	156	-	-	-	-	-	-	-	-	1,901
3e.4	Subtotal Period 3e Period-Dependent Costs	-	309	-	-	-	-	461	151	922	-	922	-	-	-	-	-	-	-	-	4,411
3e.0	TOTAL PERIOD 3e COST	-	1,383	4	100	-	387	1,250	843	3,967	-	3,967	-	-	6,239	-	-	-	748,943	15,356	5,691
PERIOD 3f - ISFSI Site Restoration																					
Period 3f Direct Decommissioning Activities																					
Period 3f Additional Costs																					
3f.2.1	ISFSI Demolition and Site Restoration	-	562	-	-	-	-	24	123	709	-	709	-	-	-	-	-	-	-	3,446	80
3f.2	Subtotal Period 3f Additional Costs	-	562	-	-	-	-	24	123	709	-	709	-	-	-	-	-	-	-	3,446	80
Period 3f Collateral Costs																					
3f.3.1	Small tool allowance	-	4	-	-	-	-	-	1	5	-	5	-	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	4	-	-	-	-	-	1	5	-	5	-	-	-	-	-	-	-	-	-
Period 3f Period-Dependent Costs																					
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	17	2	19	-	19	-	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	103	-	-	-	-	-	22	125	-	125	-	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.5	Security Staff Cost	-	-	-	-	-	-	86	18	105	-	105	-	-	-	-	-	-	-	-	1,265
3f.4.6	Utility Staff Cost	-	-	-	-	-	-	54	11	66	-	66	-	-	-	-	-	-	-	-	784
3f.4	Subtotal Period 3f Period-Dependent Costs	-	103	-	-	-	-	158	54	314	-	314	-	-	-	-	-	-	-	-	2,050
3f.0	TOTAL PERIOD 3f COST	-	669	-	-	-	-	181	178	1,028	-	1,028	-	-	-	-	-	-	-	3,446	2,130
PERIOD 3 TOTALS		-	95,592	304	107	-	9,339	82,537	43,217	231,097	11,278	71,327	148,492	-	6,239	-	-	433	834,453	638,058	840,522

Table C-2
Diablo Canyon Unit 2
DECON Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
TOTAL COST TO DECOMMISSION		13,430	162,600	15,038	12,363	35,529	58,267	548,492	211,479	1,057,198	709,740	192,789	154,668	358,841	146,080	5,645	574	433	27,379,120	1,577,382	5,470,697

TOTAL COST TO DECOMMISSION WITH 25.01% CONTINGENCY:	$1,057,198	thousands of 2008 dollars
TOTAL NRC LICENSE TERMINATION COST IS 67.13% OR:	$709,740	thousands of 2008 dollars
SPENT FUEL MANAGEMENT COST IS 18.24% OR:	$192,789	thousands of 2008 dollars
NON-NUCLEAR DEMOLITION COST IS 14.63% OR:	$154,668	thousands of 2008 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	152,299	Cubic Feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	433	Cubic Feet
TOTAL SCRAP METAL REMOVED:	76,605	Tons
TOTAL CRAFT LABOR REQUIREMENTS:	1,577,382	Man-hours

End Notes:
n/a - indicates that this activity not charged as decommissioning expense.
a - indicates that this activity performed by decommissioning staff.
0 - indicates that this value is less than 0.5 but is non-zero.
a cell containing " - " indicates a zero value

APPENDIX D

DETAILED COST ANALYSIS

SAFSTOR

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1a - Shutdown through Transition																					
Period 1a Direct Decommissioning Activities																					
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	414	175	589	589	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	156	33	189	189	-	-	-	-	-	-	-	-	-	1,300
1a.1.3	Notification of Cessation of Operations									a											
1a.1.4	Remove fuel & source material									n/a											
1a.1.5	Notification of Permanent Defueling									a											
1a.1.6	Deactivate plant systems & process waste									a											
1a.1.7	Prepare and submit PSDAR	-	-	-	-	-	-	240	51	291	291	-	-	-	-	-	-	-	-	-	2,000
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	156	33	189	189	-	-	-	-	-	-	-	-	-	1,300
1a.1.9	Perform detailed rad survey									a											
1a.1.10	Estimate by-product inventory	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1a.1.11	End product description	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	180	38	218	218	-	-	-	-	-	-	-	-	-	1,500
1a.1.13	Define major work sequence	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
1a.1.14	Perform SER and EA	-	-	-	-	-	-	372	79	450	450	-	-	-	-	-	-	-	-	-	3,100
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	599	127	726	726	-	-	-	-	-	-	-	-	-	5,000
Activity Specifications																					
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	590	125	715	715	-	-	-	-	-	-	-	-	-	4,920
1a.1.16.2	Plant systems	-	-	-	-	-	-	500	106	605	605	-	-	-	-	-	-	-	-	-	4,167
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	374	79	453	453	-	-	-	-	-	-	-	-	-	3,120
1a.1.16.4	Waste management	-	-	-	-	-	-	240	51	291	291	-	-	-	-	-	-	-	-	-	2,000
1a.1.16.5	Facility and site dormancy	-	-	-	-	-	-	240	51	291	291	-	-	-	-	-	-	-	-	-	2,000
1a.1.16	Total	-	-	-	-	-	-	1,943	411	2,354	2,354	-	-	-	-	-	-	-	-	-	16,207
Detailed Work Procedures																					
1a.1.17.1	Plant systems	-	-	-	-	-	-	142	30	172	172	-	-	-	-	-	-	-	-	-	1,183
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	144	30	174	174	-	-	-	-	-	-	-	-	-	1,200
1a.1.17	Total	-	-	-	-	-	-	286	60	346	346	-	-	-	-	-	-	-	-	-	2,383
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	12	3	15	15	-	-	-	-	-	-	-	-	-	100
1a.1.19	Drain/de-energize non-cont. systems									a											
1a.1.20	Drain & dry NSSS									a											
1a.1.21	Drain/de-energize contaminated systems									a											
1a.1.22	Decon/secure contaminated systems									a											
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	4,717	1,086	5,802	5,802	-	-	-	-	-	-	-	-	-	35,690
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	836	177	1,012	-	1,012	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	836	177	1,012	-	1,012	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	1,195	169	1,363	1,363	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	101	14	115	115	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	486	-	-	-	-	-	171	658	658	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	104	593	593	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	11	4	-	38	-	16	69	69	-	-	-	610	-	-	-	12,190	22	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	281	1,611	1,611	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	159	-	159	-	159	-	-	-	-	-	-	-	-	-
1a.4.8	NRC Fees	-	-	-	-	-	-	706	100	805	805	-	-	-	-	-	-	-	-	-	-
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	177	1,435	-	1,435	-	-	-	-	-	-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	155	890	-	890	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	141	30	171	-	171	-	-	-	-	-	-	-	-	-

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1a Period-Dependent Costs (continued)																					
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	1,594	337	1,932	-	1,932	-	-	-	-	-	-	-	-	-
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	239	51	290	-	290	-	-	-	-	-	-	-	-	-
1a.4.14	Security Staff Cost	-	-	-	-	-	-	775	164	939	939	-	-	-	-	-	-	-	-	-	12,264
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	26,403	5,587	31,990	31,990	-	-	-	-	-	-	-	-	-	423,400
1a.4	Subtotal Period 1a Period-Dependent Costs	-	976	11	4	-	38	34,635	7,357	43,021	38,145	4,877	-	-	610	-	-	-	12,190	22	435,664
1a.0	TOTAL PERIOD 1a COST	-	976	11	4	-	38	40,187	8,620	49,836	43,947	5,889	-	-	610	-	-	-	12,190	22	471,554
PERIOD 1b - SAFSTOR Limited DECON Activities																					
Period 1b Direct Decommissioning Activities																					
Decontamination of Site Buildings																					
1b.1.1.1	*Reactor	1,501	-	-	-	-	-	-	1,059	2,559	2,251	-	308	-	-	-	-	-	-	26,109	-
1b.1.1.2	Containment Penetration Area	250	-	-	-	-	-	-	176	426	374	-	51	-	-	-	-	-	-	4,381	-
1b.1.1.3	Fuel Handling	639	-	-	-	-	-	-	451	1,089	958	-	131	-	-	-	-	-	-	10,962	-
1b.1.1	Totals	2,389	-	-	-	-	-	-	1,685	4,074	3,583	-	491	-	-	-	-	-	-	41,452	-
1b.1	Subtotal Period 1b Activity Costs	2,389	-	-	-	-	-	-	1,685	4,074	3,583	-	491	-	-	-	-	-	-	41,452	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	935	-	-	-	-	-	-	198	1,133	1,133	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process liquid waste	165	-	75	304	-	286	-	292	1,122	1,122	-	-	-	1,122	-	-	-	67,311	219	-
1b.3.3	Small tool allowance	-	46	-	-	-	-	-	10	56	56	-	-	-	-	-	-	-	-	-	-
1b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	252	53	305	-	305	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,100	46	75	304	-	286	252	553	2,617	2,311	305	-	-	1,122	-	-	-	67,311	219	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	850	-	-	-	-	-	-	300	1,149	1,149	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	301	42	344	344	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	25	4	29	29	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	303	-	-	-	-	-	107	410	410	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	123	-	-	-	-	-	26	150	150	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	10	4	-	34	-	14	63	63	-	-	-	556	-	-	-	11,126	20	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	335	71	406	406	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
1b.4.9	NRC Fees	-	-	-	-	-	-	178	25	203	203	-	-	-	-	-	-	-	-	-	-
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	187	26	214	-	214	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	185	39	224	-	224	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI - Operating Costs	-	-	-	-	-	-	36	8	43	-	43	-	-	-	-	-	-	-	-	-
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	648	137	785	-	785	-	-	-	-	-	-	-	-	-
1b.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	72	15	87	-	87	-	-	-	-	-	-	-	-	-
1b.4.15	Security Staff Cost	-	-	-	-	-	-	195	41	237	237	-	-	-	-	-	-	-	-	-	3,091
1b.4.16	Utility Staff Cost	-	-	-	-	-	-	5,349	1,132	6,481	6,481	-	-	-	-	-	-	-	-	-	87,269
1b.4	Subtotal Period 1b Period-Dependent Costs	850	426	10	4	-	34	7,561	1,988	10,874	9,472	1,402	-	-	556	-	-	-	11,126	20	90,360
1b.0	TOTAL PERIOD 1b COST	4,339	473	86	307	-	321	7,813	4,226	17,564	15,366	1,707	491	-	1,678	-	-	-	78,437	41,691	90,360
PERIOD 1c - Preparations for SAFSTOR Dormancy																					
Period 1c Direct Decommissioning Activities																					
1c.1.1	Prepare support equipment for storage	-	431	-	-	-	-	-	91	522	522	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	42	-	-	-	-	-	9	50	50	-	-	-	-	-	-	-	-	700	-
1c.1.3	Interim survey prior to dormancy	-	-	-	-	-	-	733	310	1,043	1,043	-	-	-	-	-	-	-	-	12,834	-
1c.1.4	Secure building accesses									a											

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1c Direct Decommissioning Activities (continued)																					
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	70	15	85	85	-	-	-	-	-	-	-	-	-	583
1c.1	Subtotal Period 1c Activity Costs	-	472	-	-	-	-	803	425	1,700	1,700	-	-	-	-	-	-	-	-	16,534	583
Period 1c Additional Costs																					
1c.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	9,407	1,991	11,398	11,398	-	-	-	-	-	-	-	-	-	-
1c.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	125	715	715	-	-	-	-	-	-	-	-	-	-
1c.2.3	Mixed Waste Management	-	-	-	-	-	-	912	193	1,104	1,104	-	-	-	-	-	-	-	-	-	-
1c.2	Subtotal Period 1c Additional Costs	-	-	-	-	-	-	10,909	2,309	13,218	13,218	-	-	-	-	-	-	-	-	-	-
Period 1c Collateral Costs																					
1c.3.1	Process liquid waste	208	-	95	383	-	361	-	368	1,414	1,414	-	-	-	1,415	-	-	-	84,876	276	-
1c.3.2	Small tool allowance	-	5	-	-	-	-	-	1	5	5	-	-	-	-	-	-	-	-	-	-
1c.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	244	52	295	-	295	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	208	5	95	383	-	361	244	421	1,715	1,420	295	-	-	1,415	-	-	-	84,876	276	-
Period 1c Period-Dependent Costs																					
1c.4.1	Insurance	-	-	-	-	-	-	291	41	332	332	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	25	3	28	28	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	187	-	-	-	-	-	66	253	253	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	119	-	-	-	-	-	25	145	145	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	3	1	-	9	-	4	16	16	-	-	-	138	-	-	-	2,755	5	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	324	69	393	393	-	-	-	-	-	-	-	-	-	-
1c.4.7	NRC ISFSI Fees	-	-	-	-	-	-	46	-	46	-	46	-	-	-	-	-	-	-	-	-
1c.4.8	NRC Fees	-	-	-	-	-	-	172	24	196	196	-	-	-	-	-	-	-	-	-	-
1c.4.9	Emergency Planning Fees	-	-	-	-	-	-	181	26	207	-	207	-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	179	38	217	-	217	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	34	7	42	-	42	-	-	-	-	-	-	-	-	-
1c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	930	197	1,127	-	1,127	-	-	-	-	-	-	-	-	-
1c.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	70	15	85	-	85	-	-	-	-	-	-	-	-	-
1c.4.14	Security Staff Cost	-	-	-	-	-	-	189	40	229	229	-	-	-	-	-	-	-	-	-	2,990
1c.4.15	Utility Staff Cost	-	-	-	-	-	-	5,175	1,095	6,270	6,270	-	-	-	-	-	-	-	-	-	84,423
1c.4	Subtotal Period 1c Period-Dependent Costs	-	307	3	1	-	9	7,617	1,650	9,586	7,862	1,724	-	-	138	-	-	-	2,755	5	87,413
1c.0	TOTAL PERIOD 1c COST	208	784	98	384	-	369	19,573	4,804	26,219	24,200	2,019	-	-	1,552	-	-	-	87,631	16,815	87,997
PERIOD 1 TOTALS		4,546	2,232	195	695	-	728	67,573	17,650	93,620	83,513	9,616	491	-	3,840	-	-	-	178,258	58,528	649,910
PERIOD 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																					
Period 2a Direct Decommissioning Activities																					
2a.1.1	Quarterly Inspection									a											
2a.1.2	Semi-annual environmental survey									a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	1,342	473	1,816	-	1,816	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	1,342	473	1,816	-	1,816	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	12,357	2,615	14,973	-	14,973	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	12,357	2,615	14,973	-	14,973	-	-	-	-	-	-	-	-	-
Period 2a Period-Dependent Costs																					
2a.4.1	Insurance	-	-	-	-	-	-	4,707	664	5,371	-	5,371	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	1,077	152	1,229	-	1,229	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	940	-	-	-	-	-	331	1,271	-	1,271	-	-	-	-	-	-	-	-	-

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2a Period-Dependent Costs (continued)																					
2a.4.4	Disposal of DAW generated	-	-	75	28	-	248	-	104	455	-	455	-	-	3,994	-	-	-	79,890	146	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	2,840	601	3,441	-	3,441	-	-	-	-	-	-	-	-	-
2a.4.6	NRC ISFSI Fees	-	-	-	-	-	-	2,035	-	2,035	-	2,035	-	-	-	-	-	-	-	-	-
2a.4.7	NRC Fees	-	-	-	-	-	-	2,152	304	2,456	-	2,456	-	-	-	-	-	-	-	-	-
2a.4.8	Emergency Planning Fees	-	-	-	-	-	-	4,278	604	4,882	-	4,882	-	-	-	-	-	-	-	-	-
2a.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,601	974	5,575	-	5,575	-	-	-	-	-	-	-	-	-
2a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	7,846	1,660	9,507	-	9,507	-	-	-	-	-	-	-	-	-
2a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	1,505	318	1,823	-	1,823	-	-	-	-	-	-	-	-	-
2a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	55,181	11,678	66,859	-	66,859	-	-	-	-	-	-	-	-	-
2a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	3,060	647	3,707	-	3,707	-	-	-	-	-	-	-	-	-
2a.4.14	Utility Staff Cost	-	-	-	-	-	-	9,823	2,079	11,902	-	11,902	-	-	-	-	-	-	-	-	167,057
2a.4	Subtotal Period 2a Period-Dependent Costs	-	940	75	28	-	248	99,105	20,116	120,513	-	120,513	-	-	3,994	-	-	-	79,890	146	167,057
2a.0	TOTAL PERIOD 2a COST	-	940	75	28	-	248	112,805	23,205	137,301	-	137,301	-	-	3,994	-	-	-	79,890	146	167,057
PERIOD 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																					
Period 2b Direct Decommissioning Activities																					
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3	Prepare reports									a											
2b.1.4	Bituminous roof replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	1,881	663	2,544	-	2,544	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	1,881	663	2,544	-	2,544	-	-	-	-	-	-	-	-	-
Period 2b Period-Dependent Costs																					
2b.4.1	Insurance	-	-	-	-	-	-	5,750	811	6,562	-	6,562	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	1,509	213	1,722	-	1,722	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	1,276	-	-	-	-	-	450	1,726	-	1,726	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	104	39	-	343	-	144	630	-	630	-	-	5,534	-	-	-	110,682	202	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	1,990	421	2,411	-	2,411	-	-	-	-	-	-	-	-	-
2b.4.6	NRC ISFSI Fees	-	-	-	-	-	-	2,852	-	2,852	-	2,852	-	-	-	-	-	-	-	-	-
2b.4.7	NRC Fees	-	-	-	-	-	-	3,015	425	3,441	-	3,441	-	-	-	-	-	-	-	-	-
2b.4.8	Emergency Planning Fees	-	-	-	-	-	-	5,573	786	6,360	-	6,360	-	-	-	-	-	-	-	-	-
2b.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	6,699	1,418	8,116	-	8,116	-	-	-	-	-	-	-	-	-
2b.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	2,108	446	2,555	-	2,555	-	-	-	-	-	-	-	-	-
2b.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	4,287	907	5,194	-	5,194	-	-	-	-	-	-	-	-	-
2b.4.12	Utility Staff Cost	-	-	-	-	-	-	7,259	1,536	8,795	-	8,795	-	-	-	-	-	-	-	-	124,846
2b.4	Subtotal Period 2b Period-Dependent Costs	-	1,276	104	39	-	343	41,043	7,558	50,364	-	50,364	-	-	5,534	-	-	-	110,682	202	124,846
2b.0	TOTAL PERIOD 2b COST	-	1,276	104	39	-	343	42,924	8,222	52,909	-	52,909	-	-	5,534	-	-	-	110,682	202	124,846
PERIOD 2 TOTALS		-	2,216	179	67	-	591	155,730	31,427	190,210	-	190,210	-	-	9,529	-	-	-	190,572	347	291,903
PERIOD 3a - Reactivate Site Following SAFSTOR Dormancy																					
Period 3a Direct Decommissioning Activities																					
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	156	33	189	189	-	-	-	-	-	-	-	-	-	1,300
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	551	117	668	668	-	-	-	-	-	-	-	-	-	4,600
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	156	33	189	189	-	-	-	-	-	-	-	-	-	1,300
3a.1.6	Define major work sequence	-	-	-	-	-	-	899	190	1,089	1,089	-	-	-	-	-	-	-	-	-	7,500
3a.1.7	Perform SER and EA	-	-	-	-	-	-	372	79	450	450	-	-	-	-	-	-	-	-	-	3,100
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	599	127	726	726	-	-	-	-	-	-	-	-	-	5,000
3a.1.9	Prepare/submit License Termination Plan	-	-	-	-	-	-	491	104	595	595	-	-	-	-	-	-	-	-	-	4,096

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3a Direct Decommissioning Activities (continued)																					
3a.1.10	Receive NRC approval of termination plan									a											
Activity Specifications																					
3a.1.11.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	884	187	1,071	964	-	107	-	-	-	-	-	-	-	7,370
3a.1.11.2	Plant systems	-	-	-	-	-	-	500	106	605	545	-	61	-	-	-	-	-	-	-	4,167
3a.1.11.3	Reactor internals	-	-	-	-	-	-	851	180	1,031	1,031	-	-	-	-	-	-	-	-	-	7,100
3a.1.11.4	Reactor vessel	-	-	-	-	-	-	779	165	944	944	-	-	-	-	-	-	-	-	-	6,500
3a.1.11.5	Biological shield	-	-	-	-	-	-	60	13	73	73	-	-	-	-	-	-	-	-	-	500
3a.1.11.6	Steam generators	-	-	-	-	-	-	374	79	453	453	-	-	-	-	-	-	-	-	-	3,120
3a.1.11.7	Reinforced concrete	-	-	-	-	-	-	192	41	232	116	-	116	-	-	-	-	-	-	-	1,600
3a.1.11.8	Main Turbine	-	-	-	-	-	-	48	10	58	-	-	58	-	-	-	-	-	-	-	400
3a.1.11.9	Main Condensers	-	-	-	-	-	-	48	10	58	-	-	58	-	-	-	-	-	-	-	400
3a.1.11.10	Plant structures & buildings	-	-	-	-	-	-	374	79	453	227	-	227	-	-	-	-	-	-	-	3,120
3a.1.11.11	Waste management	-	-	-	-	-	-	551	117	668	668	-	-	-	-	-	-	-	-	-	4,600
3a.1.11.12	Facility & site closeout	-	-	-	-	-	-	108	23	131	65	-	65	-	-	-	-	-	-	-	900
3a.1.11	Total	-	-	-	-	-	-	4,769	1,009	5,778	5,086	-	692	-	-	-	-	-	-	-	39,777
Planning & Site Preparations																					
3a.1.12	Prepare dismantling sequence	-	-	-	-	-	-	288	61	349	349	-	-	-	-	-	-	-	-	-	2,400
3a.1.13	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	571	3,271	3,271	-	-	-	-	-	-	-	-	-	-
3a.1.14	Design water clean-up system	-	-	-	-	-	-	168	36	203	203	-	-	-	-	-	-	-	-	-	1,400
3a.1.15	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	444	2,544	2,544	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	147	31	179	179	-	-	-	-	-	-	-	-	-	1,230
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	13,516	2,860	16,377	15,685	-	692	-	-	-	-	-	-	-	72,703
Period 3a Period-Dependent Costs																					
3a.4.1	Insurance	-	-	-	-	-	-	367	52	419	419	-	-	-	-	-	-	-	-	-	-
3a.4.2	Property taxes	-	-	-	-	-	-	101	14	115	115	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	425	-	-	-	-	-	150	575	575	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	104	593	593	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	10	4	-	32	-	13	59	59	-	-	-	514	-	-	-	10,287	19	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	281	1,611	1,611	-	-	-	-	-	-	-	-	-	-
3a.4.7	NRC Fees	-	-	-	-	-	-	249	35	284	284	-	-	-	-	-	-	-	-	-	-
3a.4.8	Security Staff Cost	-	-	-	-	-	-	4,391	929	5,321	5,321	-	-	-	-	-	-	-	-	-	65,179
3a.4.9	Utility Staff Cost	-	-	-	-	-	-	16,345	3,459	19,805	19,805	-	-	-	-	-	-	-	-	-	258,629
3a.4	Subtotal Period 3a Period-Dependent Costs	-	915	10	4	-	32	22,784	5,038	28,781	28,781	-	-	-	514	-	-	-	10,287	19	323,807
3a.0	TOTAL PERIOD 3a COST	-	915	10	4	-	32	36,300	7,898	45,158	44,466	-	692	-	514	-	-	-	10,287	19	396,510
PERIOD 3b - Decommissioning Preparations																					
Period 3b Direct Decommissioning Activities																					
Detailed Work Procedures																					
3b.1.1.1	Plant systems	-	-	-	-	-	-	567	120	688	619	-	69	-	-	-	-	-	-	-	4,733
3b.1.1.2	Reactor internals	-	-	-	-	-	-	300	63	363	363	-	-	-	-	-	-	-	-	-	2,500
3b.1.1.3	Remaining buildings	-	-	-	-	-	-	162	34	196	49	-	147	-	-	-	-	-	-	-	1,350
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	120	25	145	145	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.7	Reactor vessel	-	-	-	-	-	-	435	92	527	527	-	-	-	-	-	-	-	-	-	3,630
3b.1.1.8	Facility closeout	-	-	-	-	-	-	144	30	174	87	-	87	-	-	-	-	-	-	-	1,200
3b.1.1.9	Missile shields	-	-	-	-	-	-	54	11	65	65	-	-	-	-	-	-	-	-	-	450
3b.1.1.10	Biological shield	-	-	-	-	-	-	144	30	174	174	-	-	-	-	-	-	-	-	-	1,200
3b.1.1.11	Steam generators	-	-	-	-	-	-	551	117	668	668	-	-	-	-	-	-	-	-	-	4,600

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 3b Detailed Work Procedures (continued)																					
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	120	25	145	73	-	73	-	-	-	-	-	-	-	1,000
3b.1.1.13	Main Turbine	-	-	-	-	-	-	187	40	227	-	-	227	-	-	-	-	-	-	-	1,560
3b.1.1.14	Main Condensers	-	-	-	-	-	-	187	40	227	-	-	227	-	-	-	-	-	-	-	1,560
3b.1.1.15	Auxiliary building	-	-	-	-	-	-	327	69	397	357	-	40	-	-	-	-	-	-	-	2,730
3b.1.1.16	Reactor building	-	-	-	-	-	-	327	69	397	357	-	40	-	-	-	-	-	-	-	2,730
3b.1.1	Total	-	-	-	-	-	-	3,866	818	4,684	3,776	-	908	-	-	-	-	-	-	-	32,243
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	3,866	818	4,684	3,776	-	908	-	-	-	-	-	-	-	32,243
Period 3b Additional Costs																					
3b.2.1	Site Characterization	-	-	-	-	-	-	4,549	1,925	6,474	6,474	-	-	-	-	-	-	-	-	25,000	9,412
3b.2	Subtotal Period 3b Additional Costs	-	-	-	-	-	-	4,549	1,925	6,474	6,474	-	-	-	-	-	-	-	-	25,000	9,412
Period 3b Collateral Costs																					
3b.3.1	Decon equipment	935	-	-	-	-	-	-	198	1,133	1,133	-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	295	1,690	1,690	-	-	-	-	-	-	-	-	-	-
3b.3.3	Pipe cutting equipment	-	1,000	-	-	-	-	-	212	1,212	1,212	-	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	935	1,000	-	-	-	-	1,395	705	4,035	4,035	-	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Decon supplies	29	-	-	-	-	-	-	10	39	39	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	221	31	252	252	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	51	7	58	58	-	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	235	-	-	-	-	-	83	318	318	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	246	-	-	-	-	-	52	297	297	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	5	2	-	18	-	8	33	33	-	-	-	292	-	-	-	5,834	11	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	667	141	808	808	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	125	18	142	142	-	-	-	-	-	-	-	-	-	-
3b.4.9	Security Staff Cost	-	-	-	-	-	-	2,202	466	2,668	2,668	-	-	-	-	-	-	-	-	-	32,679
3b.4.10	DOC Staff Cost	-	-	-	-	-	-	4,892	1,035	5,927	5,927	-	-	-	-	-	-	-	-	-	58,560
3b.4.11	Utility Staff Cost	-	-	-	-	-	-	8,195	1,734	9,929	9,929	-	-	-	-	-	-	-	-	-	129,669
3b.4	Subtotal Period 3b Period-Dependent Costs	29	480	5	2	-	18	16,351	3,585	20,471	20,471	-	-	-	292	-	-	-	5,834	11	220,907
3b.0	TOTAL PERIOD 3b COST	964	1,480	5	2	-	18	26,161	7,033	35,664	34,756	-	908	-	292	-	-	-	5,834	25,011	262,562
PERIOD 3 TOTALS		964	2,395	15	6	-	50	62,461	14,931	80,822	79,222	-	1,600	-	806	-	-	-	16,121	25,029	659,072
PERIOD 4a - Large Component Removal																					
Period 4a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
4a.1.1.1	Reactor Coolant Piping	66	259	40	32	60	690	-	406	1,554	1,554	-	-	214	1,927	-	-	-	256,781	5,614	-
4a.1.1.2	Pressurizer Quench Tank	7	26	6	5	9	97	-	52	203	203	-	-	33	296	-	-	-	36,557	596	-
4a.1.1.3	Reactor Coolant Pumps & Motors	26	101	44	121	-	1,358	-	564	2,213	2,213	-	-	-	5,388	-	-	-	871,200	3,760	-
4a.1.1.4	Pressurizer	8	59	454	295	-	620	-	372	1,809	1,809	-	-	-	2,460	-	-	-	269,821	1,782	-
4a.1.1.5	Steam Generators	85	3,846	1,858	1,886	2,974	5,768	-	4,741	21,158	21,158	-	-	37,344	22,887	-	-	-	3,128,906	20,508	1,125
4a.1.1.6	Retired Steam Generator Units	-	-	1,858	1,886	2,974	5,768	-	3,325	15,811	15,811	-	-	37,344	22,887	-	-	-	3,128,906	10,800	1,125
4a.1.1.7	CRDMs/ICIs/Service Structure Removal	35	90	221	29	39	202	-	173	789	789	-	-	419	3,362	-	-	-	83,603	2,134	-
4a.1.1.8	Reactor Vessel Internals	60	1,983	3,746	496	-	3,476	197	6,131	16,089	16,089	-	-	-	2,693	376	584	-	360,613	23,417	1,069
4a.1.1.9	Vessel & Internals GTCC Disposal	-	-	-	-	-	8,952	-	1,895	10,847	10,847	-	-	-	-	-	-	433	85,510	-	-
4a.1.1.10	Reactor Vessel	86	3,911	1,315	633	-	8,565	197	10,969	25,675	25,675	-	-	-	6,481	2,379	-	-	964,972	23,417	1,069
4a.1.1	Totals	372	10,275	9,543	5,383	6,057	35,495	394	28,629	96,147	96,147	-	-	75,354	68,381	2,754	584	433	9,186,868	92,028	4,387

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Removal of Major Equipment																					
4a.1.2	Main Turbine/Generator	-	471	153	113	928	-	-	408	2,073	2,073	-	-	8,118	-	-	-	-	365,301	8,335	-
4a.1.3	Main Condensers	-	1,370	145	107	875	-	-	711	3,208	3,208	-	-	7,657	-	-	-	-	344,574	24,147	-
Cascading Costs from Clean Building Demolition																					
4a.1.4.1	*Reactor	-	1,208	-	-	-	-	-	256	1,463	1,463	-	-	-	-	-	-	-	-	13,127	-
4a.1.4.2	Containment Penetration Area	-	66	-	-	-	-	-	14	80	80	-	-	-	-	-	-	-	-	704	-
4a.1.4.3	Fuel Handling	-	175	-	-	-	-	-	37	212	212	-	-	-	-	-	-	-	-	1,746	-
4a.1.4	Totals	-	1,449	-	-	-	-	-	307	1,755	1,755	-	-	-	-	-	-	-	-	15,578	-
Disposal of Plant Systems																					
4a.1.5.1	Auxiliary Steam	-	245	6	56	458	-	-	196	962	962	-	-	4,445	-	-	-	-	180,494	4,001	-
4a.1.5.2	Auxiliary Steam (RCA)	-	213	3	29	240	-	-	133	619	619	-	-	2,330	-	-	-	-	94,627	3,528	-
4a.1.5.3	Condensate System	-	1,131	68	592	4,856	-	-	1,561	8,208	8,208	-	-	47,076	-	-	-	-	1,911,765	18,771	-
4a.1.5.4	Condensate System (Insulated)	-	401	21	182	1,497	-	-	500	2,601	2,601	-	-	14,512	-	-	-	-	589,348	6,833	-
4a.1.5.5	Containment Spray	-	194	10	87	713	-	-	239	1,242	1,242	-	-	6,908	-	-	-	-	280,525	3,329	-
4a.1.5.6	Extraction Steam & Heater Drip	-	450	16	143	1,176	-	-	440	2,225	2,225	-	-	11,399	-	-	-	-	462,924	7,441	-
4a.1.5.7	Feedwater System	-	65	5	48	395	-	-	117	631	631	-	-	3,829	-	-	-	-	155,509	1,130	-
4a.1.5.8	Feedwater System (Insulated)	-	271	11	101	825	-	-	293	1,501	1,501	-	-	7,995	-	-	-	-	324,669	4,542	-
4a.1.5.9	Feedwater System (RCA Insulated)	-	98	3	24	199	-	-	82	407	407	-	-	1,926	-	-	-	-	78,223	1,693	-
4a.1.5.10	Feedwater System (RCA)	-	5	0	1	10	-	-	4	21	21	-	-	101	-	-	-	-	4,117	81	-
4a.1.5.11	Lube Oil Distribution & Purification	-	188	3	25	205	-	-	115	536	536	-	-	1,986	-	-	-	-	80,661	3,052	-
4a.1.5.12	Nitrogen & Hydrogen	-	17	-	-	-	-	-	4	20	-	-	20	-	-	-	-	-	-	315	-
4a.1.5.13	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	17	-
4a.1.5.14	Nitrogen & Hydrogen (RCA Insulated)	-	5	0	0	2	-	-	2	9	9	-	-	20	-	-	-	-	793	75	-
4a.1.5.15	Nitrogen & Hydrogen (RCA)	-	87	1	5	38	-	-	40	170	170	-	-	371	-	-	-	-	15,060	1,433	-
4a.1.5.16	Oily Water Separator & TB Sump	-	30	1	8	63	-	-	25	126	126	-	-	607	-	-	-	-	24,649	464	-
4a.1.5.17	Saltwater System	-	162	-	-	-	-	-	34	196	-	-	196	-	-	-	-	-	-	2,926	-
4a.1.5.18	Turbine Steam Supply	-	1,227	80	700	5,742	-	-	1,807	9,556	9,556	-	-	55,669	-	-	-	-	2,260,765	20,590	-
4a.1.5.19	Turbine Steam Supply (RCA)	-	671	22	182	1,497	-	-	595	2,966	2,966	-	-	14,508	-	-	-	-	589,194	11,474	-
4a.1.5.20	Turbine and Generator	-	116	4	37	300	-	-	113	569	569	-	-	2,909	-	-	-	-	118,127	1,947	-
4a.1.5.21	Turbine and Generator (Insulated)	-	49	1	8	63	-	-	32	152	152	-	-	607	-	-	-	-	24,645	777	-
4a.1.5	Totals	-	5,622	256	2,228	18,278	-	-	6,333	32,717	32,500	-	217	177,198	-	-	-	-	7,196,094	94,419	-
4a.1.6	Scaffolding in support of decommissioning	-	2,236	12	9	67	10	-	810	3,143	3,143	-	-	586	39	-	-	-	29,687	17,211	-
4a.1	Subtotal Period 4a Activity Costs	372	21,423	10,109	7,839	26,205	35,504	394	37,198	139,044	138,827	-	217	268,913	68,420	2,754	584	433	17,122,520	251,718	4,387
Period 4a Additional Costs																					
4a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	539	1,366	1,366	-	-	-	2,002	-	-	-	211,020	2,100	84
4a.2	Subtotal Period 4a Additional Costs	-	102	151	55	-	503	15	539	1,366	1,366	-	-	-	2,002	-	-	-	211,020	2,100	84
Period 4a Collateral Costs																					
4a.3.1	Process liquid waste	56	-	27	110	-	103	-	103	399	399	-	-	-	405	-	-	-	24,289	79	-
4a.3.2	Small tool allowance	-	263	-	-	-	-	-	56	318	286	-	32	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	56	263	27	110	-	103	-	158	717	685	-	32	-	405	-	-	-	24,289	79	-
Period 4a Period-Dependent Costs																					
4a.4.1	Decon supplies	80	-	-	-	-	-	-	28	108	108	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	613	87	700	700	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	140	20	160	144	-	16	-	-	-	-	-	-	-	-
4a.4.4	Health physics supplies	-	1,805	-	-	-	-	-	637	2,441	2,441	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	3,277	-	-	-	-	-	693	3,970	3,970	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	83	31	-	272	-	114	499	499	-	-	-	4,386	-	-	-	87,730	160	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	1,758	372	2,130	2,130	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	-	-	-	-	-	-	916	129	1,045	1,045	-	-	-	-	-	-	-	-	-	-
4a.4.9	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	535	113	648	648	-	-	-	-	-	-	-	-	-	-

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4a Period-Dependent Costs (continued)																					
4a.4.10	Security Staff Cost	-	-	-	-	-	-	4,367	924	5,291	5,291	-	-	-	-	-	-	-	-	-	64,821
4a.4.11	DOC Staff Cost	-	-	-	-	-	-	16,057	3,398	19,456	19,456	-	-	-	-	-	-	-	-	-	198,294
4a.4.12	Utility Staff Cost	-	-	-	-	-	-	21,827	4,619	26,446	26,446	-	-	-	-	-	-	-	-	-	349,794
4a.4	Subtotal Period 4a Period-Dependent Costs	80	5,082	83	31	-	272	46,214	11,134	62,894	62,878	-	16	-	4,386	-	-	-	87,730	160	612,909
4a.0	TOTAL PERIOD 4a COST	508	26,869	10,370	8,034	26,205	36,382	46,623	49,029	204,021	203,756	-	265	268,913	75,213	2,754	584	433	17,445,560	254,056	617,381
PERIOD 4b - Site Decontamination																					
Period 4b Direct Decommissioning Activities																					
4b.1.1	Remove spent fuel racks	432	47	136	34	-	659	-	580	1,888	1,888	-	-	-	2,621	-	-	-	222,759	962	-
Disposal of Plant Systems																					
4b.1.2.1	Capital Additions 85-2002 (clean)	-	155	-	-	-	-	-	33	187	-	-	187	-	-	-	-	-	-	2,830	-
4b.1.2.2	Capital Additions 85-2002 (contaminated)	-	310	3	28	234	-	-	165	741	741	-	-	2,266	-	-	-	-	92,043	5,363	-
4b.1.2.3	Chemical & Volume Control	-	851	46	97	646	351	-	588	2,579	2,579	-	-	6,267	1,420	-	-	-	373,180	14,546	-
4b.1.2.4	Chemical & Volume Control (Insulated)	-	308	16	15	65	129	-	173	705	705	-	-	627	513	-	-	-	68,999	5,086	-
4b.1.2.5	Component Cooling Water	-	166	-	-	-	-	-	35	202	-	-	202	-	-	-	-	-	-	3,078	-
4b.1.2.6	Component Cooling Water (RCA)	-	478	13	107	876	-	-	378	1,852	1,852	-	-	8,495	-	-	-	-	344,999	8,025	-
4b.1.2.7	Compressed Air	-	148	-	-	-	-	-	31	179	-	-	179	-	-	-	-	-	-	2,744	-
4b.1.2.8	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	98	-
4b.1.2.9	Compressed Air (RCA Insulated)	-	22	0	1	10	-	-	10	45	45	-	-	102	-	-	-	-	4,130	380	-
4b.1.2.10	Compressed Air (RCA)	-	413	3	24	199	-	-	194	834	834	-	-	1,932	-	-	-	-	78,476	6,959	-
4b.1.2.11	Diesel Engine-Generator	-	152	-	-	-	-	-	32	184	-	-	184	-	-	-	-	-	-	2,760	-
4b.1.2.12	Diesel Engine-Generator (Insulated)	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	178	-
4b.1.2.13	Electrical (Clean)	-	1,809	-	-	-	-	-	383	2,192	-	-	2,192	-	-	-	-	-	-	32,770	-
4b.1.2.14	Electrical (Contaminated)	-	442	7	65	532	-	-	283	1,329	1,329	-	-	5,155	-	-	-	-	209,365	7,636	-
4b.1.2.15	Electrical (Contaminated) - FHB	-	128	1	10	81	-	-	65	285	285	-	-	786	-	-	-	-	31,909	2,213	-
4b.1.2.16	Electrical (Decontaminated)	-	3,025	73	612	5,022	-	-	2,269	11,001	11,001	-	-	48,689	-	-	-	-	1,977,300	51,247	-
4b.1.2.17	Electrical (Decontaminated) - FHB	-	880	11	90	742	-	-	488	2,212	2,212	-	-	7,198	-	-	-	-	292,312	14,847	-
4b.1.2.18	Fire Protection	-	311	11	93	761	-	-	292	1,466	1,466	-	-	7,373	-	-	-	-	299,432	5,298	-
4b.1.2.19	Fire Protection (RCA)	-	191	2	20	162	-	-	106	481	481	-	-	1,570	-	-	-	-	63,760	3,139	-
4b.1.2.20	Gaseous Radwaste	-	60	0	4	34	-	-	30	129	129	-	-	332	-	-	-	-	13,495	965	-
4b.1.2.21	HVAC (Clean Insulated)	-	24	-	-	-	-	-	5	29	-	-	29	-	-	-	-	-	-	475	-
4b.1.2.22	HVAC (Clean)	-	304	-	-	-	-	-	64	368	-	-	368	-	-	-	-	-	-	5,804	-
4b.1.2.23	HVAC (Contaminated Insulated)	-	229	4	37	304	-	-	154	729	729	-	-	2,950	-	-	-	-	119,809	3,471	-
4b.1.2.24	HVAC (Contaminated)	-	1,018	21	185	1,521	-	-	723	3,469	3,469	-	-	14,745	-	-	-	-	598,821	15,667	-
4b.1.2.25	HVAC (Contaminated) - FHB	-	242	5	42	348	-	-	169	806	806	-	-	3,370	-	-	-	-	136,839	3,710	-
4b.1.2.26	Liquid Radwaste	-	538	38	49	268	316	-	374	1,584	1,584	-	-	2,599	1,347	-	-	-	212,279	9,155	-
4b.1.2.27	Liquid Radwaste (Insulated)	-	56	4	3	8	31	-	34	136	136	-	-	78	124	-	-	-	13,753	928	-
4b.1.2.28	Make-up Water	-	306	-	-	-	-	-	65	371	-	-	371	-	-	-	-	-	-	5,614	-
4b.1.2.29	Make-up Water (Insulated)	-	28	-	-	-	-	-	6	34	-	-	34	-	-	-	-	-	-	521	-
4b.1.2.30	Make-up Water (RCA Insulated)	-	34	0	3	28	-	-	19	84	84	-	-	269	-	-	-	-	10,909	564	-
4b.1.2.31	Make-up Water (RCA)	-	180	2	19	157	-	-	101	460	460	-	-	1,522	-	-	-	-	61,817	2,969	-
4b.1.2.32	Miscellaneous Reactor Coolant	-	87	3	6	38	19	-	47	200	200	-	-	371	77	-	-	-	21,534	1,558	-
4b.1.2.33	Nuclear Steam Supply Sampling	-	131	1	7	57	-	-	60	256	256	-	-	556	-	-	-	-	22,561	2,405	-
4b.1.2.34	Nuclear Steam Supply Sampling (Insulated	-	40	0	1	7	-	-	16	63	63	-	-	70	-	-	-	-	2,836	735	-
4b.1.2.35	Residual Heat Removal	-	231	26	84	595	214	-	304	1,454	1,454	-	-	5,773	853	-	-	-	306,888	4,053	-
4b.1.2.36	Safety Injection	-	90	1	12	99	-	-	56	259	259	-	-	963	-	-	-	-	39,122	1,570	-
4b.1.2.37	Safety Injection (Insulated)	-	4	0	0	4	-	-	2	11	11	-	-	38	-	-	-	-	1,558	72	-
4b.1.2.38	Safety Injection (RCA Insulated)	-	32	1	4	36	-	-	20	93	93	-	-	345	-	-	-	-	14,018	533	-
4b.1.2.39	Safety Injection (RCA)	-	270	5	39	320	-	-	172	807	807	-	-	3,107	-	-	-	-	126,161	4,433	-
4b.1.2.40	Service Cooling Water	-	100	-	-	-	-	-	21	121	-	-	121	-	-	-	-	-	-	1,856	-
4b.1.2.41	Service Cooling Water (RCA)	-	23	0	3	26	-	-	14	67	67	-	-	253	-	-	-	-	10,286	384	-
4b.1.2.42	Spent Fuel Pit Cooling	-	63	8	32	238	61	-	102	505	505	-	-	2,311	242	-	-	-	114,445	1,103	-
4b.1.2.43	Spent Fuel Pit Cooling - FHB	-	86	10	34	251	72	-	117	570	570	-	-	2,433	284	-	-	-	122,976	1,513	-

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4b Disposal of Plant Systems (continued)																					
4b.1.2	Totals	-	13,980	316	1,728	13,672	1,193	-	8,203	39,094	35,209	-	3,885	132,547	4,861	-	-	-	5,786,013	239,260	-
4b.1.3	Scaffolding in support of decommissioning	-	3,354	18	13	101	15	-	1,215	4,714	4,714	-	-	880	58	-	-	-	44,530	25,817	-
Decontamination of Site Buildings																					
4b.1.4.1	*Reactor	1,371	1,504	345	341	426	1,365	-	2,190	7,541	7,541	-	-	4,128	17,997	-	-	-	1,944,651	46,746	-
4b.1.4.2	Capital Additions 85-2004	24	20	1	4	40	3	-	34	126	126	-	-	386	14	-	-	-	16,586	744	-
4b.1.4.3	Containment Penetration Area	237	140	23	28	120	299	-	357	1,204	1,204	-	-	1,164	1,197	-	-	-	148,244	6,147	-
4b.1.4.4	Fuel Handling	593	597	31	42	206	388	-	823	2,680	2,680	-	-	1,996	1,566	-	-	-	212,259	20,239	-
4b.1.4	Totals	2,225	2,261	401	415	792	2,055	-	3,404	11,552	11,552	-	-	7,674	20,775	-	-	-	2,321,740	73,876	-
4b.1	Subtotal Period 4b Activity Costs	2,657	19,642	871	2,190	14,564	3,922	-	13,402	57,248	53,363	-	3,885	141,101	28,315	-	-	-	8,375,042	339,915	-
Period 4b Additional Costs																					
4b.2.1	ISFSI License Termination	-	1,059	4	100	-	387	783	690	3,022	-	3,022	-	-	6,237	-	-	-	748,923	15,272	1,280
4b.2.2	License Termination Survey Planning	-	-	-	-	-	-	669	283	952	952	-	-	-	-	-	-	-	-	-	6,240
4b.2	Subtotal Period 4b Additional Costs	-	1,059	4	100	-	387	1,451	973	3,974	952	3,022	-	-	6,237	-	-	-	748,923	15,272	7,520
Period 4b Collateral Costs																					
4b.3.1	Process liquid waste	127	-	62	250	-	236	-	234	909	909	-	-	-	924	-	-	-	55,419	180	-
4b.3.2	Small tool allowance	-	397	-	-	-	-	-	84	481	481	-	-	-	-	-	-	-	-	-	-
4b.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	100	-	220	1,234	1,234	-	-	6,000	397	-	-	-	303,726	88	-
4b.3	Subtotal Period 4b Collateral Costs	127	397	183	357	686	335	-	538	2,624	2,624	-	-	6,000	1,320	-	-	-	359,145	268	-
Period 4b Period-Dependent Costs																					
4b.4.1	Decon supplies	948	-	-	-	-	-	-	334	1,282	1,282	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	866	122	988	988	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	198	28	226	226	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,446	-	-	-	-	-	863	3,309	3,309	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,592	-	-	-	-	-	972	5,564	5,564	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	94	35	-	309	-	130	567	567	-	-	-	4,981	-	-	-	99,624	181	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	1,959	415	2,374	2,374	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	1,293	182	1,475	1,475	-	-	-	-	-	-	-	-	-	-
4b.4.9	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	755	160	914	914	-	-	-	-	-	-	-	-	-	-
4b.4.10	Security Staff Cost	-	-	-	-	-	-	1,426	302	1,728	1,728	-	-	-	-	-	-	-	-	-	22,534
4b.4.11	DOC Staff Cost	-	-	-	-	-	-	15,043	3,183	18,226	18,226	-	-	-	-	-	-	-	-	-	192,566
4b.4.12	Utility Staff Cost	-	-	-	-	-	-	21,285	4,504	25,789	25,789	-	-	-	-	-	-	-	-	-	344,160
4b.4	Subtotal Period 4b Period-Dependent Costs	948	7,038	94	35	-	309	42,824	11,195	62,442	62,442	-	-	-	4,981	-	-	-	99,624	181	559,260
4b.0	TOTAL PERIOD 4b COST	3,731	28,136	1,152	2,682	15,250	4,953	44,275	26,108	126,288	119,381	3,022	3,885	147,101	40,854	-	-	-	9,582,733	355,637	566,780
PERIOD 4d - Delay before License Termination																					
Period 4d Period-Dependent Costs																					
4d.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4d.4.2	Property taxes	-	-	-	-	-	-	106	15	121	121	-	-	-	-	-	-	-	-	-	-
4d.4.3	Health physics supplies	-	92	-	-	-	-	-	33	125	125	-	-	-	-	-	-	-	-	-	-
4d.4.4	Disposal of DAW generated	-	-	2	1	-	7	-	3	12	12	-	-	-	105	-	-	-	2,103	4	-
4d.4.5	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4d.4.6	NRC Fees	-	-	-	-	-	-	192	27	220	220	-	-	-	-	-	-	-	-	-	-
4d.4.7	Utility Staff Cost	-	-	-	-	-	-	934	198	1,131	1,131	-	-	-	-	-	-	-	-	-	15,400
4d.4	Subtotal Period 4d Period-Dependent Costs	-	92	2	1	-	7	1,232	275	1,609	1,609	-	-	-	105	-	-	-	2,103	4	15,400
4d.0	TOTAL PERIOD 4d COST	-	92	2	1	-	7	1,232	275	1,609	1,609	-	-	-	105	-	-	-	2,103	4	15,400

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 4e - License Termination																					
Period 4e Direct Decommissioning Activities																					
4e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	65	218	218	-	-	-	-	-	-	-	-	-	-
4e.1.2	Terminate license									a											
4e.1	Subtotal Period 4e Activity Costs	-	-	-	-	-	-	153	65	218	218	-	-	-	-	-	-	-	-	-	-
Period 4e Additional Costs																					
4e.2.1	License Termination Survey	-	-	-	-	-	-	8,178	3,461	11,639	11,639	-	-	-	-	-	-	-	-	142,829	3,120
4e.2	Subtotal Period 4e Additional Costs	-	-	-	-	-	-	8,178	3,461	11,639	11,639	-	-	-	-	-	-	-	-	142,829	3,120
Period 4e Collateral Costs																					
4e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,395	295	1,690	1,690	-	-	-	-	-	-	-	-	-	-
4e.3	Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	1,395	295	1,690	1,690	-	-	-	-	-	-	-	-	-	-
Period 4e Period-Dependent Costs																					
4e.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	919	-	-	-	-	-	324	1,243	1,243	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	6	2	-	20	-	8	36	36	-	-	-	319	-	-	-	6,371	12	-
4e.4.5	Plant energy budget	-	-	-	-	-	-	200	42	243	243	-	-	-	-	-	-	-	-	-	-
4e.4.6	NRC Fees	-	-	-	-	-	-	532	75	607	607	-	-	-	-	-	-	-	-	-	-
4e.4.7	Security Staff Cost	-	-	-	-	-	-	298	63	361	361	-	-	-	-	-	-	-	-	-	4,714
4e.4.8	DOC Staff Cost	-	-	-	-	-	-	2,847	602	3,449	3,449	-	-	-	-	-	-	-	-	-	36,143
4e.4.9	Utility Staff Cost	-	-	-	-	-	-	2,525	534	3,059	3,059	-	-	-	-	-	-	-	-	-	39,286
4e.4	Subtotal Period 4e Period-Dependent Costs	-	919	6	2	-	20	6,478	1,660	9,085	9,085	-	-	-	319	-	-	-	6,371	12	80,143
4e.0	TOTAL PERIOD 4e COST	-	919	6	2	-	20	16,203	5,482	22,632	22,632	-	-	-	319	-	-	-	6,371	142,841	83,263
PERIOD 4 TOTALS		4,239	56,016	11,530	10,719	41,455	41,362	108,334	80,894	354,549	347,378	3,022	4,150	416,013	116,491	2,754	584	433	27,036,770	752,537	1,282,823
PERIOD 5b - Site Restoration																					
Period 5b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
5b.1.1.1	*Reactor	-	6,873	-	-	-	-	-	1,455	8,328	-	-	8,328	-	-	-	-	-	-	74,901	-
5b.1.1.2	Capital Additions 85-2004	-	273	-	-	-	-	-	58	331	-	-	331	-	-	-	-	-	-	3,572	-
5b.1.1.3	Containment Penetration Area	-	615	-	-	-	-	-	130	745	-	-	745	-	-	-	-	-	-	6,563	-
5b.1.1.4	Miscellaneous	-	26	-	-	-	-	-	5	31	-	-	31	-	-	-	-	-	-	249	-
5b.1.1.5	Turbine	-	3,274	-	-	-	-	-	693	3,966	-	-	3,966	-	-	-	-	-	-	38,602	-
5b.1.1.6	Turbine Pedestal	-	1,212	-	-	-	-	-	256	1,468	-	-	1,468	-	-	-	-	-	-	11,300	-
5b.1.1.7	Fuel Handling	-	1,689	-	-	-	-	-	357	2,046	-	-	2,046	-	-	-	-	-	-	16,750	-
5b.1.1	Totals	-	13,961	-	-	-	-	-	2,955	16,916	-	-	16,916	-	-	-	-	-	-	151,936	-
Site Closeout Activities																					
5b.1.2	Grade & landscape site	-	2,272	-	-	-	-	-	481	2,753	-	-	2,753	-	-	-	-	-	-	4,587	-
5b.1.3	Final report to NRC	-	-	-	-	-	-	187	40	227	227	-	-	-	-	-	-	-	-	-	1,560
5b.1	Subtotal Period 5b Activity Costs	-	16,234	-	-	-	-	187	3,475	19,896	227	-	19,669	-	-	-	-	-	-	156,523	1,560
Period 5b Additional Costs																					
5b.2.1	Concrete Crushing	-	464	-	0	-	-	-	98	562	-	-	562	-	-	-	-	-	-	2,063	-
5b.2.2	ISFSI Demolition and Site Restoration	-	545	-	-	-	-	24	120	690	-	690	-	-	-	-	-	-	-	3,349	80
5b.2.3	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	93	530	-	-	530	-	-	-	-	-	-	4,004	-
5b.2	Subtotal Period 5b Additional Costs	-	1,447	-	0	-	-	24	311	1,782	-	690	1,093	-	-	-	-	-	-	9,416	80

Table D-1
Diablo Canyon Unit 1
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 5b Collateral Costs																					
5b.3.1	Small tool allowance	-	190	-	-	-	-	-	40	231	-	-	231	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	190	-	-	-	-	-	40	231	-	-	231	-	-	-	-	-	-	-	-
Period 5b Period-Dependent Costs																					
5b.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	207	29	236	-	-	236	-	-	-	-	-	-	-	-
5b.4.3	*Heavy equipment rental*	-	6,420	-	-	-	-	-	1,359	7,778	-	-	7,778	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	273	58	330	-	-	330	-	-	-	-	-	-	-	-
5b.4.5	Security Staff Cost	-	-	-	-	-	-	338	72	410	-	-	410	-	-	-	-	-	-	-	5,343
5b.4.6	DOC Staff Cost	-	-	-	-	-	-	6,581	1,393	7,974	-	-	7,974	-	-	-	-	-	-	-	81,211
5b.4.7	Utility Staff Cost	-	-	-	-	-	-	1,713	362	2,075	-	-	2,075	-	-	-	-	-	-	-	27,783
5b.4	Subtotal Period 5b Period-Dependent Costs	-	6,420	-	-	-	-	9,111	3,272	18,803	-	-	18,803	-	-	-	-	-	-	-	114,337
5b.0	TOTAL PERIOD 5b COST	-	24,290	-	0	-	-	9,322	7,099	40,711	227	690	39,795	-	-	-	-	-	-	165,939	115,977
PERIOD 5 TOTALS		-	24,290	-	0	-	-	9,322	7,099	40,711	227	690	39,795	-	-	-	-	-	-	165,939	115,977
TOTAL COST TO DECOMMISSION		9,749	87,150	11,919	11,487	41,455	42,730	403,420	152,002	759,912	510,340	203,537	46,035	416,013	130,665	2,754	584	433	27,421,720	1,002,381	2,999,686

TOTAL COST TO DECOMMISSION WITH 25% CONTINGENCY:	**$759,912**	**thousands of 2008 dollars**
TOTAL NRC LICENSE TERMINATION COST IS 67.16% OR:	**$510,340**	**thousands of 2008 dollars**
SPENT FUEL MANAGEMENT COST IS 26.78% OR:	**$203,537**	**thousands of 2008 dollars**
NON-NUCLEAR DEMOLITION COST IS 6.06% OR:	***$46,035***	***thousands of 2008 dollars***
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	**134,004**	**Cubic Feet**
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	**433**	**Cubic Feet**
TOTAL SCRAP METAL REMOVED:	**48,060**	**Tons**
TOTAL CRAFT LABOR REQUIREMENTS:	**1,002,381**	**Man-hours**

End Notes:
n/a - indicates that this activity not charged as decommissioning expense.
a - indicates that this activity performed by decommissioning staff.
0 - indicates that this value is less than 0.5 but is non-zero.
a cell containing " - " indicates a zero value

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1a - Shutdown through Transition																					
Period 1a Direct Decommissioning Activities																					
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	414	179	593	593	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
1a.1.3	Notification of Cessation of Operations									a											
1a.1.4	Remove fuel & source material									n/a											
1a.1.5	Notification of Permanent Defueling									a											
1a.1.6	Deactivate plant systems & process waste									a											
1a.1.7	Prepare and submit PSDAR	-	-	-	-	-	-	103	22	125	125	-	-	-	-	-	-	-	-	-	855
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
1a.1.9	Perform detailed rad survey									a											
1a.1.10	Estimate by-product inventory	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1a.1.11	End product description	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	77	17	94	94	-	-	-	-	-	-	-	-	-	641
1a.1.13	Define major work sequence	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
1a.1.14	Perform SER and EA	-	-	-	-	-	-	159	34	193	193	-	-	-	-	-	-	-	-	-	1,326
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	256	55	312	312	-	-	-	-	-	-	-	-	-	2,138
Activity Specifications																					
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	252	55	307	307	-	-	-	-	-	-	-	-	-	2,104
1a.1.16.2	Plant systems	-	-	-	-	-	-	214	46	260	260	-	-	-	-	-	-	-	-	-	1,782
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	160	35	195	195	-	-	-	-	-	-	-	-	-	1,334
1a.1.16.4	Waste management	-	-	-	-	-	-	103	22	125	125	-	-	-	-	-	-	-	-	-	855
1a.1.16.5	Facility and site dormancy	-	-	-	-	-	-	103	22	125	125	-	-	-	-	-	-	-	-	-	855
1a.1.16	Total	-	-	-	-	-	-	831	180	1,010	1,010	-	-	-	-	-	-	-	-	-	6,930
Detailed Work Procedures																					
1a.1.17.1	Plant systems	-	-	-	-	-	-	61	13	74	74	-	-	-	-	-	-	-	-	-	506
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	62	13	75	75	-	-	-	-	-	-	-	-	-	513
1a.1.17	Total	-	-	-	-	-	-	122	26	149	149	-	-	-	-	-	-	-	-	-	1,019
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	5	1	6	6	-	-	-	-	-	-	-	-	-	43
1a.1.19	Drain/de-energize non-cont. systems									a											
1a.1.20	Drain & dry NSSS									a											
1a.1.21	Drain/de-energize contaminated systems									a											
1a.1.22	Decon/secure contaminated systems									a											
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	2,254	577	2,830	2,830	-	-	-	-	-	-	-	-	-	15,347
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,649	357	2,006	-	2,006	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,649	357	2,006	-	2,006	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	1,195	172	1,367	1,367	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	101	15	115	115	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	486	-	-	-	-	-	175	661	661	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	106	596	596	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	11	4	-	38	-	16	70	70	-	-	-	610	-	-	-	12,190	22	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	287	1,617	1,617	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC ISFSI Fees	-	-	-	-	-	-	191	-	191	-	191	-	-	-	-	-	-	-	-	-
1a.4.8	NRC Fees	-	-	-	-	-	-	471	68	539	539	-	-	-	-	-	-	-	-	-	-
1a.4.9	Emergency Planning Fees	-	-	-	-	-	-	1,258	181	1,439	-	1,439	-	-	-	-	-	-	-	-	-
1a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	735	159	894	-	894	-	-	-	-	-	-	-	-	-
1a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	141	30	171	-	171	-	-	-	-	-	-	-	-	-
1a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	4,385	948	5,333	-	5,333	-	-	-	-	-	-	-	-	-
1a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	286	62	348	-	348	-	-	-	-	-	-	-	-	-

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1a Period-Dependent Costs (continued)																					
1a.4.14	Security Staff Cost	-	-	-	-	-	-	10,231	2,212	12,443	12,443	-	-	-	-	-	-	-	-	-	157,471
1a.4.15	Utility Staff Cost	-	-	-	-	-	-	26,403	5,707	32,110	32,110	-	-	-	-	-	-	-	-	-	423,400
1a.4	Subtotal Period 1a Period-Dependent Costs	-	976	11	4	-	38	46,726	10,139	57,894	49,518	8,376	-	-	610	-	-	-	12,190	22	580,871
1a.0	TOTAL PERIOD 1a COST	-	976	11	4	-	38	50,629	11,072	62,730	52,348	10,382	-	-	610	-	-	-	12,190	22	596,218
PERIOD 1b - SAFSTOR Limited DECON Activities																					
Period 1b Direct Decommissioning Activities																					
Decontamination of Site Buildings																					
1b.1.1.1	*Reactor	1,501	-	-	-	-	-	-	1,081	2,582	2,251	-	331	-	-	-	-	-	-	26,111	-
1b.1.1.2	Auxiliary	1,010	-	-	-	-	-	-	728	1,738	1,516	-	223	-	-	-	-	-	-	17,740	-
1b.1.1.3	Capital Additions 85-2004	296	-	-	-	-	-	-	213	509	444	-	65	-	-	-	-	-	-	5,109	-
1b.1.1.4	Containment Penetration Area	226	-	-	-	-	-	-	163	388	339	-	50	-	-	-	-	-	-	3,917	-
1b.1.1.5	Fuel Handling	575	-	-	-	-	-	-	414	989	863	-	127	-	-	-	-	-	-	9,816	-
1b.1.1	Totals	3,608	-	-	-	-	-	-	2,599	6,207	5,411	-	796	-	-	-	-	-	-	62,693	-
1b.1	Subtotal Period 1b Activity Costs	3,608	-	-	-	-	-	-	2,599	6,207	5,411	-	796	-	-	-	-	-	-	62,693	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	935	-	-	-	-	-	-	202	1,137	1,137	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process liquid waste	180	-	82	331	-	312	-	325	1,230	1,230	-	-	-	1,223	-	-	-	73,380	238	-
1b.3.3	Small tool allowance	-	69	-	-	-	-	-	15	84	84	-	-	-	-	-	-	-	-	-	-
1b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	252	54	307	-	307	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,115	69	82	331	-	312	252	597	2,758	2,452	307	-	-	1,223	-	-	-	73,380	238	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	1,467	-	-	-	-	-	-	529	1,996	1,996	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	301	43	345	345	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	25	4	29	29	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	406	-	-	-	-	-	146	552	552	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	123	-	-	-	-	-	27	150	150	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	16	6	-	54	-	23	100	100	-	-	-	874	-	-	-	17,477	32	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	335	72	408	408	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC ISFSI Fees	-	-	-	-	-	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
1b.4.9	NRC Fees	-	-	-	-	-	-	119	17	136	136	-	-	-	-	-	-	-	-	-	-
1b.4.10	Emergency Planning Fees	-	-	-	-	-	-	187	27	214	-	214	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	185	40	225	-	225	-	-	-	-	-	-	-	-	-
1b.4.12	ISFSI - Operating Costs	-	-	-	-	-	-	36	8	43	-	43	-	-	-	-	-	-	-	-	-
1b.4.13	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	962	208	1,170	-	1,170	-	-	-	-	-	-	-	-	-
1b.4.14	ISFSI - Fixed Costs	-	-	-	-	-	-	72	16	88	-	88	-	-	-	-	-	-	-	-	-
1b.4.15	Security Staff Cost	-	-	-	-	-	-	2,579	557	3,136	3,136	-	-	-	-	-	-	-	-	-	39,691
1b.4.16	Utility Staff Cost	-	-	-	-	-	-	6,655	1,439	8,093	8,093	-	-	-	-	-	-	-	-	-	106,720
1b.4	Subtotal Period 1b Period-Dependent Costs	1,467	529	16	6	-	54	11,504	3,156	16,733	14,945	1,788	-	-	874	-	-	-	17,477	32	146,411
1b.0	TOTAL PERIOD 1b COST	6,189	599	99	337	-	366	11,756	6,352	25,698	22,807	2,095	796	-	2,097	-	-	-	90,856	62,963	146,411
PERIOD 1c - Preparations for SAFSTOR Dormancy																					
Period 1c Direct Decommissioning Activities																					
1c.1.1	Prepare support equipment for storage	-	431	-	-	-	-	-	93	524	524	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	42	-	-	-	-	-	9	51	51	-	-	-	-	-	-	-	-	700	-
1c.1.3	Interim survey prior to dormancy	-	-	-	-	-	-	733	317	1,050	1,050	-	-	-	-	-	-	-	-	12,834	-
1c.1.4	Secure building accesses									a											
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	30	6	36	36	-	-	-	-	-	-	-	-	-	249

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
1c.1	Subtotal Period 1c Activity Costs	-	472	-	-	-	-	763	425	1,661	1,661	-	-	-	-	-	-	-	-	16,534	249
Period 1c Additional Costs																					
1c.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	6,272	1,356	7,627	7,627	-	-	-	-	-	-	-	-	-	-
1c.2.2	Hazardous Waste Management	-	-	-	-	-	-	590	128	718	718	-	-	-	-	-	-	-	-	-	-
1c.2.3	Mixed Waste Management	-	-	-	-	-	-	912	197	1,109	1,109	-	-	-	-	-	-	-	-	-	-
1c.2	Subtotal Period 1c Additional Costs	-	-	-	-	-	-	7,773	1,680	9,454	9,454	-	-	-	-	-	-	-	-	-	-
Period 1c Collateral Costs																					
1c.3.1	Process liquid waste	208	-	95	383	-	361	-	376	1,422	1,422	-	-	-	1,414	-	-	-	84,861	276	-
1c.3.2	Small tool allowance	-	5	-	-	-	-	-	1	5	5	-	-	-	-	-	-	-	-	-	-
1c.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	252	54	307	-	307	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	208	5	95	383	-	361	252	431	1,734	1,428	307	-	-	1,414	-	-	-	84,861	276	-
Period 1c Period-Dependent Costs																					
1c.4.1	Insurance	-	-	-	-	-	-	301	43	345	345	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	25	4	29	29	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	198	-	-	-	-	-	71	270	270	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	123	-	-	-	-	-	27	150	150	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	3	1	-	10	-	4	18	18	-	-	-	154	-	-	-	3,073	6	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	335	72	408	408	-	-	-	-	-	-	-	-	-	-
1c.4.7	NRC ISFSI Fees	-	-	-	-	-	-	48	-	48	-	48	-	-	-	-	-	-	-	-	-
1c.4.8	NRC Fees	-	-	-	-	-	-	119	17	136	136	-	-	-	-	-	-	-	-	-	-
1c.4.9	Emergency Planning Fees	-	-	-	-	-	-	187	27	214	-	214	-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	185	40	225	-	225	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	36	8	43	-	43	-	-	-	-	-	-	-	-	-
1c.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	957	207	1,164	-	1,164	-	-	-	-	-	-	-	-	-
1c.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	72	16	88	-	88	-	-	-	-	-	-	-	-	-
1c.4.14	Security Staff Cost	-	-	-	-	-	-	2,579	557	3,136	3,136	-	-	-	-	-	-	-	-	-	39,691
1c.4.15	Utility Staff Cost	-	-	-	-	-	-	6,655	1,439	8,093	8,093	-	-	-	-	-	-	-	-	-	106,720
1c.4	Subtotal Period 1c Period-Dependent Costs	-	322	3	1	-	10	11,500	2,532	14,367	12,584	1,783	-	-	154	-	-	-	3,073	6	146,411
1c.0	TOTAL PERIOD 1c COST	208	799	98	384	-	370	20,288	5,069	27,216	25,126	2,090	-	-	1,568	-	-	-	87,933	16,815	146,661
PERIOD 1 TOTALS		6,397	2,373	208	725	-	774	82,673	22,493	115,644	100,282	14,566	796	-	4,274	-	-	-	190,980	79,801	889,290
PERIOD 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																					
Period 2a Direct Decommissioning Activities																					
2a.1.1	Quarterly Inspection									a											
2a.1.2	Semi-annual environmental survey									a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	36	8	44	-	44	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	1,341	483	1,825	-	1,825	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	1,378	491	1,869	-	1,869	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	11,535	2,494	14,029	-	14,029	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	11,535	2,494	14,029	-	14,029	-	-	-	-	-	-	-	-	-
Period 2a Period-Dependent Costs																					
2a.4.1	Insurance	-	-	-	-	-	-	4,703	678	5,381	-	5,381	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	1,076	155	1,231	-	1,231	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	1,204	-	-	-	-	-	434	1,637	-	1,637	-	-	-	-	-	-	-	-	-
2a.4.4	Disposal of DAW generated	-	-	83	31	-	273	-	117	504	-	504	-	-	4,403	-	-	-	88,054	160	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	2,838	613	3,452	-	3,452	-	-	-	-	-	-	-	-	-
2a.4.6	NRC ISFSI Fees	-	-	-	-	-	-	2,034	-	2,034	-	2,034	-	-	-	-	-	-	-	-	-
2a.4.7	NRC Fees	-	-	-	-	-	-	1,907	275	2,182	-	2,182	-	-	-	-	-	-	-	-	-

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2a Period-Dependent Costs (continued)																					
2a.4.8	Emergency Planning Fees	-	-	-	-	-	-	4,275	616	4,891	-	4,891	-	-	-	-	-	-	-	-	-
2a.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	4,967	1,074	6,041	-	6,041	-	-	-	-	-	-	-	-	-
2a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	7,840	1,695	9,535	-	9,535	-	-	-	-	-	-	-	-	-
2a.4.11	ISFSI - Operating Costs	-	-	-	-	-	-	1,504	325	1,829	-	1,829	-	-	-	-	-	-	-	-	-
2a.4.12	Spent Fuel Storage/Capital Equipment	-	-	-	-	-	-	52,049	11,251	63,301	-	63,301	-	-	-	-	-	-	-	-	-
2a.4.13	ISFSI - Fixed Costs	-	-	-	-	-	-	3,057	661	3,718	-	3,718	-	-	-	-	-	-	-	-	-
2a.4.14	Security Staff Cost	-	-	-	-	-	-	77,844	16,827	94,672	-	94,672	-	-	-	-	-	-	-	-	1,185,193
2a.4.15	Utility Staff Cost	-	-	-	-	-	-	57,486	12,427	69,913	-	69,913	-	-	-	-	-	-	-	-	879,157
2a.4	Subtotal Period 2a Period-Dependent Costs	-	1,204	83	31	-	273	221,582	47,148	270,320	-	270,320	-	-	4,403	-	-	-	88,054	160	2,064,350
2a.0	TOTAL PERIOD 2a COST	-	1,204	83	31	-	273	234,495	50,133	286,218	-	286,218	-	-	4,403	-	-	-	88,054	160	2,064,350
PERIOD 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																					
Period 2b Direct Decommissioning Activities																					
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3	Prepare reports									a											
2b.1.4	Bituminous roof replacement	-	-	-	-	-	-	48	10	59	-	59	-	-	-	-	-	-	-	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	1,779	641	2,420	-	2,420	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	1,827	651	2,478	-	2,478	-	-	-	-	-	-	-	-	-
Period 2b Period-Dependent Costs																					
2b.4.1	Insurance	-	-	-	-	-	-	5,438	784	6,221	-	6,221	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	1,427	206	1,633	-	1,633	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	1,339	-	-	-	-	-	482	1,821	-	1,821	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	102	38	-	337	-	144	622	-	622	-	-	5,438	-	-	-	108,754	198	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	1,882	407	2,288	-	2,288	-	-	-	-	-	-	-	-	-
2b.4.6	NRC ISFSI Fees	-	-	-	-	-	-	2,697	-	2,697	-	2,697	-	-	-	-	-	-	-	-	-
2b.4.7	NRC Fees	-	-	-	-	-	-	2,529	364	2,893	-	2,893	-	-	-	-	-	-	-	-	-
2b.4.8	Emergency Planning Fees	-	-	-	-	-	-	5,270	760	6,030	-	6,030	-	-	-	-	-	-	-	-	-
2b.4.9	Spent Fuel Transfer - Pool or ISFSI to DOE	-	-	-	-	-	-	6,333	1,369	7,702	-	7,702	-	-	-	-	-	-	-	-	-
2b.4.10	ISFSI - Operating Costs	-	-	-	-	-	-	1,994	431	2,425	-	2,425	-	-	-	-	-	-	-	-	-
2b.4.11	ISFSI - Fixed Costs	-	-	-	-	-	-	4,054	876	4,930	-	4,930	-	-	-	-	-	-	-	-	-
2b.4.12	Security Staff Cost	-	-	-	-	-	-	54,202	11,717	65,918	-	65,918	-	-	-	-	-	-	-	-	796,886
2b.4.13	Utility Staff Cost	-	-	-	-	-	-	30,143	6,516	36,659	-	36,659	-	-	-	-	-	-	-	-	472,229
2b.4	Subtotal Period 2b Period-Dependent Costs	-	1,339	102	38	-	337	115,968	24,056	141,839	-	141,839	-	-	5,438	-	-	-	108,754	198	1,269,114
2b.0	TOTAL PERIOD 2b COST	-	1,339	102	38	-	337	117,795	24,707	144,318	-	144,318	-	-	5,438	-	-	-	108,754	198	1,269,114
PERIOD 2c - SAFSTOR Dormancy without Spent Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
2c.1.1	Quarterly Inspection									a											
2c.1.2	Semi-annual environmental survey									a											
2c.1.3	Prepare reports									a											
2c.1.4	Bituminous roof replacement	-	-	-	-	-	-	3	1	4	4	-	-	-	-	-	-	-	-	-	-
2c.1.5	Maintenance supplies	-	-	-	-	-	-	114	41	156	156	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	117	42	159	159	-	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	334	48	382	382	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	92	13	105	105	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	78	-	-	-	-	-	28	106	106	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	6	2	-	21	-	9	38	38	-	-	-	336	-	-	-	6,728	12	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	121	26	147	147	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	155	22	178	178	-	-	-	-	-	-	-	-	-	-
2c.4.7	Utility Staff Cost	-	-	-	-	-	-	441	95	537	537	-	-	-	-	-	-	-	-	-	7,589

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
2c.4	Subtotal Period 2c Period-Dependent Costs	-	78	6	2	-	21	1,143	242	1,492	1,492	-	-	-	336	-	-	-	6,728	12	7,589
2c.0	TOTAL PERIOD 2c COST	-	78	6	2	-	21	1,261	284	1,652	1,652	-	-	-	336	-	-	-	6,728	12	7,589
PERIOD 2 TOTALS		-	2,620	191	71	-	631	353,550	75,124	432,188	1,652	430,536	-	-	10,177	-	-	-	203,536	371	3,341,053
PERIOD 3a - Reactivate Site Following SAFSTOR Dormancy																					
Period 3a Direct Decommissioning Activities																					
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	236	51	287	287	-	-	-	-	-	-	-	-	-	1,967
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	67	14	81	81	-	-	-	-	-	-	-	-	-	556
3a.1.6	Define major work sequence	-	-	-	-	-	-	384	83	468	468	-	-	-	-	-	-	-	-	-	3,207
3a.1.7	Perform SER and EA	-	-	-	-	-	-	159	34	193	193	-	-	-	-	-	-	-	-	-	1,326
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	256	55	312	312	-	-	-	-	-	-	-	-	-	2,138
3a.1.9	Prepare/submit License Termination Plan	-	-	-	-	-	-	210	45	255	255	-	-	-	-	-	-	-	-	-	1,751
3a.1.10	Receive NRC approval of termination plan									a											
Activity Specifications																					
3a.1.11.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	378	82	459	414	-	46	-	-	-	-	-	-	-	3,151
3a.1.11.2	Plant systems	-	-	-	-	-	-	214	46	260	234	-	26	-	-	-	-	-	-	-	1,782
3a.1.11.3	Reactor internals	-	-	-	-	-	-	364	79	443	443	-	-	-	-	-	-	-	-	-	3,036
3a.1.11.4	Reactor vessel	-	-	-	-	-	-	333	72	405	405	-	-	-	-	-	-	-	-	-	2,779
3a.1.11.5	Biological shield	-	-	-	-	-	-	26	6	31	31	-	-	-	-	-	-	-	-	-	214
3a.1.11.6	Steam generators	-	-	-	-	-	-	160	35	195	195	-	-	-	-	-	-	-	-	-	1,334
3a.1.11.7	Reinforced concrete	-	-	-	-	-	-	82	18	100	50	-	50	-	-	-	-	-	-	-	684
3a.1.11.8	Main Turbine	-	-	-	-	-	-	21	4	25	-	-	25	-	-	-	-	-	-	-	171
3a.1.11.9	Main Condensers	-	-	-	-	-	-	21	4	25	-	-	25	-	-	-	-	-	-	-	171
3a.1.11.10	Plant structures & buildings	-	-	-	-	-	-	160	35	195	97	-	97	-	-	-	-	-	-	-	1,334
3a.1.11.11	Waste management	-	-	-	-	-	-	236	51	287	287	-	-	-	-	-	-	-	-	-	1,967
3a.1.11.12	Facility & site closeout	-	-	-	-	-	-	46	10	56	28	-	28	-	-	-	-	-	-	-	385
3a.1.11	Total	-	-	-	-	-	-	2,039	441	2,480	2,183	-	297	-	-	-	-	-	-	-	17,009
Planning & Site Preparations																					
3a.1.12	Prepare dismantling sequence	-	-	-	-	-	-	123	27	150	150	-	-	-	-	-	-	-	-	-	1,026
3a.1.13	Plant prep. & temp. svces	-	-	-	-	-	-	2,700	584	3,284	3,284	-	-	-	-	-	-	-	-	-	-
3a.1.14	Design water clean-up system	-	-	-	-	-	-	72	16	87	87	-	-	-	-	-	-	-	-	-	599
3a.1.15	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,100	454	2,554	2,554	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	63	14	77	77	-	-	-	-	-	-	-	-	-	526
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	8,527	1,843	10,370	10,073	-	297	-	-	-	-	-	-	-	31,088
Period 3a Period-Dependent Costs																					
3a.4.1	Insurance	-	-	-	-	-	-	367	53	420	420	-	-	-	-	-	-	-	-	-	-
3a.4.2	Property taxes	-	-	-	-	-	-	101	15	115	115	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	403	-	-	-	-	-	145	548	548	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	490	-	-	-	-	-	106	596	596	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	9	3	-	30	-	13	55	55	-	-	-	481	-	-	-	9,613	18	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	1,330	287	1,617	1,617	-	-	-	-	-	-	-	-	-	-
3a.4.7	NRC Fees	-	-	-	-	-	-	214	31	245	245	-	-	-	-	-	-	-	-	-	-
3a.4.8	Security Staff Cost	-	-	-	-	-	-	396	86	482	482	-	-	-	-	-	-	-	-	-	6,257
3a.4.9	Utility Staff Cost	-	-	-	-	-	-	12,270	2,652	14,922	14,922	-	-	-	-	-	-	-	-	-	200,229
3a.4	Subtotal Period 3a Period-Dependent Costs	-	893	9	3	-	30	14,678	3,388	19,001	19,001	-	-	-	481	-	-	-	9,613	18	206,486
3a.0	TOTAL PERIOD 3a COST	-	893	9	3	-	30	23,205	5,231	29,371	29,074	-	297	-	481	-	-	-	9,613	18	237,573

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 3b - Decommissioning Preparations																					
Period 3b Direct Decommissioning Activities																					
Detailed Work Procedures																					
3b.1.1.1	Plant systems	-	-	-	-	-	-	243	52	295	266	-	30	-	-	-	-	-	-	-	2,024
3b.1.1.2	Reactor internals	-	-	-	-	-	-	128	28	156	156	-	-	-	-	-	-	-	-	-	1,069
3b.1.1.3	Remaining buildings	-	-	-	-	-	-	69	15	84	21	-	63	-	-	-	-	-	-	-	577
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	51	11	62	62	-	-	-	-	-	-	-	-	-	428
3b.1.1.7	Reactor vessel	-	-	-	-	-	-	186	40	226	226	-	-	-	-	-	-	-	-	-	1,552
3b.1.1.8	Facility closeout	-	-	-	-	-	-	62	13	75	37	-	37	-	-	-	-	-	-	-	513
3b.1.1.9	Missile shields	-	-	-	-	-	-	23	5	28	28	-	-	-	-	-	-	-	-	-	192
3b.1.1.10	Biological shield	-	-	-	-	-	-	62	13	75	75	-	-	-	-	-	-	-	-	-	513
3b.1.1.11	Steam generators	-	-	-	-	-	-	236	51	287	287	-	-	-	-	-	-	-	-	-	1,967
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	51	11	62	31	-	31	-	-	-	-	-	-	-	428
3b.1.1.13	Main Turbine	-	-	-	-	-	-	80	17	97	-	-	97	-	-	-	-	-	-	-	667
3b.1.1.14	Main Condensers	-	-	-	-	-	-	80	17	97	-	-	97	-	-	-	-	-	-	-	667
3b.1.1.15	Auxiliary building	-	-	-	-	-	-	140	30	170	153	-	17	-	-	-	-	-	-	-	1,167
3b.1.1.16	Reactor building	-	-	-	-	-	-	140	30	170	153	-	17	-	-	-	-	-	-	-	1,167
3b.1.1	Total	-	-	-	-	-	-	1,653	357	2,010	1,620	-	390	-	-	-	-	-	-	-	13,787
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,653	357	2,010	1,620	-	390	-	-	-	-	-	-	-	13,787
Period 3b Additional Costs																					
3b.2.1	Site Characterization	-	-	-	-	-	-	1,945	841	2,786	2,786	-	-	-	-	-	-	-	-	10,690	4,024
3b.2	Subtotal Period 3b Additional Costs	-	-	-	-	-	-	1,945	841	2,786	2,786	-	-	-	-	-	-	-	-	10,690	4,024
Period 3b Collateral Costs																					
3b.3.1	Decon equipment	935	-	-	-	-	-	-	202	1,137	1,137	-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,395	302	1,697	1,697	-	-	-	-	-	-	-	-	-	-
3b.3.3	Pipe cutting equipment	-	1,000	-	-	-	-	-	216	1,216	1,216	-	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	935	1,000	-	-	-	-	1,395	720	4,050	4,050	-	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Decon supplies	29	-	-	-	-	-	-	10	39	39	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	221	32	253	253	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	51	7	58	58	-	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	218	-	-	-	-	-	79	297	297	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	246	-	-	-	-	-	53	299	299	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	5	2	-	16	-	7	30	30	-	-	-	266	-	-	-	5,315	10	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	667	144	811	811	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	107	15	123	123	-	-	-	-	-	-	-	-	-	-
3b.4.9	Security Staff Cost	-	-	-	-	-	-	199	43	241	241	-	-	-	-	-	-	-	-	-	3,137
3b.4.10	DOC Staff Cost	-	-	-	-	-	-	3,458	747	4,205	4,205	-	-	-	-	-	-	-	-	-	42,874
3b.4.11	Utility Staff Cost	-	-	-	-	-	-	6,152	1,330	7,482	7,482	-	-	-	-	-	-	-	-	-	100,389
3b.4	Subtotal Period 3b Period-Dependent Costs	29	464	5	2	-	16	10,854	2,468	13,837	13,837	-	-	-	266	-	-	-	5,315	10	146,400
3b.0	TOTAL PERIOD 3b COST	964	1,464	5	2	-	16	15,847	4,386	22,684	22,294	-	390	-	266	-	-	-	5,315	10,700	164,211
PERIOD 3 TOTALS		964	2,356	14	5	-	46	39,052	9,617	52,055	51,368	-	687	-	746	-	-	-	14,927	10,717	401,785

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 4a - Large Component Removal																					
Period 4a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
4a.1.1.1	Reactor Coolant Piping	66	259	40	32	60	690	-	415	1,562	1,562	-	-	214	1,927	-	-	-	256,781	5,614	-
4a.1.1.2	Pressurizer Quench Tank	7	26	6	5	9	97	-	53	204	204	-	-	33	296	-	-	-	36,557	596	-
4a.1.1.3	Reactor Coolant Pumps & Motors	26	101	44	121	-	1,358	-	576	2,225	2,225	-	-	-	5,388	-	-	-	871,200	3,760	-
4a.1.1.4	Pressurizer	8	59	454	295	-	620	-	380	1,817	1,817	-	-	-	2,460	-	-	-	269,821	1,782	-
4a.1.1.5	Steam Generators	85	3,846	1,858	1,886	2,974	5,768	-	4,843	21,260	21,260	-	-	37,344	22,887	-	-	-	3,128,906	20,508	1,125
4a.1.1.6	Retired Steam Generator Units	-	-	1,858	1,886	2,974	5,768	-	3,396	15,882	15,882	-	-	37,344	22,887	-	-	-	3,128,906	10,800	1,125
4a.1.1.7	CRDMs/ICIs/Service Structure Removal	35	90	221	29	39	202	-	177	792	792	-	-	419	3,362	-	-	-	83,603	2,134	-
4a.1.1.8	Reactor Vessel Internals	78	2,023	3,805	563	-	3,362	203	6,284	16,319	16,319	-	-	-	2,241	376	584	-	351,463	24,250	1,102
4a.1.1.9	Vessel & Internals GTCC Disposal	-	-	-	-	-	8,952	-	1,935	10,887	10,887	-	-	-	-	-	-	433	85,510	-	-
4a.1.1.10	Reactor Vessel	86	3,952	1,361	633	-	8,565	203	11,266	26,065	26,065	-	-	-	6,481	2,379	-	-	964,972	24,250	1,102
4a.1.1	Totals	390	10,357	9,648	5,449	6,057	35,381	406	29,326	97,015	97,015	-	-	75,354	67,929	2,754	584	433	9,177,718	93,695	4,454
Removal of Major Equipment																					
4a.1.2	Main Turbine/Generator	-	470	153	113	925	-	-	416	2,077	2,077	-	-	8,096	-	-	-	-	364,306	8,312	-
4a.1.3	Main Condensers	-	1,370	145	107	875	-	-	727	3,223	3,223	-	-	7,657	-	-	-	-	344,574	24,147	-
Cascading Costs from Clean Building Demolition																					
4a.1.4.1	*Reactor	-	1,208	-	-	-	-	-	261	1,469	1,469	-	-	-	-	-	-	-	-	13,127	-
4a.1.4.2	Auxiliary	-	652	-	-	-	-	-	141	793	793	-	-	-	-	-	-	-	-	7,054	-
4a.1.4.3	Containment Penetration Area	-	66	-	-	-	-	-	14	80	80	-	-	-	-	-	-	-	-	704	-
4a.1.4.4	Radwaste Storage	-	82	-	-	-	-	-	18	99	99	-	-	-	-	-	-	-	-	918	-
4a.1.4.5	Fuel Handling	-	175	-	-	-	-	-	38	213	213	-	-	-	-	-	-	-	-	1,746	-
4a.1.4	Totals	-	2,183	-	-	-	-	-	472	2,655	2,655	-	-	-	-	-	-	-	-	23,550	-
Disposal of Plant Systems																					
4a.1.5.1	Auxiliary Steam	-	128	3	31	252	-	-	108	522	522	-	-	2,440	-	-	-	-	99,082	2,123	-
4a.1.5.2	Auxiliary Steam (RCA)	-	109	2	14	118	-	-	68	312	312	-	-	1,146	-	-	-	-	46,536	1,820	-
4a.1.5.3	Condensate System	-	1,031	62	546	4,477	-	-	1,466	7,582	7,582	-	-	43,400	-	-	-	-	1,762,487	17,105	-
4a.1.5.4	Condensate System (Insulated)	-	388	21	181	1,481	-	-	502	2,573	2,573	-	-	14,362	-	-	-	-	583,235	6,634	-
4a.1.5.5	Containment Spray	-	183	10	84	688	-	-	234	1,198	1,198	-	-	6,667	-	-	-	-	270,737	3,135	-
4a.1.5.6	Extraction Steam & Heater Drip	-	391	16	137	1,126	-	-	416	2,086	2,086	-	-	10,916	-	-	-	-	443,294	6,490	-
4a.1.5.7	Feedwater System	-	93	13	112	919	-	-	258	1,395	1,395	-	-	8,906	-	-	-	-	361,684	1,645	-
4a.1.5.8	Feedwater System (Insulated)	-	137	-	-	-	-	-	30	167	-	-	167	-	-	-	-	-	-	2,547	-
4a.1.5.9	Feedwater System (RCA Insulated)	-	93	3	24	197	-	-	82	398	398	-	-	1,907	-	-	-	-	77,448	1,601	-
4a.1.5.10	Feedwater System (RCA)	-	4	0	1	10	-	-	4	20	20	-	-	100	-	-	-	-	4,076	76	-
4a.1.5.11	NSSS Sampling	-	115	4	4	15	34	-	58	230	230	-	-	148	137	-	-	-	17,622	2,155	-
4a.1.5.12	NSSS Sampling (Insulated)	-	34	1	0	-	5	-	14	54	54	-	-	-	21	-	-	-	1,798	643	-
4a.1.5.13	Nitrogen & Hydrogen	-	16	-	-	-	-	-	4	20	-	-	20	-	-	-	-	-	-	309	-
4a.1.5.14	Nitrogen & Hydrogen (Insulated)	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	16	-
4a.1.5.15	Nitrogen & Hydrogen (RCA Insulated)	-	4	0	0	2	-	-	2	8	8	-	-	17	-	-	-	-	705	72	-
4a.1.5.16	Nitrogen & Hydrogen (RCA)	-	81	0	4	34	-	-	38	158	158	-	-	330	-	-	-	-	13,400	1,362	-
4a.1.5.17	Oily Water Separator & TB Sump	-	24	1	5	41	-	-	19	89	89	-	-	402	-	-	-	-	16,329	394	-
4a.1.5.18	Saltwater System	-	153	-	-	-	-	-	33	186	-	-	186	-	-	-	-	-	-	2,779	-
4a.1.5.19	Turbine Steam Supply	-	1,240	81	714	5,855	-	-	1,878	9,768	9,768	-	-	56,760	-	-	-	-	2,305,038	20,783	-
4a.1.5.20	Turbine Steam Supply (RCA)	-	685	23	191	1,567	-	-	630	3,095	3,095	-	-	15,189	-	-	-	-	616,829	11,698	-
4a.1.5.21	Turbine and Generator	-	119	4	39	318	-	-	121	601	601	-	-	3,082	-	-	-	-	125,162	2,001	-
4a.1.5.22	Turbine and Generator (Insulated)	-	44	1	7	58	-	-	30	140	140	-	-	565	-	-	-	-	22,940	696	-
4a.1.5	Totals	-	5,075	245	2,093	17,158	40	-	5,995	30,606	30,231	-	375	166,336	158	-	-	-	6,768,403	86,082	-
4a.1.6	Scaffolding in support of decommissioning	-	4,178	26	19	149	22	-	1,553	5,946	5,946	-	-	1,300	86	-	-	-	65,784	34,066	-
4a.1	Subtotal Period 4a Activity Costs	390	23,632	10,217	7,781	25,164	35,442	406	38,489	141,521	141,147	-	375	258,742	68,173	2,754	584	433	16,720,780	269,852	4,454

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4a Additional Costs																					
4a.2.1	Retired Reactor Head	-	102	151	55	-	503	15	550	1,377	1,377	-	-	-	2,002	-	-	-	211,020	2,100	84
4a.2	Subtotal Period 4a Additional Costs	-	102	151	55	-	503	15	550	1,377	1,377	-	-	-	2,002	-	-	-	211,020	2,100	84
Period 4a Collateral Costs																					
4a.3.1	Process liquid waste	57	-	28	111	-	105	-	106	406	406	-	-	-	410	-	-	-	24,593	80	-
4a.3.2	Small tool allowance	-	283	-	-	-	-	-	61	344	309	-	34	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	57	283	28	111	-	105	-	168	750	716	-	34	-	410	-	-	-	24,593	80	-
Period 4a Period-Dependent Costs																					
4a.4.1	Decon supplies	79	-	-	-	-	-	-	29	108	108	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	610	88	698	698	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	140	20	160	144	-	16	-	-	-	-	-	-	-	-
4a.4.4	Health physics supplies	-	1,888	-	-	-	-	-	680	2,568	2,568	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	3,258	-	-	-	-	-	704	3,962	3,962	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	89	33	-	294	-	126	543	543	-	-	-	4,747	-	-	-	94,947	173	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	1,748	378	2,126	2,126	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	-	-	-	-	-	-	624	90	713	713	-	-	-	-	-	-	-	-	-	-
4a.4.9	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	532	115	646	646	-	-	-	-	-	-	-	-	-	-
4a.4.10	Security Staff Cost	-	-	-	-	-	-	6,076	1,313	7,389	7,389	-	-	-	-	-	-	-	-	-	90,179
4a.4.11	DOC Staff Cost	-	-	-	-	-	-	16,188	3,499	19,688	19,688	-	-	-	-	-	-	-	-	-	199,114
4a.4.12	Utility Staff Cost	-	-	-	-	-	-	22,742	4,916	27,658	27,658	-	-	-	-	-	-	-	-	-	360,714
4a.4	Subtotal Period 4a Period-Dependent Costs	79	5,146	89	33	-	294	48,658	11,958	66,258	66,242	-	16	-	4,747	-	-	-	94,947	173	650,007
4a.0	TOTAL PERIOD 4a COST	526	29,163	10,485	7,981	25,164	36,344	49,080	51,165	209,907	209,482	-	425	258,742	75,332	2,754	584	433	17,051,340	272,204	654,545
PERIOD 4b - Site Decontamination																					
Period 4b Direct Decommissioning Activities																					
4b.1.1	Remove spent fuel racks	432	47	136	34	-	659	-	592	1,901	1,901	-	-	-	2,621	-	-	-	222,759	962	-
Disposal of Plant Systems																					
4b.1.2.1	Building Services (Non-Power Block)	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	107	-
4b.1.2.2	Capital Additions 85-2002 (Clean)	-	382	-	-	-	-	-	83	464	-	-	464	-	-	-	-	-	-	7,035	-
4b.1.2.3	Capital Additions 85-2002 (contaminated)	-	338	5	40	331	-	-	202	916	916	-	-	3,206	-	-	-	-	130,192	5,628	-
4b.1.2.4	Chemical & Volume Control	-	731	40	83	547	312	-	518	2,230	2,230	-	-	5,298	1,263	-	-	-	320,521	12,471	-
4b.1.2.5	Chemical & Volume Control (Insulated)	-	283	15	14	62	117	-	163	653	653	-	-	604	464	-	-	-	63,950	4,681	-
4b.1.2.6	Component Cooling Water	-	161	-	-	-	-	-	35	196	-	-	196	-	-	-	-	-	-	2,984	-
4b.1.2.7	Component Cooling Water (RCA)	-	462	13	107	877	-	-	381	1,840	1,840	-	-	8,505	-	-	-	-	345,395	7,753	-
4b.1.2.8	Compressed Air	-	100	-	-	-	-	-	22	122	-	-	122	-	-	-	-	-	-	1,881	-
4b.1.2.9	Compressed Air (Insulated)	-	5	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	99	-
4b.1.2.10	Compressed Air (RCA Insulated)	-	23	0	1	11	-	-	11	46	46	-	-	108	-	-	-	-	4,393	387	-
4b.1.2.11	Compressed Air (RCA)	-	411	3	26	212	-	-	200	852	852	-	-	2,055	-	-	-	-	83,461	6,991	-
4b.1.2.12	Diesel Engine-Generator	-	116	-	-	-	-	-	25	141	-	-	141	-	-	-	-	-	-	2,089	-
4b.1.2.13	Diesel Engine-Generator (Insulated)	-	3	-	-	-	-	-	1	3	-	-	3	-	-	-	-	-	-	48	-
4b.1.2.14	Electrical (Clean)	-	2,645	-	-	-	-	-	572	3,217	-	-	3,217	-	-	-	-	-	-	47,918	-
4b.1.2.15	Electrical (Contaminated)	-	251	4	31	256	-	-	153	694	694	-	-	2,478	-	-	-	-	100,651	4,336	-
4b.1.2.16	Electrical (Contaminated) - FHB	-	77	1	6	48	-	-	39	171	171	-	-	463	-	-	-	-	18,804	1,330	-
4b.1.2.17	Electrical (RCA)	-	1,691	30	256	2,103	-	-	1,124	5,204	5,204	-	-	20,389	-	-	-	-	828,008	28,569	-
4b.1.2.18	Electrical (RCA)-FHB	-	521	6	53	434	-	-	294	1,309	1,309	-	-	4,211	-	-	-	-	171,029	8,801	-
4b.1.2.19	Fire Protection	-	293	10	91	750	-	-	289	1,433	1,433	-	-	7,268	-	-	-	-	295,145	4,992	-
4b.1.2.20	Fire Protection (RCA)	-	203	3	27	222	-	-	127	583	583	-	-	2,153	-	-	-	-	87,426	3,365	-
4b.1.2.21	Gaseous Radwaste	-	92	1	11	86	-	-	54	244	244	-	-	837	-	-	-	-	34,009	1,529	-
4b.1.2.22	HVAC (Clean Insulated)	-	34	-	-	-	-	-	7	41	-	-	41	-	-	-	-	-	-	662	-
4b.1.2.23	HVAC (Clean)	-	356	-	-	-	-	-	77	433	-	-	433	-	-	-	-	-	-	6,878	-
4b.1.2.24	HVAC (Contaminated Insulated)	-	172	3	26	210	-	-	113	524	524	-	-	2,038	-	-	-	-	82,759	2,603	-
4b.1.2.25	HVAC (Contaminated)	-	766	15	130	1,065	-	-	536	2,512	2,512	-	-	10,324	-	-	-	-	419,267	11,785	-
4b.1.2.26	HVAC (Contaminated) - FHB	-	171	3	27	225	-	-	117	544	544	-	-	2,182	-	-	-	-	88,616	2,617	-
4b.1.2.27	Liquid Radwaste	-	310	22	36	218	175	-	233	995	995	-	-	2,117	787	-	-	-	145,111	5,344	-

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4b Disposal of Plant Systems (continued)																					
4b.1.2.28	Liquid Radwaste (Insulated)	-	29	2	1	4	15	-	17	69	69	-	-	40	61	-	-	-	6,847	481	-
4b.1.2.29	Lube Oil Distribution & Purification	-	211	5	42	342	-	-	160	759	759	-	-	3,315	-	-	-	-	134,627	3,487	-
4b.1.2.30	Make-up Water	-	208	-	-	-	-	-	45	253	-	-	253	-	-	-	-	-	-	3,794	-
4b.1.2.31	Make-up Water (Insulated)	-	20	-	-	-	-	-	4	25	-	-	25	-	-	-	-	-	-	376	-
4b.1.2.32	Make-up Water (RCA Insulated)	-	25	0	3	24	-	-	15	68	68	-	-	237	-	-	-	-	9,606	423	-
4b.1.2.33	Make-up Water (RCA)	-	126	2	17	138	-	-	79	363	363	-	-	1,340	-	-	-	-	54,432	2,103	-
4b.1.2.34	Mechanical Department Equipment	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	19	-
4b.1.2.35	Miscellaneous Reactor Coolant	-	89	3	6	39	19	-	49	205	205	-	-	377	77	-	-	-	21,764	1,602	-
4b.1.2.36	Nuclear Steam Supply Sampling	-	14	0	1	8	-	-	7	30	30	-	-	74	-	-	-	-	3,017	227	-
4b.1.2.37	Nuclear Steam Supply Sampling (Insulated	-	6	0	0	3	-	-	3	13	13	-	-	32	-	-	-	-	1,293	97	-
4b.1.2.38	Residual Heat Removal	-	211	25	83	591	209	-	300	1,419	1,419	-	-	5,726	831	-	-	-	303,129	3,705	-
4b.1.2.39	Safety Injection	-	88	1	12	99	-	-	56	256	256	-	-	960	-	-	-	-	39,005	1,530	-
4b.1.2.40	Safety Injection (Insulated)	-	4	0	0	4	-	-	2	10	10	-	-	38	-	-	-	-	1,545	62	-
4b.1.2.41	Safety Injection (RCA Insulated)	-	30	1	4	35	-	-	19	90	90	-	-	342	-	-	-	-	13,901	495	-
4b.1.2.42	Safety Injection (RCA)	-	250	5	39	318	-	-	168	779	779	-	-	3,081	-	-	-	-	125,112	4,084	-
4b.1.2.43	Service Cooling Water	-	118	-	-	-	-	-	25	143	-	-	143	-	-	-	-	-	-	2,186	-
4b.1.2.44	Service Cooling Water (RCA)	-	29	1	4	35	-	-	19	88	88	-	-	342	-	-	-	-	13,881	478	-
4b.1.2.45	Sewer System Expansion	-	40	-	-	-	-	-	9	49	-	-	49	-	-	-	-	-	-	746	-
4b.1.2.46	Spent Fuel Pit Cooling	-	64	9	33	241	62	-	106	514	514	-	-	2,339	245	-	-	-	115,793	1,123	-
4b.1.2.47	Spent Fuel Pit Cooling - FHB	-	87	10	35	255	72	-	122	581	581	-	-	2,474	287	-	-	-	124,819	1,529	-
4b.1.2	Totals	-	12,253	237	1,244	9,795	981	-	6,584	31,094	25,992	-	5,101	94,955	4,015	-	-	-	4,187,504	211,427	-
4b.1.3	Scaffolding in support of decommissioning	-	6,267	39	29	223	32	-	2,329	8,919	8,919	-	-	1,949	129	-	-	-	98,676	51,099	-
Decontamination of Site Buildings																					
4b.1.4.1	*Reactor	1,371	1,504	345	341	426	1,365	-	2,237	7,588	7,588	-	-	4,128	17,997	-	-	-	1,944,618	46,746	-
4b.1.4.2	Auxiliary	961	474	89	87	232	1,204	-	1,379	4,428	4,428	-	-	2,251	4,824	-	-	-	498,290	23,409	-
4b.1.4.3	Capital Additions 85-2004	307	105	19	17	30	261	-	366	1,103	1,103	-	-	288	1,042	-	-	-	99,807	6,779	-
4b.1.4.4	Containment Penetration Area	237	140	23	28	120	299	-	364	1,212	1,212	-	-	1,164	1,197	-	-	-	148,207	6,147	-
4b.1.4.5	Radwaste Storage	5	39	9	8	8	130	-	69	268	268	-	-	75	521	-	-	-	47,028	616	-
4b.1.4.6	Fuel Handling	593	597	31	42	206	388	-	840	2,698	2,698	-	-	1,996	1,566	-	-	-	212,259	20,239	-
4b.1.4	Totals	3,473	2,860	518	521	1,021	3,647	-	5,255	17,297	17,297	-	-	9,903	27,146	-	-	-	2,950,208	103,935	-
4b.1	Subtotal Period 4b Activity Costs	3,905	21,427	931	1,828	11,039	5,320	-	14,761	59,211	54,109	-	5,101	106,807	33,911	-	-	-	7,459,147	367,424	-
Period 4b Additional Costs																					
4b.2.1	ISFSI License Termination	-	1,059	4	100	-	387	783	705	3,037	-	3,037	-	-	6,237	-	-	-	748,923	15,272	1,280
4b.2.2	License Termination Survey Planning	-	-	-	-	-	-	669	289	958	958	-	-	-	-	-	-	-	-	-	6,240
4b.2	Subtotal Period 4b Additional Costs	-	1,059	4	100	-	387	1,451	994	3,995	958	3,037	-	-	6,237	-	-	-	748,923	15,272	7,520
Period 4b Collateral Costs																					
4b.3.1	Process liquid waste	134	-	66	264	-	249	-	253	965	965	-	-	-	976	-	-	-	58,549	190	-
4b.3.2	Small tool allowance	-	426	-	-	-	-	-	92	518	518	-	-	-	-	-	-	-	-	-	-
4b.3.3	Decommissioning Equipment Disposition	-	-	121	107	686	100	-	225	1,239	1,239	-	-	6,000	397	-	-	-	303,726	88	-
4b.3	Subtotal Period 4b Collateral Costs	134	426	187	371	686	349	-	570	2,723	2,723	-	-	6,000	1,373	-	-	-	362,275	278	-
Period 4b Period-Dependent Costs																					
4b.4.1	Decon supplies	1,574	-	-	-	-	-	-	567	2,141	2,141	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	933	135	1,068	1,068	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	214	31	244	244	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,725	-	-	-	-	-	982	3,706	3,706	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,951	-	-	-	-	-	1,070	6,021	6,021	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	103	38	-	339	-	145	625	625	-	-	-	5,461	-	-	-	109,214	199	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,112	457	2,569	2,569	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	954	138	1,092	1,092	-	-	-	-	-	-	-	-	-	-
4b.4.9	Liquid Radwaste Processing Equipment/Services	-	-	-	-	-	-	814	176	990	990	-	-	-	-	-	-	-	-	-	-
4b.4.10	Security Staff Cost	-	-	-	-	-	-	9,300	2,010	11,310	11,310	-	-	-	-	-	-	-	-	-	138,036
4b.4.11	DOC Staff Cost	-	-	-	-	-	-	24,151	5,221	29,371	29,371	-	-	-	-	-	-	-	-	-	295,949

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4b Period-Dependent Costs (continued)																					
4b.4.12	Utility Staff Cost	-	-	-	-	-	-	32,975	7,128	40,103	40,103	-	-	-	-	-	-	-	-	-	521,223
4b.4	Subtotal Period 4b Period-Dependent Costs	1,574	7,676	103	38	-	339	71,452	18,058	99,239	99,239	-	-	-	5,461	-	-	-	109,214	199	955,207
4b.0	TOTAL PERIOD 4b COST	5,613	30,587	1,224	2,338	11,725	6,394	72,904	34,383	165,167	157,029	3,037	5,101	112,807	46,982	-	-	-	8,679,558	383,173	962,727
PERIOD 4e - License Termination																					
Period 4e Direct Decommissioning Activities																					
4e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	153	66	219	219	-	-	-	-	-	-	-	-	-	-
4e.1.2	Terminate license									a											
4e.1	Subtotal Period 4e Activity Costs	-	-	-	-	-	-	153	66	219	219	-	-	-	-	-	-	-	-	-	-
Period 4e Additional Costs																					
4e.2.1	License Termination Survey	-	-	-	-	-	-	11,808	5,105	16,913	16,913	-	-	-	-	-	-	-	-	209,457	3,120
4e.2	Subtotal Period 4e Additional Costs	-	-	-	-	-	-	11,808	5,105	16,913	16,913	-	-	-	-	-	-	-	-	209,457	3,120
Period 4e Collateral Costs																					
4e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,395	302	1,697	1,697	-	-	-	-	-	-	-	-	-	-
4e.3	Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	1,395	302	1,697	1,697	-	-	-	-	-	-	-	-	-	-
Period 4e Period-Dependent Costs																					
4e.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	1,240	-	-	-	-	-	447	1,687	1,687	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	7	2	-	22	-	9	40	40	-	-	-	351	-	-	-	7,025	13	-
4e.4.5	Plant energy budget	-	-	-	-	-	-	200	43	244	244	-	-	-	-	-	-	-	-	-	-
4e.4.6	NRC Fees	-	-	-	-	-	-	355	51	406	406	-	-	-	-	-	-	-	-	-	-
4e.4.7	Security Staff Cost	-	-	-	-	-	-	1,306	282	1,589	1,589	-	-	-	-	-	-	-	-	-	18,857
4e.4.8	DOC Staff Cost	-	-	-	-	-	-	4,840	1,046	5,887	5,887	-	-	-	-	-	-	-	-	-	57,357
4e.4.9	Utility Staff Cost	-	-	-	-	-	-	5,213	1,127	6,340	6,340	-	-	-	-	-	-	-	-	-	74,643
4e.4	Subtotal Period 4e Period-Dependent Costs	-	1,240	7	2	-	22	11,991	3,017	16,279	16,279	-	-	-	351	-	-	-	7,025	13	150,857
4e.0	TOTAL PERIOD 4e COST	-	1,240	7	2	-	22	25,347	8,490	35,107	35,107	-	-	-	351	-	-	-	7,025	209,470	153,977
PERIOD 4 TOTALS		6,139	60,990	11,716	10,321	36,889	42,759	147,330	94,038	410,181	401,618	3,037	5,526	371,549	122,665	2,754	584	433	25,737,920	864,847	1,771,249
PERIOD 5b - Site Restoration																					
Period 5b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
5b.1.1.1	*Reactor	-	6,873	-	-	-	-	-	1,486	8,359	-	-	8,359	-	-	-	-	-	-	74,901	-
5b.1.1.2	Administration	-	960	-	-	-	-	-	208	1,168	-	-	1,168	-	-	-	-	-	-	10,358	-
5b.1.1.3	Auxiliary	-	5,977	-	-	-	-	-	1,292	7,269	-	-	7,269	-	-	-	-	-	-	64,471	-
5b.1.1.4	Capital Additions 85-2004	-	3,915	-	-	-	-	-	846	4,761	-	-	4,761	-	-	-	-	-	-	47,403	-
5b.1.1.5	Chemical Storage	-	4	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	46	-
5b.1.1.6	Chlorination	-	8	-	-	-	-	-	2	10	-	-	10	-	-	-	-	-	-	99	-
5b.1.1.7	Circulating Water Tunnels	-	1,008	-	-	-	-	-	218	1,226	-	-	1,226	-	-	-	-	-	-	12,071	-
5b.1.1.8	Cold Machine Shop	-	357	-	-	-	-	-	77	435	-	-	435	-	-	-	-	-	-	3,785	-
5b.1.1.9	Communication	-	4	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	44	-
5b.1.1.10	Condensate Polishing/Technical Support	-	763	-	-	-	-	-	165	927	-	-	927	-	-	-	-	-	-	9,300	-
5b.1.1.11	Containment Penetration Area	-	615	-	-	-	-	-	133	748	-	-	748	-	-	-	-	-	-	6,565	-
5b.1.1.12	Discharge Structure	-	854	-	-	-	-	-	185	1,039	-	-	1,039	-	-	-	-	-	-	8,317	-
5b.1.1.13	Fabrication Shop	-	107	-	-	-	-	-	23	131	-	-	131	-	-	-	-	-	-	1,223	-
5b.1.1.14	Fire Pump House	-	5	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	55	-
5b.1.1.15	Hazardous Waste Storage Facility	-	35	-	-	-	-	-	8	42	-	-	42	-	-	-	-	-	-	430	-
5b.1.1.16	Intake Structure	-	4,868	-	-	-	-	-	1,052	5,920	-	-	5,920	-	-	-	-	-	-	46,364	-
5b.1.1.17	Maintenance Shop	-	330	-	-	-	-	-	71	401	-	-	401	-	-	-	-	-	-	3,444	-

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 5b Demolition of Remaining Site Buildings (continued)																					
5b.1.1.18	Miscellaneous Structures	-	57	-	-	-	-	-	12	69	-	-	69	-	-	-	-	-	-	673	-
5b.1.1.19	NPO Permanent Warehouse	-	1,221	-	-	-	-	-	264	1,484	-	-	1,484	-	-	-	-	-	-	14,093	-
5b.1.1.20	Ponds	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	24	-
5b.1.1.21	Portable Fire Pump & Fuel Cart	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	14	-
5b.1.1.22	Pretreatment	-	9	-	-	-	-	-	2	11	-	-	11	-	-	-	-	-	-	108	-
5b.1.1.23	Radwaste Storage	-	1,595	-	-	-	-	-	345	1,940	-	-	1,940	-	-	-	-	-	-	17,854	-
5b.1.1.24	Radwaste Storage Facility (Additional)	-	42	-	-	-	-	-	9	52	-	-	52	-	-	-	-	-	-	662	-
5b.1.1.25	Rotor Warehouse	-	742	-	-	-	-	-	160	902	-	-	902	-	-	-	-	-	-	9,938	-
5b.1.1.26	Security	-	303	-	-	-	-	-	65	368	-	-	368	-	-	-	-	-	-	3,944	-
5b.1.1.27	Security Buildings (Additional)	-	46	-	-	-	-	-	10	56	-	-	56	-	-	-	-	-	-	722	-
5b.1.1.28	Simulator	-	370	-	-	-	-	-	80	450	-	-	450	-	-	-	-	-	-	4,191	-
5b.1.1.29	Steam Generator Storage Facility	-	821	-	-	-	-	-	177	998	-	-	998	-	-	-	-	-	-	8,888	-
5b.1.1.30	Telephone Terminal	-	2	-	-	-	-	-	1	3	-	-	3	-	-	-	-	-	-	28	-
5b.1.1.31	Turbine	-	4,940	-	-	-	-	-	1,068	6,007	-	-	6,007	-	-	-	-	-	-	57,743	-
5b.1.1.32	Turbine Pedestal	-	1,212	-	-	-	-	-	262	1,474	-	-	1,474	-	-	-	-	-	-	11,300	-
5b.1.1.33	Vehicle Maintenance	-	30	-	-	-	-	-	7	37	-	-	37	-	-	-	-	-	-	367	-
5b.1.1.34	Waste Water Holding & Treatment Facility	-	20	-	-	-	-	-	4	25	-	-	25	-	-	-	-	-	-	238	-
5b.1.1.35	Fuel Handling	-	1,689	-	-	-	-	-	365	2,054	-	-	2,054	-	-	-	-	-	-	16,750	-
5b.1.1	Totals	-	39,784	-	-	-	-	-	8,600	48,384	-	-	48,384	-	-	-	-	-	-	436,410	-
Site Closeout Activities																					
5b.1.2	Remove Rubble	-	1,470	-	-	-	-	-	318	1,787	-	-	1,787	-	-	-	-	-	-	8,191	-
5b.1.3	Grade & landscape site	-	2,272	-	-	-	-	-	491	2,763	-	-	2,763	-	-	-	-	-	-	4,587	-
5b.1.4	Final report to NRC	-	-	-	-	-	-	80	17	97	97	-	-	-	-	-	-	-	-	-	667
5b.1	Subtotal Period 5b Activity Costs	-	43,526	-	-	-	-	80	9,426	53,032	97	-	52,934	-	-	-	-	-	-	449,187	667
Period 5b Additional Costs																					
5b.2.1	Concrete Crushing	-	8,467	-	7	-	-	-	1,832	10,307	-	-	10,307	-	-	-	-	-	-	37,686	-
5b.2.2	ISFSI Demolition and Site Restoration	-	545	-	-	-	-	24	123	692	-	692	-	-	-	-	-	-	-	3,349	80
5b.2.3	Breakwater Demolition and Removal	-	33,893	-	-	-	-	-	12,211	46,104	-	-	46,104	-	-	-	-	-	-	128,379	46,649
5b.2.4	Cofferdam Construction and Teardown	-	438	-	-	-	-	-	95	532	-	-	532	-	-	-	-	-	-	4,004	-
5b.2	Subtotal Period 5b Additional Costs	-	43,344	-	7	-	-	24	14,261	57,636	-	692	56,944	-	-	-	-	-	-	173,418	46,729
Period 5b Collateral Costs																					
5b.3.1	Small tool allowance	-	801	-	-	-	-	-	173	974	-	-	974	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	801	-	-	-	-	-	173	974	-	-	974	-	-	-	-	-	-	-	-
Period 5b Period-Dependent Costs																					
5b.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	207	30	236	-	-	236	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	6,420	-	-	-	-	-	1,388	7,807	-	-	7,807	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	273	59	331	-	-	331	-	-	-	-	-	-	-	-
5b.4.5	Security Staff Cost	-	-	-	-	-	-	3,553	768	4,321	-	-	4,321	-	-	-	-	-	-	-	51,291
5b.4.6	DOC Staff Cost	-	-	-	-	-	-	12,616	2,727	15,343	-	-	15,343	-	-	-	-	-	-	-	145,326
5b.4.7	Utility Staff Cost	-	-	-	-	-	-	5,679	1,228	6,906	-	-	6,906	-	-	-	-	-	-	-	83,349
5b.4	Subtotal Period 5b Period-Dependent Costs	-	6,420	-	-	-	-	22,327	6,199	34,945	-	-	34,945	-	-	-	-	-	-	-	279,966
5b.0	TOTAL PERIOD 5b COST	-	94,090	-	7	-	-	22,430	30,059	146,587	97	692	145,797	-	-	-	-	-	-	622,605	327,362
PERIOD 5 TOTALS		-	94,090	-	7	-	-	22,430	30,059	146,587	97	692	145,797	-	-	-	-	-	-	622,605	327,362

Table D-2
Diablo Canyon Unit 2
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2008 Dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
TOTAL COST TO DECOMMISSION		13,500	162,429	12,129	11,130	36,889	44,211	645,036	231,331	1,156,654	555,017	448,831	152,806	371,549	137,862	2,754	584	433	26,147,370	1,578,341	6,730,738

TOTAL COST TO DECOMMISSION WITH 25% CONTINGENCY:	**$1,156,654**	**thousands of 2008 dollars**
TOTAL NRC LICENSE TERMINATION COST IS 47.98% OR:	**$555,017**	**thousands of 2008 dollars**
SPENT FUEL MANAGEMENT COST IS 38.8% OR:	**$448,831**	**thousands of 2008 dollars**
NON-NUCLEAR DEMOLITION COST IS 13.21% OR:	**$152,806**	**thousands of 2008 dollars**
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	**141,201**	**Cubic Feet**
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	**433**	**Cubic Feet**
TOTAL SCRAP METAL REMOVED:	**76,674**	**Tons**
TOTAL CRAFT LABOR REQUIREMENTS:	**1,578,341**	**Man-hours**

End Notes:
n/a - indicates that this activity not charged as decommissioning expense.
a - indicates that this activity performed by decommissioning staff.
0 - indicates that this value is less than 0.5 but is non-zero.
a cell containing " - " indicates a zero value