

Application No.: 13-03-_____
Exhibit No.: SCE-6
Witnesses: P. Hunt
D. Opitz
D. Snow



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(U 338-E)

***Expenditures for Installation - San Onofre Nuclear
Generating Station Units 2 & 3 Replacement Steam
Generators and Disposal of Original Steam
Generators***

Before the
Public Utilities Commission of the State of California

Rosemead, California
March 15, 2013

Expenditures for Installation - San Onofre Nuclear Generating Station Units 2 & 3 Replacement Steam Generators and Disposal of Original Steam Generators

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I.

**THE COMMISSION AUTHORIZED THE REPLACEMENT OF STEAM GENERATORS AT
SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3**

In Decision (D.) 05-12-040, the Commission granted SCE's application for approval of its Steam Generator Replacement Program (SGRP) for the San Onofre Nuclear Generating Station Unit Nos. 2 & 3 (SONGS 2 & 3).¹ The Commission found that SCE's cost estimate of \$680 million (100% share, 2004 dollars), including \$569 million (100% share, 2004 dollars) for replacement steam generator installation and \$111 million for removal and disposal of the original steam generators (100% share, 2004 dollars) was a reasonable estimate of the total SGRP cost, excluding Allowance for Funds Used During Construction (AFUDC).² The Commission also ordered that to the extent that replacement steam generator installation costs were less than \$569 million (100% share, 2004 dollars), more funds may be used for removal and disposal of the original steam generators, and vice versa.³ The Commission further held that it did not intend to conduct an after-the-fact reasonableness review if the SGRP cost did not exceed \$680 million (100% share, 2004 dollars), although it reserved the right to do so.⁴

In that Decision, the Commission also found that actual SGRP costs would be expressed in nominal dollars when they are recorded,⁵ that a meaningful comparison of recorded SGRP costs with the costs specified therein would require all costs to be converted to equivalent year dollars by an inflation adjustment,⁶ and that the inflation adjustment should be made based on reliable publications such as the Consumer Price Index published by the U.S. Bureau of Labor Statistics.⁷ The Commission noted,

¹ D.05-12-040, p. 108, Ordering Paragraph No. 1.

² Id., p. 108, Ordering Paragraph No. 3.

³ Id., p. 109, Ordering Paragraph No. 3.

⁴ Id., p. 109, Ordering Paragraph No. 4.

⁵ Id., p. 93, Finding of Fact No. 147.

⁶ Id., p. 94, Finding of Fact No. 148.

⁷ Id., p. 94, Finding of Fact No. 149.

1 however, that the record in that proceeding was not sufficient to address how the inflation adjustment
2 should be made.⁸

3 Subsequently, in Decision (D.) 11-05-035, the Commission granted SCE's request to modify
4 D.05-12-040 for the limited purpose of removing from the Steam Generator Replacement Program cost
5 estimate the costs related to replacing and refurbishing certain components in the high-pressure turbines
6 at SONGS Unit Nos. 2 & 3.⁹ There, the Commission ordered that the cost recovery limit for SCE's
7 SGRP was reduced by \$9.2 million (100% share, 2004 dollars) and ordered that D.05-12-040 was
8 modified so that SCE was authorized a revised total of \$670.8 million (100% share, 2004 dollars) for the
9 SGRP.¹⁰

⁸ Id., p. 94, Finding of Fact No. 150.

⁹ D.11-05-035, p. 1.

¹⁰ Id., p. 6, Ordering Paragraph No. 1.

1 II.

2 **SCE COMPLETED THE SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3**
3 **STEAM GENERATOR REPLACEMENT PROGRAM WITHIN THE COMMISSION'S \$670.8**
4 **MILLION REASONABLENESS THRESHOLD**

5 SCE commenced performing the SONGS 2 & 3 Steam Generator Replacement Program in 2004.
6 SCE retained the Bechtel Corporation (Bechtel) as the primary contractor for the engineering and
7 executing the removal of the original steam generators and the installation of the replacement steam
8 generators. SCE retained Mitsubishi Heavy Industries (MHI) to design and fabricate the replacement
9 steam generators. SCE retained other specialty contractors to perform numerous other aspects of the
10 project. SCE completed the removal of the SONGS 2 original steam generators and the installation of
11 the SONGS 2 replacement steam generators on April 11, 2010. SCE completed the removal of the
12 SONGS 3 original steam generators and the installation of the SONGS 3 replacement steam generators
13 on February 18, 2011. SCE delivered the last of the four SONGS 2 & 3 original steam generators to the
14 low-level radioactive waste disposal facility at Clive, Utah, on December 23, 2012. SCE completed the
15 SONGS 2 & 3 Steam Generator Replacement Program at a cost of \$768.5 million (100% share, nominal
16 dollars). Using the Handy-Whitman index to deflate the steam generators' fabrication and construction
17 costs and Commission approved nuclear decommissioning burial escalation rates for burial costs, the
18 recorded cost is deflated to \$612.1 million (100% share, 2004 dollars).¹¹ A summary level breakdown
19 of the SGRP recorded costs is provided in Appendix A to this testimony. SCE, therefore, completed the
20 SONGS 2 & 3 Steam Generator Replacement Program within the revised total of \$670.8 million (100%
21 share, 2004 dollars) that was authorized by the Commission.

¹¹ Preliminary statement of costs recorded through January, 2013, some additional costs related to disposal of the original steam generators have not yet been recorded.

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III.

EVALUATION OF COSTS IN CONSTANT DOLLARS FOR PURPOSES OF REVIEW

The purpose of this testimony is to describe the methodology for comparing SCE recorded SGRP costs in nominal dollars to the cost cap expressed in 2004 constant dollars as authorized in D.05-12-040.¹²

SCE presents cost estimates in this exhibit in 2004 dollars – as if SCE made all SGRP expenditures in 2004. As the SGRP incurred expenditures over several years, from 2004 through 2013, this section will explain the appropriate method for converting actual SGRP costs incurred over several years back to 2004 constant dollars. This conversion will allow the comparison of estimated project expenditures, which are expressed in 2004 constant dollars, to actual project expenditures in order to determine whether the SGRP project costs are within the pre-established reasonableness threshold.

SCE has divided the project costs into two categories for the purposes of deflating SGRP costs to 2004 constant dollars. Costs associated with the construction, fabrication, and installation of the steam generators are deflated by the Handy-Whitman Indexes of Public Utility Construction Costs, and the costs associated with the burial of low-level radioactive waste are deflated by the nuclear decommissioning burial escalation rates approved by the Commission in D.03-10-015, D.07-01-003, and D.10-07-047. The methodology for deflating project costs presented in this application is consistent with the SGRP Advice Letters which have been submitted annually to the commission.¹³

A. Handy-Whitman Indexes Are Reasonable Indexes For Deflating Costs Associated With The Construction, Fabrication, and Installation of Nuclear Steam Generators

The Handy-Whitman Indexes of Public Utility Construction Costs are produced by Whitman, Reardon and Associates LLP (WR&A), of Baltimore, Maryland. Published continuously since 1924, the Handy-Whitman indexes are construction cost indexes specifically tailored to the utility industry. The Commission has used Handy-Whitman Indexes of Public Utility Construction Costs in previous

¹² D.05-12-040, mimeo, p. 62.

¹³ Advice 1951-E (2006), Advice 2067-E (2007-2008), Advice 2292-E (2009), Advice 2402-E(2010), Advice 2402-E (2011)

1 proceedings from General Rate Cases to reasonableness review of large construction projects as the
2 basis to calculate escalation and deflation of construction costs and capital additions.¹⁴ In addition, the
3 Commission has stated “The Handy-Whitman index is a widely recognized publication which reflects
4 the costs of different types of utility construction.”¹⁵ Simply put, Handy-Whitman Indexes of Public
5 Utility Construction Costs represent the standard for utility construction cost price indexes at this
6 Commission.

7 In the case of a nuclear steam generator project in California, the applicable Handy-Whitman
8 Index is Total Nuclear Plant – Pacific Region. The Handy-Whitman Index for Total Nuclear Plant –
9 Pacific Region includes both the labor and non-labor components of a nuclear construction project. The
10 Handy-Whitman Index for Total Nuclear Plant tracks cost inflation in the following accounts in the
11 FERC Uniform System of Accounts (USOA):

- 12 • 320 Land and land rights
- 13 • 321 Structures and improvements
- 14 • 322 Reactor plant equipment
- 15 • 323 Turbogenerator units
- 16 • 324 Accessory electric equipment
- 17 • 325 Miscellaneous power plant equipment
- 18 • 326 Asset retirement costs for nuclear production plant

19 The proprietary weighting factors within the Nuclear Production Plant index is based on analysis
20 by WR&A as part of valuation and design assignment and upon data furnished by utilities and industrial
21 sources. These data are revised continuously with weighting factors and components revised as
22 required, assuring that the construction cost indexes represent current building practices. Handy-
23 Whitman Total Nuclear Plant – Pacific region represents the most appropriate index to deflate the
24 construction, fabrication, and installation costs associated with the SGRP back to 2004 constant dollars.

¹⁴ D.12-11-051, mimeo, p. 608; D.07-01-040, mimeo., p. 115, Ordering Paragraph No. 10; D.99-05-030, mimeo, p 67, Finding of Fact No 17, p 72, Conclusion of Law No 6, p 72, Ordering Paragraph 4.

¹⁵ D.10-12-058, Appendix A, p. 7, footnote 3, Appendix B, p. 8, footnote 5.

1 **B. Handy-Whitman Deflation Factors**

2 The deflation value for each year will be calculated by taking the 2004 value of the Handy-
3 Whitman Index and dividing it by the corresponding value of the Handy-Whitman Index for the
4 particular year.¹⁶ (Multiplying the recorded costs for a given year by the deflation value for that year
5 yields the recorded cost in 2004 dollars.) The Handy-Whitman indexes are published on a semiannual
6 basis, with the values for January 1 and July 1 of each year. The correct way to convert these
7 semiannual values to annual values is as follows:

8
$$\text{Annual Value} = \frac{1}{4} \times \text{January Value}_{(\text{Year } 0)} + \frac{1}{2} \text{July Value}_{(\text{Year } 0)} + \frac{1}{4} \text{January Value}_{(\text{Year } +1)}$$

9 The calculation of the annual 2012 index requires the actual January 2013 index value. The
10 actual January 2013 index is not available until late in the second quarter of 2013. Similarly, the
11 calculation of the annual 2013 index requires the actual January 2013, July 2013 and January 2014
12 values. The actual January 2014 index will not be available until late in the second quarter of 2014.

13 **C. Low-Level Radioactive Waste Burial Costs**

14 The SGRP costs associated with the burial of low-level radioactive waste that were incurred over
15 the life of the project are deflated to 2004 constant dollars using the burial escalation rates approved by
16 the Commission during its Nuclear Decommissioning Cost Triennial Proceeding (NDCTP) cases.¹⁷

17 These burial escalation rates are based upon NUREG-1307, a United States Nuclear Regulatory
18 Commission (NRC) report that “explains the formula acceptable to the NRC for determining the
19 minimum decommissioning fund requirements for nuclear power plants.”¹⁸ The NRC report is written
20 to be an “appropriate source of information for obtaining ... waste burial/disposition costs”¹⁹ for use by
21 nuclear power reactor licensees in providing to the NRC “reasonable assurance ... that funds will be

¹⁶ Multiplying the recorded costs for a given year by the deflation value for that year yields the recorded cost in 2004 dollars.

¹⁷ D.03-10-015, D.07-01-003, and D.10-07-047

¹⁸ Report on Waste Burial Charges: Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities (Final Report, NUREG-1307, Revision 15) - Abstract

¹⁹ *Id.*, Revision 13, Foreword.

1 available for decommissioning.”²⁰ Using the low-level radioactive waste burial cost data contained in
2 various revisions of the report,²¹ SCE statistically estimated, using an exponential growth model,
3 historical burial cost escalation rates based on SCE’s findings. The rates used here are the burial
4 escalation rates approved by the Commission in the three most recent NDCTP cases.²²

5 **D. SGRP Deflation Factors**

6 In summary, SCE’s costs associated with the construction, fabrication, and installation of the
7 steam generators are deflated by the Handy-Whitman Indexes of Public Utility Construction Costs and
8 the costs associated with the burial of low-level radioactive waste are deflated by the nuclear
9 decommissioning burial escalation rates approved by the Commission in D.03-10-015, D.07-01-003,
10 and D.10-07-047. The methodology for deflating project costs presented in this application is consistent
11 with the SGRP Advice Letters which have been submitted annually to the Commission.²³

12 **1. Construction, Fabrication, And Installation Deflation Factors**

13 The following table represents current historical (2004 – 2013) and projected (2012) values of
14 the SGRP construction, fabrication, and installation deflation factors, based upon Handy-Whitman
15 historical indexes²⁴ and projection of the Handy-Whitman index provided by Global Insight.²⁵

²⁰ 10 C.F.R. §50.75(a).

²¹ Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, “Report on Waste Burial Charges/Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities”, NUREG-1307, Revision 14, October 2010, plus older revisions.

²² D.03-10-015, D.07-01-003, and D.10-07-047

²³ Advice 1951-E (2006), Advice 2067-E (2007-2008), Advice 2292-E (2009), Advice 2402-E(2010), Advice 2402-E (2011)

²⁴ Handy-Whitman Index of Public Utility Construction Costs, Whitman, Requardt & Associates, Baltimore Maryland, Bulletin 176, Cost Trends of Electric Utility Construction, Pacific Region, Total Nuclear Plant (2004 – 2011).

²⁵ IHS Global Insight, Power Planner, Quarter 3 2012, Pacific Region, Total Nuclear Plant (2012). For 2012 and 2013, the projected growth rate is applied to the previous year’s Handy-Whitman Nuclear Production Plant Index value to arrive at the projected index value.

Table III-1
Historical and Projected Estimates of Construction, Fabrication, and Installation Costs
Deflation Factors

Line Number	Year	Historical and Projected Handy-Whitman Index Value (1973 = 100)	Percent Change	Historical and Projected Deflation Factor
1	2004	442.00	4.25%	1.000
2	2005	470.75	6.50%	0.939
3	2006	494.50	5.05%	0.894
4	2007	518.07	4.77%	0.853
5	2008	553.00	6.74%	0.799
6	2009	557.00	0.72%	0.794
7	2010	583.25	4.71%	0.758
8	2011	606.50	3.99%	0.729
9	2012*	621.40	2.46%	0.711
9	2013*	630.00	1.38%	0.702
* Projected				

2. Low-Level Radioactive Waste Burial Deflation Factors

The following table represents the annual SGRP low-level radioactive waste burial deflation factors based on the burial escalation rates approved by the Commission in D.03-10-015, D.07-01-003, and D.10-07-047.

Table III-2
NDCTP Low-Level Radioactive Waste Burial Deflation Factors And Associated
Commission Decisions

Line Number	Year	Rate	Burial Escalation Index	Commission Decision	Burial Deflation Factor
1	2004	7.50%	1.000	2002 NDCTP, D.03-10-015	1.000
2	2005	7.50%	1.075	2002 NDCTP, D.03-10-015	0.930
3	2006	7.50%	1.156	2002 NDCTP, D.03-10-015	0.865
4	2007	7.50%	1.242	2005 NDCTP (settlement), D.07-01-003	0.805
5	2008	7.50%	1.335	2005 NDCTP (settlement), D.07-01-003	0.749
6	2009	7.50%	1.436	2005 NDCTP (settlement), D.07-01-003	0.697
7	2010	7.12%	1.538	Weighted average, 7.50% for January through April based on 2005 NDCTP, 6.93% for May through December based on 2009 NDCTP Phase 1, D.10-07-047	0.650
8	2011	6.93%	1.644	2009 NDCTP Phase 1, D.10-07-047	0.608
9	2012	6.93%	1.758	2009 NDCTP Phase 1, D.10-07-047	0.569
10	2013	6.93%	1.880	2009 NDCTP Phase 1, D.10-07-047	0.532

1 **E. The Consumer Price Index (CPI) Is An Inappropriate Index To Use When Deflating Costs**
2 **Associated With The Installation Of Steam Generators Within A Nuclear Plant**

3 The Consumer Price Index (CPI) is an inappropriate index to use when deflating costs associated
4 with the installation of steam generators within a nuclear plant.

5 The application of the Consumer Price Index as a proxy for nuclear power plant construction
6 cost inflation is conceptually flawed. The Consumer Price Index measures changes in the prices of
7 goods and service bought by households – such as food, clothing, housing, and education. Due to the
8 fact that the CPI measures changes in the cost of household expenditures, its use as a measure to escalate
9 or deflate nuclear construction costs is severely limited at best and grossly distorting at worst.
10 Essentially, we wouldn't be comparing apples to apples; we would be literally comparing the costs of
11 food, clothing, education, and housing to the cost of the manufacturing and installation of nuclear steam
12 generators. Such a comparison would be fundamentally flawed.

13 The CPI bears little resemblance to the costs incurred by nuclear production plant construction
14 costs. The CPI is heavily weighted to housing and food – these two categories account for over 56% of
15 the CPI—and such expenditures are obviously not the types of expenditures incurred by a utility for a
16 major construction project. The major CPI categories include:²⁶

- 17 • Food 15.3%
- 18 • Housing 41.0%
- 19 • Apparel 3.6%
- 20 • Transportation 16.8%
- 21 • Medical Care 7.2%
- 22 • Education 6.8%
- 23 • Recreation 6.0%

²⁶ Relative importance of components in the Consumer Price Indexes: U.S. city average, December 2012 - Table 1 (2009-2010 Weights) <http://bls.gov/cpi/cpiri2012.pdf>. A full listing of the CPI component goods and services can be obtained at <http://bls.gov/cpi/cpiri2012.pdf>.

1 A more detailed examination of the elements of the CPI underscores why it is inappropriate to
2 use as a measure of nuclear construction inflation. For instance, cereal accounts for 1.2% of the CPI,
3 pets, pet products and services 1.1%, and fruits and vegetables 1.3% - none of which is representative of
4 inflationary trends faced by utilities installing a steam generator into a nuclear plant.

5 Conversely, although metals are major inputs into the manufacturing of a nuclear steam
6 generator, metal prices are not directly accounted for in the CPI in any meaningful way. The CPI does
7 not appropriately take into account that the price index for metal and metal products²⁷ surged almost
8 70% and the price index for iron and steel doubled during the 2003 -2008 period.²⁸

9 In comparison, the Handy-Whitman index takes into account the inflationary spikes in metal
10 prices and the downstream impacts upon the prices of commodities involved in building a nuclear steam
11 generator, along with other components of steam generator construction and installation.

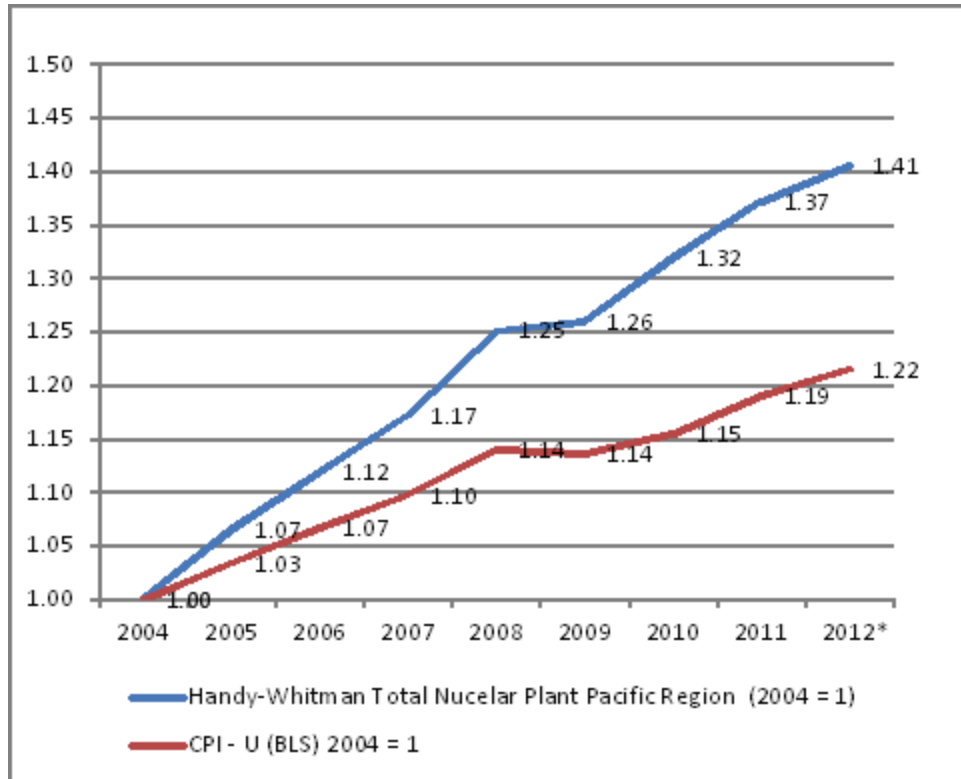
12 **F. The CPI Underestimates Inflation In The Cost Of Building Nuclear Plants**

13 The aforementioned differences between the components of the CPI and the Handy-Whitman
14 index are evidenced in the following chart that compares CPI to the Handy-Whitman Total Nuclear
15 Plant Index over the period from 2004 - 2012. As illustrated below, nuclear construction costs have
16 risen by 41% from their 2004 levels by 2012 whereas CPI, or costs incurred by households in the U.S.,
17 increased by 21% during the same period. Therefore using CPI to deflate nominal SGRP project costs
18 to 2004 constant dollars would underestimate the effects of input price inflation on the costs of the
19 SGRP project.

²⁷ Producer price index - metals & metal products, Bureau of Labor Statistics Variable WPI10.

²⁸ Producer price index - iron and steel. Bureau of Labor Statistics Variable WPU101.

Table III-3
CPI-U vs. Handy-Whitman Total Nuclear Plant Pacific Region 2004-2012
2004 = 1.0



G. The CPI Is An Inappropriate Index To Use When Deflating Costs Associated With The Burial Of Low-Level Radioactive Waste

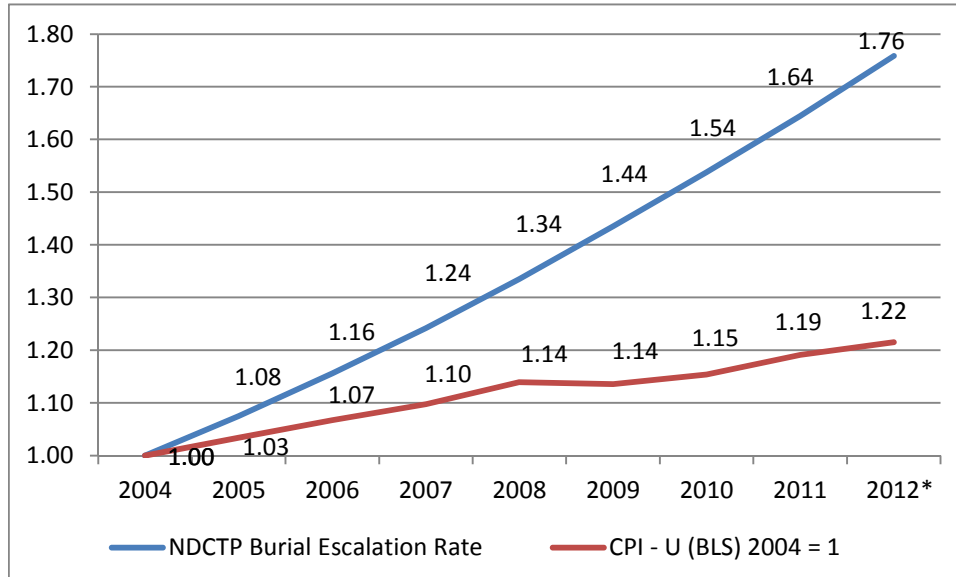
The CPI is an inappropriate index to use when deflating costs associated with the burial of low-level radioactive waste. As illustrated above in Section E, the CPI does not capture the cost increases associated with burying low-level radioactive waste from a nuclear steam generator. Due to the fact that the components of CPI do not match the activity involved in burying low-level radioactive waste, the application of the CPI as a proxy for low-level radioactive waste burial escalation is conceptually flawed.

H. The CPI Underestimates Inflation In The Cost Of Burying Low-Level Radioactive Waste

The aforementioned differences between the CPI index and the Commission-approved burial escalation rates are evidenced in the following chart that compares CPI to the burial escalation rates over the period from 2004 - 2012. As illustrated below, the costs for burying low-level radioactive waste

1 have risen by 76% from their 2004 levels by 2012 whereas CPI, or costs incurred by households in the
2 U.S., increased by 21% during the same period. Therefore using CPI to deflate nominal SGRP burial
3 costs to 2004 constant dollars would underestimate the effects of burial price inflation on the costs of the
4 SGRP project.

Table III-4
CPI-U vs. NDCTP Burial Escalation Rates 2004 – 2012
2004 = 1.0



1 IV.

2 **RATEMAKING**

3 Decision No. 05-12-040 permitted, and the CPUC approved, certain advice letters submitted by
4 SCE to implement interim revenue requirements for recovery of the SGRP costs. Pursuant to the
5 Administrative Law Judge’s February 21, 2013 ruling in OII 12-10-013, SCE is submitting testimony in
6 Exhibit SCE-5 in the OII that addressees this interim relief. Exhibit SCE-5 also includes SCE’s
7 proposal to include the SGRP cost permanently in rates, as adjusted for the SGRP cost that was already
8 included in rates on an interim basis.

9 As of January 31, 2013 SCE has incurred \$768.5 million (100% share nominal dollars) to
10 implement the SGRP. SCE’s share of the \$768.5 million is \$601.1 million (nominal dollars). The
11 amounts included in D.05-12-040 for determining whether or not the actual cost of the SGRP exceed the
12 reasonableness threshold did not include Allowances for Funds Used During Construction (AFUDC).²⁹
13 Through January 2013, SCE has accrued \$90.3 million of AFUDC. In addition, SCE has included \$8.0
14 million associated with capitalized property taxes. In this proceeding, SCE requests authorization to
15 recover the revenue requirement associated with SCE’s share of the total plant, including accrued
16 AFUDC and capitalized property taxes of \$699.4 million in rates permanently, no longer subject to
17 refund.³⁰ As explained in more detail below, consistent with D.05-12-040, SCE has already recovered a
18 portion of its plant and associated revenue requirement, and also requests to continue to recover its
19 annual revenue requirement through the NRC license period for SONGS, or 2022.

20 D.05-12-040 established some limited cost recovery prior to completion of the SGRP and
21 additional cost recovery upon completion of the SGRP. Prior to the completion of SGRP, the

²⁹ D. 05-12-040, p. 108, Ordering Paragraph No. 3.

³⁰ SCE does not does not request that the Commission immediately alter the subject-to-refund condition established in OII 12-10-013. Nor does this application seek to constrain the Commission's ability to review the costs booked in the SONGS Outage Memorandum Account. Instead, SCE requests that the final relief granted at the conclusion of the proceedings on this Application and OII 12-10-013 be a Commission order that the revenue requirement recorded in the SGRP balancing accounts no longer be subject to refund.

1 Commission allowed SCE to recover through depreciation 20% of its ownership share of the estimated
2 removal and disposal cost for the original steam generators over the period 2006 through 2011.³¹

3 For cost recovery upon completion of the SGRP for each unit (i.e. the replacement costs and the
4 approximately remaining 80% of the removal and disposal costs), D.05-12-040 allows SCE to put an
5 estimated annual revenue requirement in rates on an interim basis at the beginning of the year following
6 completion of the replacement of each unit and completion of the removal and disposal of each of the
7 old units. Because this work is all capital-related, the revenue requirement consists of depreciation
8 expense, return on rate base, and taxes. The revenue realized from the estimate included in rates is
9 balanced (trued-up) with the actual (recorded) revenue requirement recorded in the SGR-related
10 balancing accounts (i.e. SONGS 2&3 Steam Generator Replacement Balancing Account (SGRBA) and
11 the SONGS 2&3 Steam Generator Removal and Disposal Balancing Account (SGRDBA)), and
12 transferred to SCE's Base Revenue Requirement Balancing Account (BRRBA).³² Annual over- or
13 under-collections (i.e. differences between the amounts realized in revenue and the actual (recorded)
14 revenue requirement) recorded in the BRRBA are either returned to or recovered from customers in the
15 subsequent year. The year-end BRRBA balance is reviewed and allowed to be included in rates each
16 year in SCE's ERRRA Forecast proceedings. As such, consistent with the ratemaking implemented in
17 compliance with D.05-12-040, SCE is recovering its actual revenue requirement in rates (i.e. estimated
18 revenue requirements included in rates are trued-up to the actual revenue requirements).

19 Table IV-5 below shows the actual SGRP revenue requirement recorded during the period 2006
20 through 2012.³³

³¹ Ordering Paragraph No. 12 of D.05-040.

³² The BRRBA is the balancing account where SCE's non-fuel and purchased power generation revenue is balanced with the authorized and other recorded costs (e.g. SGRP revenue requirements) so that it only recovers what the Commission has authorized.

³³ The annual amounts shown in Table IV-5 include adjustments recorded in subsequent years.

Table IV-5
Recorded SGRP Revenue Requirement
2006 through 2012
(\$millions, nominal\$)

	A	B	C	D	E	F	G	H	I	J
	2006	2007	2008	2009	2010	2011	2012	Total Thru 2012	Remaining Plant 1/	Total Plant 2/
1. Recorded Depreciation										
2. Estimated 20% of Removal and Disposal	3.03	3.32	3.59	3.78	3.84	4.06	-	21.62		
3. Recorded in SGRBA and SGRDBA	-	-	-	-	15.62	42.58	51.73	109.93		
4. Subtotal Depreciation (Recovery of Plant)	3.03	3.32	3.59	3.78	19.46	46.64	51.73	131.55	567.85	699.40
5. Property Taxes (Recorded in SGRBA)	-	-	-	-	-	1.60	4.82	6.42		
6. Income Taxes (Recorded in SGRBA and SGRDBA)	-	-	-	-	8.06	10.48	11.27	29.80		
7. Return on Rate Base (Recorded in SGRBA and SGRDBA)	-	-	-	-	16.72	39.99	41.14	97.85		
8. Subtotal without FF&U	3.03	3.32	3.59	3.78	44.24	98.71	108.97	265.63		
9. Franchise Fees and Uncollectibles	0.03	0.04	0.05	0.04	0.51	1.14	1.22	3.04		
10. Total Recorded Revenue Requirement	3.06	3.36	3.64	3.82	44.75	99.85	110.19	268.67		

NOTES:
1/ Total Plant remaining to be amortized and recovered in rates through the end of the NRC license period which is 2022 (i.e. 10-years).
2/ Total Plant includes approximately \$90.3 million of accrued AFUDC and \$8.0 million of capitalized property taxes.

As shown on Line No. 4 in Column H above, consistent with the ratemaking approved in D.05-12-040, and as explained in more detail below, SCE has recovered, or is currently in the process of recovering, \$131.55 million (nominal dollars) of its total share of the \$699.4 million (nominal dollars) plant. SCE requests the remaining \$567.85 million (nominal dollars), and associated revenue requirement (i.e. including depreciation, taxes, and return on rate base) be recovered over the NRC license life consistent with the period the Commission is allowing SCE to recover its other SONGS plant (i.e. authorized in the General Rate Case). As shown on Line No. 10, SCE's total SGRP revenue requirement through December 31, 2012 is \$268.67 million.

Table IV-6 below shows the amount of the SGRP revenue requirement that has been recovered in rates during the period 2006 through 2012, plus a true-up amount in 2013 that ensures SCE recovers its recorded SGRP revenue requirement of \$268.67 million shown in Table IV-5 above.³⁴

³⁴ The table is intended to show how SCE has recovered its recorded SGRP revenue requirement through 2012 in rates. It does not include the estimated 2013 revenue requirement included in rates implemented in Advice Letter 2834-E.

Table IV-6
SGRP Revenue Requirement
Included in Rates
2006 through 2013
(\$millions, nominal\$)

	2006	2007	2008	2009	2010	2011	2012	2013 2/	Total
1. 20% of the est. Removal and Displ. Rev Rqmt	3.06	3.36	3.64	3.82	3.88	4.11	-	-	21.87
2. Estimated Annual Replacement Rev Rqmt Unit 2						56.69	57.70	-	114.39
3. Estimated Annual Replacement Rev Rqmt Unit 3						-	57.54	-	57.54
4. Subtotal						56.69	115.24	-	171.93
5. Prior Year True-Up Recorded In BRRBA Included In Rates									-
6. - Recorded 2010 Unit 2 Rev Rqmt						40.87			40.87
7. - Recorded 2011 Unit 3 Rev Rqmt							45.25		45.25
8. - Prior Year Replacement Rev Rqmt True-up 1/							2.61	6.83	9.44
9. - Recorded 2011 and 2012 Unit 2 & 3 R&D Rev Rqmt 3/							(8.81)	(11.88)	(20.69)
10. Total In Rates Each Year	3.06	3.36	3.64	3.82	3.88	101.67	154.29	(5.05)	268.67
1/ 2012 - Difference between \$56.69M in rates and the recorded amount (including FF&U) of \$59.30M 2013 - Difference between \$115.24M in rates and the recorded amount (including FF&U) of \$122.07M									
2/ For purposes of showing how SCE has recovered its recorded SGRP revenue requirement through 2012, the 2013 SGRP revenue requirement currently in 2013 rates is not shown in this table.									
3/ As explained in more detail below, prior to the completion of the removal and disposal work, SCE realized a tax deduction as cash expenditures for removal and disposal work were spent. As such, SCE recorded the associated credit revenue requirement in the SGRDBA. In addition, SCE recorded a credit revenue requirement associated with the removal and disposal accumulated depreciation (i.e. rate base deduction) that was recovered during 2006 through 2011.									

1 The amounts shown on Line No. 1 are the amounts the Commission in D.05-12-040 allowed SCE to
2 recover prior to the completion of the SGRP associated with the estimated 20% of the removal and
3 disposal costs. The amounts shown on Lines Nos. 2 through 4 are the estimated annual revenue
4 requirements SCE included in rates each year beginning the year after the unit was returned to operation
5 consistent with the requirements of D.05-12-040. For example, SCE included \$56.04 million, plus 0.65
6 million of Franchise Fees and Uncollectibles (FF&U) in 2011 rates based on the estimated 2011 revenue
7 requirement for the replacement of Unit 2 since Unit 2 became operational in April 2010. Lines Nos. 5
8 through 9 of Table IV-6 show the amounts recorded in the Base Revenue Requirement Balancing
9 Account associated with truing up the estimated revenue requirement included in rates during the prior
10 year to the recorded revenue requirements recorded in the SGRP-related balancing accounts. For
11 example, during 2010, SCE recorded \$40.87 million in the SGRBA (including FF&U) associated with
12 the replacement revenue requirement for Unit 2. Since Unit 2 returned to operation in 2010, nothing
13 was included in rates until 2011. As such, in 2011, in addition to the estimated 2011 replacement

1 revenue requirement for Unit 2 shown on Line No. 2 in the amount of \$57.7 million, SCE included
2 \$40.87 million which is the difference between the revenue requirement recorded in the SGRBA during
3 2010, or \$40.87 million, and the amount included in 2010 rates levels for the replacement revenue
4 requirement, which was \$0.³⁵ The ratemaking implemented in compliance with D.05-12-040 ensures
5 that SCE recovers its recorded SGRP revenue requirements. SCE requests the Commission make
6 recovery of the \$268.67 million permanent, without future refund, and allow SCE to continue to recover
7 its on-going revenue requirement associated with the recovery of \$567.85 million remaining plant in
8 rates through 2022.

³⁵ This difference is recorded in the BRRBA.

Appendix A
Steam Generator Replacement Program Recorded Costs through January 2013

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	YOE \$ - 100% Level											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
Directs	11,834,755	31,368,766	61,903,514	52,985,238	54,918,006	209,781,689	221,615,589	57,147,734	8,762,393	639,428	710,957,112	
Burial	0	0	0	944,026	0	907,092	1,361,447	7,092,837	5,174,699	(358,902)	15,121,199	
Corp. OH	223,298	3,610,334	4,178,475	3,613,164	3,801,468	10,403,304	12,415,380	3,412,354	677,611	135,413	42,470,800	
Total	12,058,053	34,979,100	66,081,989	57,542,428	58,719,474	221,092,085	235,392,416	67,652,925	14,614,703	415,939	768,549,111	

H-W Deflation Factor	1.000	0.939	0.894	0.853	0.799	0.784	0.758	0.729	0.711	0.702	
Burial Deflation Factor	1.000	0.930	0.865	0.805	0.749	0.697	0.650	0.608	0.569	0.532	

	2004 \$ - 100% Level											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
Directs	11,834,755	29,455,271	55,341,742	45,196,408	43,879,487	166,566,661	167,984,616	41,660,698	6,230,061	448,878	568,598,577	
Burial	0	0	0	759,941	0	632,243	884,941	4,312,445	2,944,404	(190,936)	9,343,038	
Corp. OH	223,298	3,390,104	3,735,557	3,082,029	3,037,373	8,260,223	9,410,858	2,487,606	481,781	95,060	34,203,889	
Total	12,058,053	32,845,375	59,077,299	49,038,378	46,916,860	175,459,127	178,280,415	48,460,749	9,656,246	353,002	612,145,504	

	YOE \$ - SCE Share											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
Directs	9,255,962	24,533,512	48,414,738	41,439,755	42,951,372	164,070,259	173,325,552	44,695,243	6,853,068	500,097	556,039,558	
Burial	0	0	0	738,323	0	709,437	1,064,788	5,547,308	4,047,132	(280,697)	11,826,291	
Corp. OH	174,641	2,823,642	3,267,985	2,825,855	2,973,128	8,136,424	9,710,069	2,668,802	529,960	105,907	33,216,413	
Total	9,430,603	27,357,154	51,682,723	45,003,933	45,924,500	172,916,120	184,100,409	52,911,353	11,430,160	325,307	601,082,262	

H-W Deflation Factor	1.000	0.939	0.894	0.853	0.799	0.794	0.758	0.729	0.711	0.702	
Burial Deflation Factor	1.000	0.930	0.865	0.805	0.749	0.697	0.650	0.608	0.569	0.532	

	2004 \$ - SCE Share											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
Directs	9,255,962	23,036,967	43,282,776	35,348,111	34,318,147	130,271,786	131,380,768	32,582,832	4,872,531	351,067	444,700,947	
Burial	0	0	0	594,350	0	494,477	692,112	3,372,763	2,302,818	(149,331)	7,307,189	
Corp. OH	174,641	2,651,400	2,921,579	2,410,455	2,375,529	6,460,320	7,360,232	1,945,557	376,801	74,346	26,750,860	
Total	9,430,603	25,688,367	46,204,355	38,352,916	36,693,676	137,226,583	139,433,112	37,901,152	7,552,150	276,082	478,758,996	

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	2004 \$ - 100% Level										Total Rec.	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		
RSG Fabrication Contract												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U2 Material	0	7,670,691	15,710,186	0	7,244,284	11,010,658	5,191,894	229,393	20,915	0	47,078,021	
U2 Contract	0	0	0	0	130,085	0	0	0	0	0	130,085	
U2 Other	6,746,747	(663,205)	10,780,287	1,190	104,870	0	238,518	(229,393)	0	0	16,979,014	
Unit 2 Total	6,746,747	7,007,486	26,490,473	1,190	7,479,239	11,010,658	5,430,412	0	20,915	0	64,187,120	
U3 Labor	0	0	0	0	0	0	0	0	0	0	0	
U3 Material	0	2,912,262	2,914,552	0	1,743,755	5,356,049	4,216,721	6,114,175	0	0	23,257,514	
U3 Contract	0	0	0	0	130,085	0	0	232,103	0	0	362,188	
U3 Other	0	9,861,275	5,313,692	15,054,785	2,075,332	0	238,518	(229,393)	0	0	32,314,209	
Unit 3 Total	0	12,773,537	8,228,244	15,054,785	3,949,172	5,356,049	4,455,239	6,116,885	0	0	55,933,911	
RSG Fabrication Total	6,746,747	19,781,023	34,718,717	15,055,975	11,428,411	16,366,707	9,885,651	6,116,885	20,915	0	120,121,031	
RSG Installation Contract												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	
U2 Material	0	0	0	0	0	0	0	0	0	0	0	
U2 Contract	0	0	177,217	(18,491)	2,684,640	81,014,807	26,154,608	(3,207,600)	0	0	106,805,181	
U2 Other	0	0	4,279,302	10,155,418	3,255,925	12,832,403	(12,250,581)	0	0	0	18,272,467	
Unit 2 Total	0	0	4,456,519	10,136,927	5,940,565	93,847,210	13,904,027	(3,207,600)	0	0	125,077,648	
U3 Labor	0	0	0	0	0	0	0	0	0	0	0	
U3 Material	0	0	0	0	0	0	2,653	(2,552)	0	0	101	
U3 Contract	0	0	177,217	32,685	8,352,746	2,025,506	91,277,642	12,115,205	0	0	113,981,001	
U3 Other	0	0	3,375,611	5,570,491	4,261,866	0	568,500	(546,750)	0	0	13,229,718	
Unit 3 Total	0	0	3,552,828	5,603,176	12,614,612	2,025,506	91,848,795	11,565,903	0	0	127,210,820	
RSG Install Total	0	0	8,009,347	15,740,103	18,555,177	95,872,716	105,752,822	8,358,303	0	0	252,288,468	
RSG Transport Contract												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	
U2 Material	0	0	0	0	0	2,011	0	0	0	0	2,011	
U2 Contract	0	0	0	0	558,909	1,911,590	29,266	105,106	0	0	2,604,871	
U2 Other	0	0	50,844	164,087	139,521	(125,286)	0	0	0	0	229,166	
Unit 2 Total	0	0	50,844	164,087	698,430	1,788,315	29,266	105,106	0	0	2,836,048	
U3 Labor	0	0	0	0	0	0	0	0	0	0	0	
U3 Material	0	0	0	0	0	0	0	0	0	0	0	
U3 Contract	0	0	0	0	558,909	492,927	1,442,418	1,423,526	0	0	3,917,780	
U3 Other	0	0	50,844	164,087	136,695	(125,286)	166,939	(160,552)	0	0	232,727	
Unit 3 Total	0	0	50,844	164,087	695,604	367,641	1,609,357	1,262,974	0	0	4,150,507	
RSG Transport Total	0	0	101,688	328,174	1,394,034	2,155,956	1,638,623	1,368,080	0	0	6,986,555	

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	2004 \$ - 100% Level											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
OSG Transport Contract												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U2 Material	0	0	0	0	0	0	0	0	0	0	0	0
U2 Contract	0	0	0	0	340,710	122,041	227,924	2,735,102	21,880	(1,804)	3,445,853	
U2 Other	0	0	0	0	0	0	0	5,847	(5,703)	234,210	234,354	
Unit 2 Total	0	0	0	0	340,710	122,041	227,924	2,740,949	16,177	232,406	3,680,207	
U3 Labor	0	0	0	0	0	0	0	0	0	0	0	
U3 Material	0	0	0	0	0	0	0	0	0	0	0	
U3 Contract	0	0	0	0	0	268,041	406,530	541,911	1,996,927	346,909	3,560,318	
U3 Other	0	0	0	0	0	0	0	0	300,222	(296,422)	3,800	
Unit 3 Total	0	0	0	0	0	268,041	406,530	541,911	2,297,149	50,487	3,564,118	
OSG Transport Total	0	0	0	0	340,710	390,082	634,454	3,282,860	2,313,326	282,893	7,244,325	
SCE - Engineering												
U2 Labor	98,637	790,950	699,591	711,625	1,126,481	1,051,776	105,198	7,852	390	0	4,602,500	
U2 Material	0	0	18,638	0	6	5,101	0	0	0	0	23,745	
U2 Contract	0	103,859	349,264	280,721	344,796	1,337,244	408,262	25,804	0	0	2,849,950	
U2 Other	36,964	391,541	326,816	219,531	105,677	36,094	978	0	0	0	1,117,601	
Unit 2 Total	135,601	1,286,350	1,394,309	1,211,877	1,576,960	2,440,215	514,438	33,656	390	0	8,593,796	
U3 Labor	69,771	602,500	449,106	660,505	735,140	563,663	1,017,462	181,106	780	0	4,280,033	
U3 Material	0	0	10,284	0	(134,226)	9,820	4,208	(970)	0	0	(110,884)	
U3 Contract	0	59,565	231,204	185,242	231,985	558,979	753,570	485,287	0	0	2,505,832	
U3 Other	86,956	263,054	170,379	239,755	93,729	298,376	54,618	(50,848)	(480)	0	1,155,539	
Unit 3 Total	156,727	925,119	860,973	1,085,502	926,628	1,430,838	1,829,858	614,575	300	0	7,830,520	
SCE Engineering Total	292,328	2,211,469	2,255,282	2,297,379	2,503,588	3,871,053	2,344,296	648,231	690	0	16,424,316	
SCE - Construction												
U2 Labor	67,756	93,368	205,890	581,389	444,739	2,017,437	830,735	174,230	2,678	0	4,418,222	
U2 Material	0	0	65	306,696	737,768	5,508,522	2,354,855	270,175	29,942	0	9,208,023	
U2 Contract	20,342	187,864	237,786	2,014,495	2,037,650	14,016,191	3,510,434	6,222,084	142,036	0	28,388,882	
U2 Other	351,096	512,397	144,372	202,291	690,683	1,482,666	643,634	266,385	(8,042)	220,528	4,506,010	
Unit 2 Total	439,194	793,629	588,113	3,104,871	3,910,840	23,024,816	7,339,658	6,932,874	166,614	220,528	46,521,137	
U3 Labor	65,728	93,092	177,843	358,678	447,606	107,369	1,486,862	518,445	125,878	(5,352)	3,376,149	
U3 Material	0	0	0	56,734	575,454	799,350	3,039,372	416,013	15,746	7,433	4,910,102	
U3 Contract	19,948	167,309	218,506	602,463	1,241,328	517,472	14,834,278	9,426,536	1,816,321	5,311	28,849,472	
U3 Other	326,344	532,809	141,467	141,065	229,312	340,223	1,676,805	(8,677)	1,066,656	(65,670)	4,380,334	
Unit 3 Total	412,020	793,210	537,816	1,158,940	2,493,700	1,764,414	21,037,317	10,352,317	3,024,601	(58,278)	41,516,057	
SCE Construction Total	851,214	1,586,839	1,125,929	4,263,811	6,404,540	24,789,230	28,376,975	17,285,191	3,191,215	162,250	88,037,194	

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	2004 \$ - 100% Level											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total Rec.	
SCE - Project Support												
U2 Labor	364,658	391,948	434,710	366,640	201,406	562,591	76,273	27,717	0	0	2,425,943	
U2 Material	6,385	25,934	18,052	26,597	18,789	102,739	(7,961)	8,918	(7,618)	0	191,835	
U2 Contract	154,312	355,647	758,039	551,161	1,556,040	3,250,554	1,338,106	146,880	34,599	0	8,145,338	
U2 Other	425,893	654,964	520,347	493,735	205,088	472,742	(352,893)	(1,629)	0	0	2,418,247	
Unit 2 Total	951,248	1,428,493	1,731,148	1,438,133	1,981,323	4,388,626	1,053,525	181,886	26,981	0	13,181,363	
U3 Labor	356,061	340,041	376,468	294,819	209,829	123,704	330,073	123,673	29,057	1,732	2,185,457	
U3 Material	926	652	3,304	5,712	50,669	2,005,567	(1,620,255)	(208,877)	(109)	0	237,589	
U3 Contract	123,548	260,346	610,433	537,508	(277,601)	1,229,825	2,284,699	1,035,242	134,327	7,215	5,945,542	
U3 Other	395,024	543,554	313,810	374,184	204,934	48,993	282,491	(30,706)	15,960	(5,210)	2,143,034	
Unit 3 Total	875,559	1,144,593	1,304,015	1,212,223	187,831	3,408,089	1,277,008	919,332	179,235	3,737	10,511,622	
SCE Proj Supt Total	1,826,807	2,573,086	3,035,163	2,650,356	2,169,154	7,796,715	2,330,533	1,101,218	206,216	3,737	23,692,985	
Common Allocation												
U2 Labor	508,736	1,427,067	2,104,627	1,289,081	53,964	0	1,144,588	522,657	0	0	7,050,720	
U2 Material	0	0	0	0	0	0	0	0	0	0	0	
U2 Contract	0	0	0	0	0	0	0	0	0	0	0	
U2 Other	550,097	895,349	1,365,004	757,484	117,026	12,259,360	6,317,589	457,329	213,300	0	22,932,538	
Unit 2 Total	1,058,833	2,322,416	3,469,631	2,046,565	170,990	12,259,360	7,462,177	979,986	213,300	0	29,983,258	
U3 Labor	508,736	664,132	1,579,500	1,772,483	287,311	0	2,486,614	1,343,963	0	0	8,642,739	
U3 Material	0	0	0	0	0	0	0	0	0	0	0	
U3 Contract	0	0	0	0	0	0	0	0	0	0	0	
U3 Other	550,097	316,310	1,046,490	1,041,562	625,569	3,064,840	7,072,470	1,175,978	284,400	0	15,177,716	
Unit 3 Total	1,058,833	980,442	2,625,990	2,814,045	912,880	3,064,840	9,559,084	2,519,941	284,400	0	23,820,455	
Common Allocation Total	2,117,666	3,302,858	6,095,621	4,860,610	1,083,870	15,324,200	17,021,261	3,499,927	497,700	0	53,803,713	
Project Directs												
U2 Labor	1,039,787	2,703,333	3,444,818	2,948,735	1,826,590	3,641,804	2,156,794	732,456	3,068	0	18,497,385	
U2 Material	6,385	7,696,625	15,746,941	333,293	8,000,847	16,629,031	7,538,788	508,486	43,239	0	56,503,635	
U2 Contract	174,654	647,370	1,522,306	2,827,886	7,652,830	101,652,427	31,668,600	6,027,376	198,515	(1,804)	152,370,160	
U2 Other	8,110,797	1,791,046	17,466,972	11,993,736	4,618,790	26,957,979	(5,402,755)	488,539	199,555	454,738	66,689,397	
Unit 2 Total	9,331,623	12,838,374	38,181,037	18,103,650	22,099,057	148,881,241	35,961,427	7,766,857	444,377	452,934	294,060,577	
U3 Labor	1,000,296	1,699,765	2,582,917	3,086,485	1,679,886	794,736	5,321,011	2,167,187	155,715	(3,620)	18,484,378	
U3 Material	926	2,912,914	2,928,140	62,446	2,235,652	8,170,786	5,642,699	6,317,789	15,637	7,433	28,294,422	
U3 Contract	143,496	487,220	1,237,360	1,357,898	10,237,452	5,092,750	110,999,137	25,259,810	3,947,575	359,435	159,122,133	
U3 Other	1,358,421	11,517,002	10,412,293	22,585,929	7,627,437	3,627,146	10,060,341	149,052	1,666,758	(367,302)	68,637,077	
Unit 3 Total	2,503,139	16,616,901	17,160,710	27,092,758	21,780,427	17,685,418	132,023,188	33,893,838	5,785,685	(4,054)	274,538,010	
Project Directs Total	11,834,762	29,455,275	55,341,747	45,196,408	43,879,484	166,566,659	167,984,615	41,660,695	6,230,062	448,880	568,598,587	

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	2004 \$ - 100% Level										Total Rec.	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		
OSG Disposal Contract												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U2 Material	0	0	0	0	0	0	0	0	0	0	0	0
U2 Contract	0	0	0	0	0	134,145	256,864	2,771,131	0	0	0	3,162,140
U2 Other	0	0	0	385,134	0	275,437	(218,115)	(36,245)	0	0	20,170	426,381
Unit 2 Total	0	0	0	385,134	0	409,582	38,749	2,734,886	0	0	20,170	3,588,521
U3 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U3 Material	0	0	0	0	0	0	0	0	0	0	0	0
U3 Contract	0	0	0	0	0	134,145	309,987	117,793	1,264,585	1,171,022	1,171,022	2,997,532
U3 Other	0	0	0	374,807	0	0	38,748	(36,245)	1,539,501	(1,439,393)	477,418	477,418
Unit 3 Total	0	0	0	374,807	0	134,145	348,735	81,548	2,804,086	(268,371)	3,474,950	3,474,950
OSG Disposal Total	0	0	0	759,941	0	543,727	387,484	2,816,434	2,804,086	(248,201)	7,063,471	7,063,471
Other Radwaste Disposal												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U2 Material	0	0	0	0	0	27,346	0	77,727	0	0	0	105,073
U2 Contract	0	0	0	0	0	49,117	378,942	342,875	0	0	0	770,934
U2 Other	0	0	0	0	0	12,055	3,125	0	0	0	0	15,180
Unit 2 Total	0	0	0	0	0	88,518	382,067	420,602	0	0	0	891,187
U3 Labor	0	0	0	0	0	0	2,808	1,579	0	0	0	4,387
U3 Material	0	0	0	0	0	0	13,554	32,073	62,831	0	0	108,458
U3 Contract	0	0	0	0	0	0	21,889	1,074,517	77,487	0	0	1,173,893
U3 Other	0	0	0	0	0	0	77,139	(32,758)	0	57,264	57,264	101,645
Unit 3 Total	0	0	0	0	0	0	115,390	1,075,411	140,318	57,264	57,264	1,388,383
Other Radwaste Total	0	0	0	0	0	88,518	497,457	1,496,013	140,318	57,264	2,279,570	2,279,570
Burial												
U2 Labor	0	0	0	0	0	0	0	0	0	0	0	0
U2 Material	0	0	0	0	0	27,346	0	77,727	0	0	0	105,073
U2 Contract	0	0	0	0	0	183,262	635,806	3,114,006	0	0	0	3,933,074
U2 Other	0	0	0	385,134	0	287,492	(214,990)	(36,245)	0	0	20,170	441,561
Unit 2 Total	0	0	0	385,134	0	498,100	420,816	3,155,488	0	0	20,170	4,479,708
U3 Labor	0	0	0	0	0	0	2,808	1,579	0	0	0	4,387
U3 Material	0	0	0	0	0	0	13,554	32,073	62,831	0	0	108,458
U3 Contract	0	0	0	0	0	134,145	331,876	1,192,310	1,342,072	1,171,022	1,171,022	4,171,425
U3 Other	0	0	0	374,807	0	0	115,887	(69,003)	1,539,501	(1,382,129)	579,063	579,063
Unit 3 Total	0	0	0	374,807	0	134,145	464,125	1,156,959	2,944,404	(211,107)	4,863,333	4,863,333
Burial Total	0	0	0	759,941	0	632,245	884,941	4,312,447	2,944,404	(190,937)	9,343,041	9,343,041

**Steam Generator Replacement Project
Recorded Costs through January 2013**

	2004 \$ - 100% Level										Total Rec.	
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		
Corporate Overheads												
Unit 2	163,763	1,788,674	2,187,295	1,527,838	1,496,379	7,046,376	6,436,842	521,492	13,746	(91)	21,182,314	
Unit 3	59,535	1,601,430	1,548,261	1,554,190	1,540,994	1,213,847	2,974,016	1,966,114	468,035	95,151	13,021,573	
Total	223,298	3,390,104	3,735,556	3,082,028	3,037,373	8,260,223	9,410,858	2,487,606	481,781	95,060	34,203,887	
Unit 2 SGRP												
U2 Direct Labor	1,039,787	2,703,333	3,444,818	2,948,735	1,826,590	3,641,804	2,156,794	732,456	3,068	0	18,497,385	
U2 Direct Non-Labor	8,291,836	10,135,041	34,736,219	15,154,915	20,272,467	145,239,437	33,804,633	7,034,401	441,309	452,934	275,563,192	
U2 Burial Labor	0	0	0	0	0	0	0	0	0	0	0	
U2 Burial Non-Labor	0	0	0	385,134	0	498,100	420,816	3,155,488	0	20,170	4,479,708	
U2 Corp OH	163,763	1,788,674	2,187,295	1,527,838	1,496,379	7,046,376	6,436,842	521,492	13,746	(91)	21,182,314	
Unit 2 Total	9,495,386	14,627,048	40,368,332	20,016,622	23,595,436	156,425,717	42,819,085	11,443,837	458,123	473,013	319,722,599	
Unit 3 SGRP												
U3 Direct Labor	1,000,296	1,699,765	2,582,917	3,086,485	1,679,886	794,736	5,321,011	2,167,187	155,715	(3,620)	18,484,378	
U3 Direct Non-Labor	1,502,843	14,917,136	14,577,793	24,006,273	20,100,541	16,890,682	126,702,177	31,726,651	5,629,970	(434)	256,053,632	
U3 Burial Labor	0	0	0	0	0	0	2,808	1,579	0	0	4,387	
U3 Burial Non-Labor	0	0	0	374,807	0	134,145	461,317	1,155,380	2,944,404	(211,107)	4,858,946	
U3 Corp OH	59,535	1,601,430	1,548,261	1,554,190	1,540,994	1,213,847	2,974,016	1,966,114	468,035	95,151	13,021,573	
Unit 3 Total	2,562,674	18,218,331	18,708,971	29,021,755	23,321,421	19,033,410	135,461,329	37,016,911	9,198,124	(120,010)	292,422,916	
SGRP												
Labor	2,040,083	4,403,098	6,027,735	6,035,220	3,506,476	4,436,540	7,480,613	2,901,222	158,783	(3,620)	36,986,150	
Non-Labor	9,794,679	25,052,177	49,314,012	39,921,129	40,373,008	162,762,364	161,388,943	43,071,920	9,015,683	261,563	540,955,478	
Corp OH	223,298	3,390,104	3,735,556	3,082,028	3,037,373	8,260,223	9,410,858	2,487,606	481,781	95,060	34,203,887	
SGRP Total	12,058,060	32,845,379	59,077,303	49,038,377	46,916,857	175,459,127	178,280,414	48,460,748	9,656,247	353,003	612,145,515	

H-W Escalation Rate 4.25% 6.50% 5.05% 4.77% 6.74% 0.72% 4.71% 3.99% 2.46% 1.38%

HW deflation factor 1.000 0.939 0.894 0.853 0.799 0.794 0.758 0.729 0.711 0.702

Based on Handy-Whitman Index of actual costs through 2011 and Global Insight's projection of Handy-Whitman's index for 2012 and 2013 as of Q4 2012.

Burial Escalation Rate 7.50% 7.50% 7.50% 7.50% 7.50% 7.50% 7.12% 6.93% 6.93% 6.93%

Burial Deflation Factor 1.000 0.930 0.865 0.805 0.749 0.697 0.650 0.608 0.569 0.532

Based on NDCITP decisions 2002 through 2009

Appendix B
Witness Qualifications

1 A. The purpose of my testimony in this proceeding is to sponsor portions of Exhibit SCE-6 as
2 identified in the Table of Contents thereto.

3 Q. Was this material prepared by you or under your supervision?

4 A. Yes, it was.

5 Q. Insofar as this material is factual in nature, do you believe it to be correct?

6 A. Yes, I do.

7 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best
8 judgment?

9 A. Yes, it does.

10 Q. Does this conclude your qualifications and prepared testimony?

11 A. Yes, it does.

SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF DAVID H. OPITZ

1
2
3
4 Q. Please state your name and business address for the record.

5 A. My name is David H. Opitz, and my business address is 2244 Walnut Grove Avenue, Rosemead,
6 California 91770.

7 Q. Briefly describe your present responsibilities at the Southern California Edison Company.

8 A. I am the SONGS Capital Project Finance Manager, having oversight of financial controls and
9 reporting of capital projects including the steam generator replacement project.

10 Q. Briefly describe your educational and professional background.

11 A. I hold a degree in Civil Engineering from the Pennsylvania State University as well as a MBA from
12 Pepperdine University. I have 30 years of Project Management experience that encompasses all
13 aspects of project management. This includes engineering, procurement, construction, finance,
14 contract management, project controls, project development, and project assessments. I have a
15 diverse background of experience through work in several industries including nuclear power, fossil
16 power, broadcasting, automotive, and heavy construction.

17 Q. What is the purpose of your testimony in this proceeding?

18 A. The purpose of my testimony in this proceeding is to sponsor the portions of Exhibit SCE-6 as
19 identified in the Table of Contents thereto.

20 Q. Was this material prepared by you or under your supervision?

21 A. Yes, it was.

22 Q. Insofar as this material is factual in nature, do you believe it to be correct?

23 A. Yes, I do.

24 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?

25 A. Yes, it does.

26 Q. Does this conclude your qualifications and prepared testimony?

27 A. Yes, it does.

1 Revenue Requirements and Tariffs taking on the additional responsibilities for managing SCE's
2 tariffs. I have previously testified before the California Public Utilities Commission.

3 Q. What is the purpose of your testimony in this proceeding?

4 A. The purpose of my testimony in this proceeding is to sponsor portions of Exhibits SCE-6, as
5 identified in the Table of Contents thereto.

6 Q. Was this material prepared by you or under your supervision?

7 A. Yes, it was.

8 Q. Insofar as this material is factual in nature, do you believe it to be correct?

9 A. Yes, I do.

10 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best
11 judgment?

12 A. Yes, it does.

13 Q. Does this conclude your qualifications and prepared testimony?

14 A. Yes, it does.