

Application No.: A.06-04-
Exhibit No.: SDG&E-2
Witness: Michael R. Olson

In the Matter of San Diego Gas & Electric Company's
Application for Authorization to (1) to Participate in
the Steam Generator Replacement Project As A Co-
Owner of San Onofre Nuclear Generating Station Unit
Nos. 2 & 3 (SONGS 2 & 3) ; (2) Establish Ratemaking
For Cost Recovery; and (3) Address Other Related
Steam Generator Replacement Issues

(U 902-E)

Application No. 06-04-____

**PREPARED DIRECT TESTIMONY
OF
MICHAEL R. OLSON**

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA
APRIL 14, 2006**

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1 **PREPARED DIRECT TESTIMONY**

2 **OF**

3 **MICHAEL R. OLSON**
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6 **I. OVERVIEW**

7 San Diego Gas & Electric Company (“SDG&E”) owns a 20% interest in the San
8 Onofre Nuclear Generating Station Units 2, and 3 (“SONGS”). Southern California
9 Edison (“SCE”) is the majority owner of SONGS and the Operating Agent for the owners
10 of SONGS.

11 The first purpose of this testimony is to establish SDG&E’s ownership share of
12 the Steam Generator Replacement Project (“SGRP”) cost estimate consistent with the
13 treatment provided SCE in D.05-12-040. In A.04-02-026 SCE estimated the cost of the
14 SGRP at the 100% level. In D.05-12-040¹ the Commission ordered that:

15 “The reasonable cost estimate for SGRP is \$680 million (2004 dollars) plus
16 accumulated Allowance for Funds Used During Construction (AFUDC) (\$569
17 million for replacement steam generator installation, \$111 million for removal
18 and disposal of the original steam generators, and accumulated AFUDC),
19 multiplied by SCE’s ownership share. To the extent that replacement steam
20 generator installation costs are less than \$569 million, more funds may be used
21 for removal and disposal of the original steam generators, and vice versa.”
22

23 This testimony calculates SDG&E’s ownership share of the \$569 million and
24 \$111 million amounts referred to above,² including SCE’s contractual overheads
25 (Administrative and General, Pensions and Benefits, and Payroll Taxes) which are billed
26 to SDG&E under the terms of the San Onofre Operating Agreement, and SDG&E’s own

¹ D.05-12-040 Ordering Paragraph 3.

² Throughout this testimony SDG&E’s share of SGRP-related costs are expressed in 2004 dollars instead of 2006 dollars for ease of comparison with the corresponding 100% level costs contained in A.04-02-026 and D.05-12-040. Conversion of 2004 dollars to nominal dollars will be addressed in SDG&E’s application to include SGRP costs permanently in rates to be filed after completion of the SGRP on the same basis as set forth in D.05-12-040, Ordering Paragraphs 11 and 13.

1 Administrative and General (“A&G”) overhead which is applied to the aforementioned
2 costs. The sum of these three elements, SDG&E's share of the SGRP cost estimate,
3 SCE’s contractual overheads, and SDG&E's A&G, equals \$142 million (2004\$), all of
4 which will result from SDG&E’s 20% ownership share of SONGS and SDG&E’s
5 participation in the SGRP. That amount should be adopted in this proceeding as
6 SDG&E's SGRP cost estimate as follows:

- 7 • \$117 million (2004\$) for installation of replacement steam generators for
8 SONGS.
- 9 • \$25 million (2004\$) for removal and disposal of original steam generators for
10 SONGS.

11 The second purpose of this testimony is to calculate SDG&E’s ownership share of
12 the maximum allowable SGRP cost (“Maximum Allowable Amount”) consistent with the
13 treatment provided SCE in D.05-12-040. In D.05-12-040³ the Commission ordered that

14 “The maximum allowable SGRP cost is \$782 million as adjusted for inflation and
15 cost of capital. This cap applies to total SGRP costs. SCE will not be allowed to
16 recover total SGRP costs in excess of this amount.”
17

18 The \$782 million amount referred to above equals 115% of the \$680 million
19 (2004\$) 100% level SGRP cost estimate adopted by the Commission. Thus, this
20 testimony provides a calculation of SDG&E’s share of the Maximum Allowable Amount
21 by applying a factor of 115% to SDG&E's share of the SGRP cost estimate of \$142
22 million (2004\$). That amount is \$163 million (2004\$).

³ D.05-12-040, Ordering Paragraph 6.

1 The third purpose of this testimony is to establish SDG&E's ownership share of
2 the forecast of SONGS O&M and Capital costs through 2022 contained in Attachment A
3 of D.05-12-040 ("Attachment A costs"). The Commission determined the SGRP to be
4 cost-effective based in part on the Attachment A costs.⁴ Thus SDG&E has calculated its
5 ownership share of the Attachment A costs and used those amounts as inputs to its SGRP
6 economic analysis which is presented by SDG&E witness Michael Schneider. This
7 testimony calculates SDG&E's ownership share of the Attachment A costs for use in
8 SDG&E's SGRP economic analysis.

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10 **II. SDG&E'S OWNERSHIP SHARE OF THE SGRP COST ESTIMATE**

11 In D.05-12-040, the Commission found that SCE's \$100% level SGRP cost
12 estimate of \$680 million (2004\$) is reasonable.⁵ Accordingly, SDG&E agrees with and
13 relies upon SCE's testimony in A.04-02-026 with respect to the SGRP cost estimate. As
14 SCE has done, SDG&E separates SGRP costs into two components. SDG&E estimates
15 its share of the SGRP cost estimate to be \$142 million (2004\$) as follows:

- 16 • \$117 million (2004\$) for installation of replacement steam generators for
17 Units 2 and 3.
- 18 • \$25 million (2004\$) for removal and disposal of original steam generators for
19 Units 2 and 3.

20 This section is intended to explain the process used to calculate SDG&E's share
21 of the SGRP cost estimate.

⁴ Inclusion of the Attachment A costs in the Commission's base case cost-effectiveness model is discussed in D.05-12-040, *Mimeo* on page 14 (for O&M) and 17 (for capital). D.05-12-040 concluded on page 67 that the SGRP is cost-effective under Scenario 3 (base case plus 16% higher gas cost).

⁵ D.05-12-040, Ordering Paragraph 3.

- 1 • First, the 100% level SGRP cost estimate including SCE internal overheads in
2 nominal dollars was obtained from SCE-3 Part 2, Appendix E, page E-2. That
3 information is reproduced in Table MRO-1 below.
- 4 • This cost information was modified to remove SCE overheads, and broken
5 down into labor and non-labor components for the proper allocation of SCE's
6 contractual overheads.
- 7 • The resultant was then multiplied by 20% which is SDG&E's ownership share
8 of SONGS.
- 9 • At that point SDG&E added SCE's contractual overheads (A&G, Pensions
10 and Benefits, and Payroll Taxes)⁶ which are billed to SDG&E under the terms
11 of the San Onofre Operating Agreement.
- 12 • Next, SDG&E's own A&G overhead was added to the aforementioned costs.⁷
- 13 • Finally, the costs were de-escalated to 2004 dollars using the appropriate
14 deflation factors.⁸

15 The resulting total makes up SDG&E's share of the SGRP cost estimate in 2004
16 dollars as shown in Table MRO-2 below.

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⁶ SCE's contractual overheads were calculated using overhead rates that are currently in effect.

⁷ SDG&E's A&G overhead was calculated using the rate that is currently effect.

⁸ Projected deflation factors were obtained from SCE-3 Part 2 Table V-9 for all costs except burial costs (low level radioactive waste burial is a component of Removal & Disposal cost). Burial costs were deflated at 7.5% which is the rate used in the most recently approved Nuclear Decommissioning Cost Triennial Proceeding (D.03-10-015, Conclusion of Law 14).

TABLE MRO-1
SONGS 2 & 3 SGRP CASH FLOW
 Nominal Dollars in Millions @ 100% Level

Year	UNIT 2			UNIT 3			Total		
	Installation	Removal & Disposal	Total	Installation	Removal & Disposal	Total	Installation	Removal & Disposal	Total
2004	10	0	10	8	0	8	18	0	18
2005	36	0	36	31	0	31	67	0	67
2006	37	0	37	31	0	31	68	0	68
2007	43	0	43	36	0	36	79	0	79
2008	38	0	38	32	0	32	70	0	70
2009	156	31	187	44	5	49	200	36	236
2010	36	23	59	95	41	136	131	64	195
2011	0	25	25	2	23	25	2	48	50
2012	0	0	0	0	2	2	0	2	2
Total	356	79	435	279	71	350	635	150	785

Source: SCE-3 Part 2, Appendix E, Page E-2

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TABLE MRO-2
SONGS 2 & 3 SGRP CASH FLOW
 2004\$ Dollars in Millions @ SDG&E Share Including Overheads

Year	UNIT 2			UNIT 3			Total		
	Installation	Removal & Disposal	Total	Installation	Removal & Disposal	Total	Installation	Removal & Disposal	Total
2004	2.0	0.0	2.0	1.6	0.0	1.6	3.7	0.0	3.7
2005	7.1	0.0	7.1	6.0	0.0	6.0	13.1	0.0	13.1
2006	7.2	0.0	7.2	5.9	0.0	5.9	13.1	0.0	13.1
2007	8.2	0.0	8.2	6.7	0.0	6.7	14.9	0.0	14.9
2008	7.3	0.0	7.3	5.7	0.0	5.7	13.0	0.0	13.0
2009	26.5	5.9	32.4	9.2	0.8	10.0	35.7	6.7	42.4
2010	6.4	3.7	10.1	16.6	7.0	23.6	23.0	10.7	33.7
2011	0.0	3.6	3.6	0.4	3.3	3.7	0.4	6.9	7.3
2012	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.4	0.4
Total	65	13	78	52	11	64	117	25	142

Note: Total costs have been rounded to the nearest million

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III. SDG&E'S OWNERSHIP SHARE OF THE MAXIMUM ALLOWABLE AMOUNT

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In D.05-12-040, the Commission ordered that the 100% level Maximum Allowable Amount is \$782 million (2004\$)⁹ or 115% of the \$680 million SGRP cost estimate. SDG&E calculates its share of Maximum Allowable Amount to be \$163 million (2004\$). This section is intended to explain the process used to calculate SDG&E's share of Maximum Allowable Amount.

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⁹ D.05-12-040, Ordering Paragraph 6.

- 1 • First, the 100% level Maximum Allowable Amount of \$782 million (2004\$) was
2 obtained from D.05-12-040 Ordering Paragraph 6.
- 3 • That amount equals 115% of the \$680 million (2004\$) cost estimate adopted by
4 the Commission.¹⁰
- 5 • SDG&E then applied this 115% factor to its share of the SGRP cost estimate of
6 \$142 million (2004\$) established in Section II of this testimony.
- 7 • The resultant is SDG&E's share of Maximum Allowable Amount. That amount
8 equals \$163 million (2004\$).

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10 **IV. SDG&E'S OWNERSHIP SHARE OF THE ATTACHMENT A COSTS**

11 In D.05-12-040, Attachment A provides a forecast of SONGS O&M costs and
12 capital additions through 2022 which are 10% and 25% higher, respectively, than SCE's
13 base estimates which are based on SCE's 2006 General Rate Case ("GRC"). The CPUC
14 used the Appendix A costs in its SGRP cost-effectiveness analysis. SDG&E has used its
15 ownership share of the Attachment A costs as an input to its SGRP economic analysis
16 which is presented in the testimony of witness Michael Schneider.

17 This section is intended to explain the process used to calculate SDG&E's share
18 of the Attachment A costs.

¹⁰ D.05-12-040, Ordering Paragraph 3.

- 1 • First, 100% level O&M and Capital costs including Fuel and certain SCE internal
2 overheads in 2004 dollars were obtained from D.05-12-040, Attachment A. That
3 information is reproduced in Table MRO-3 below.
- 4 • This cost information was modified to remove SCE internal overheads, and
5 broken down into labor and non-labor components for the proper allocation of
6 SCE's contractual overheads.
- 7 • The resultant was then multiplied by 20% which is SDG&E's ownership share of
8 SONGS.
- 9 • At that point SDG&E added SCE's contractual overheads (A&G, Pensions and
10 Benefits, and Payroll Taxes)¹¹ which are billed to SDG&E under the terms of the
11 San Onofre Operating Agreement.
- 12 • Finally, SDG&E's own A&G overhead was added to the aforementioned costs,
13 for capital only.¹²

14 The resulting total makes up SDG&E's share of the Attachment A costs in 2004
15 dollars as shown in Table MRO-4 below. These costs are used in SDG&E's SGRP
16 economic analysis which is presented by witness Michael Schneider.

¹¹ SCE's contractual overheads were calculated using overhead rates that are currently in effect.

¹² SDG&E's A&G overhead was calculated using the rate that is currently effect.

TABLE MRO-3
TABLE OF ADOPTED O&M COSTS AND CAPITAL ADDITIONS
 2004 Dollars in Thousands @ 100% Level

Year	O&M Costs	Capital Additions
2009	483,009	90,458
2010	499,781	97,583
2011	523,769	92,834
2012	525,820	93,271
2013	516,780	92,645
2014	518,086	91,983
2015	521,096	94,976
2016	521,212	95,939
2017	579,514	94,162
2018	447,402	94,105
2019	590,119	76,667
2020	510,288	57,716
2021	524,595	33,517
2022	456,044	16,675

Source: D. 05-12-040, Attachment A

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TABLE MRO-4
TABLE OF ADOPTED O&M COSTS AND CAPITAL ADDITIONS
 2004 Dollars in Thousands @ SDG&E Share Including Overheads

Year	O&M Costs	Capital Additions
2009	108,629	19,473
2010	112,009	20,959
2011	116,861	19,948
2012	117,271	20,028
2013	115,451	19,885
2014	115,712	19,735
2015	116,327	20,353
2016	116,350	20,545
2017	128,692	20,282
2018	100,884	20,256
2019	130,835	16,463
2020	114,154	12,358
2021	117,042	7,263
2022	102,638	3,611

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V. CONCLUSION

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In this testimony, SDG&E has established its ownership share of the 100% level SGRP cost estimate adopted in D.05-12-040 (prior to the 15% contingency factor applied in D.05-12-040) to be \$142 million (2004\$) as follows:

- 1 • \$117 million (2004\$) for installation of replacement steam generators for
2 SONGS.
- 3 • \$25 million (2004\$) for removal and disposal of original steam generators for
4 SONGS.

5 SDG&E is requesting the Commission to find in this proceeding that SDG&E's
6 ownership share of the 100% level SGRP cost estimate is reasonable, and to allow
7 SDG&E to utilize any excess Installation funds for Removal & Disposal and vice versa
8 consistent with the treatment provided SCE in D.05-12-040.¹³

9 Secondly, SDG&E has calculated its ownership share of the 100% level
10 Maximum Allowable Amount consistent with the treatment provided SCE in D.05-12-
11 040. SDG&E is requesting the Commission to find in this proceeding that its share of the
12 Maximum Allowable Amount adopted in D.05-12-040 is \$163 million (2004\$).

13 Finally, SDG&E has established for use in its cost-effectiveness model its share
14 of the SONGS O&M costs and capital additions through 2022 established in D.05-12-
15 040 Attachment A.

16 **VI. QUALIFICATIONS**

17 My name is Michael R. Olson. My business address is 8306 Century Park Court,
18 San Diego, California 92123. I am employed by SDG&E as a Team Leader of the
19 Nuclear Section in the Electric Department. I received a Bachelor of Science degree in
20 Mechanical Engineering from California Polytechnic State University in San Luis Obispo
21 in 1973, and a Masters of Business Administration degree from the University of San
22 Diego in 1989. I am a registered Professional Engineer in the state of California in
23 Mechanical Engineering. I have been employed by SDG&E in various positions since
24 1980. My professional experience includes power plant engineering and maintenance,

1 natural gas transmission system planning and engineering, and petroleum refinery
2 engineering. My current responsibilities include representing SDG&E's ownership
3 interests at SONGS. I have previously testified before this Commission.

4 This concludes my prepared direct testimony.