

Application of Southern California Edison)
Company (U 338-E) for Authorization:)
(1) to replace San Onofre Nuclear)
(SONGS 2 & 3) steam generators; (2))
establish ratemaking for cost recovery; and)
(3) address other related steam generator)
replacement issues.)
_____)

Application No. 04-02-026
Exhibit No.: (SDG&E-4) *IAI-R*
Witness: Michael M. Schneider

**ERRATA TO
PREPARED DIRECT TESTIMONY
OF MICHAEL M. SCHNEIDER
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

January 14, 2005

1 SCE in 2004, and SCE would accept responsibility for all future decommissioning costs
2 associated with SDG&E's current 20% ownership share. Finally, SDG&E would enter
3 into a PPA with SCE in 2004 to provide SDG&E's customers a fixed amount of energy
4 each year through 2022.

5 Analysis for Alternative 3 includes all costs identified under Alternative 1,
6 including SDG&E's 20% share of SONGS O&M and fuel, as well as SDG&E's
7 projected SONGS depreciation, return, and NDT contributions. However under
8 Alternative 3 these costs would be paid by SCE and recovered from SDG&E through the
9 PPA. Therefore the cost of the PPA expressed in 2004 present value dollars, is equal to
10 the 2004 present value of all costs associated with Alternative 1.

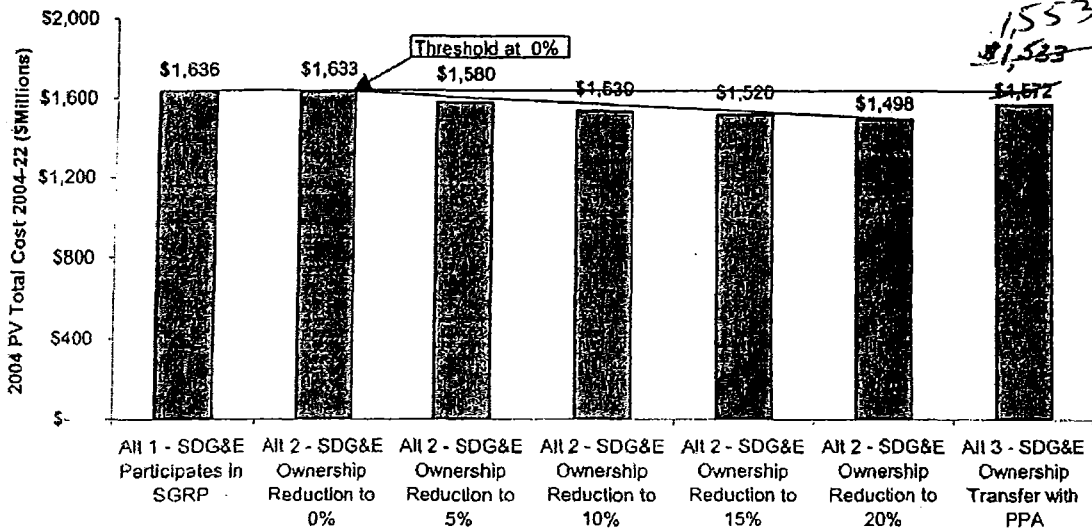
11 Under the PPA, SCE would provide to SDG&E a fixed amount of energy
12 equivalent to SDG&E's current 430 MW entitlement in SONGS at a capacity factor of
13 91.8%. That capacity factor was chosen because it is equal to the historic average of
14 SONGS 2&3 capacity factors over the past 5 years (1999-2003). Since this capacity
15 factor is greater than the capacity factor projected by SCE in their cost-effectiveness
16 study (88%), Alternative 3 would result in somewhat more energy being delivered to
17 SDG&E than Alternative 1. Therefore, while the total 2004\$ cost of the PPA would
18 equal the total 2004\$ cost of Alternative 1, the total 2004\$ cost of Alternative 3 is
19 somewhat less than the total 2004\$ cost of Alternative 1 because it includes the value of
20 this increased energy. As shown in Attachment 1 the value of this increased energy is
21 estimated to be \$102.3 million (2004\$).

Deleted: 63.5

1 power plant. However, as indicated from the sensitivity analysis conducted in Section
 2 VI-D and Figure 2 below, the Geothermal PPA would be cost-effective only if SDG&E's
 3 ownership share of SONGS remains above 15%. The Geothermal PPA option has added
 4 benefits of providing continued fuel diversity to SDG&E's generation portfolio as well as
 5 supporting the State's energy policy of requiring higher levels of renewable resources for
 6 future energy and capacity supply. These benefits should be considered in addition to the
 7 cost-effective analysis and provide a premium such that even if SDG&E's ownership in
 8 SONGS falls below 15%, a Geothermal PPA would be preferred over participation in the
 9 SGRP.

10 Alternative 1 is SDG&E's third preference. Under Alternative 1, SDG&E
 11 would continue to keep its 20% ownership percentage in SONGS, while SCE goes
 12 forward with the SGRP.

FIGURE 1
 TOTAL COST OF SDG&E ALTERNATIVES (2004\$, MILLIONS)
 BASED ON CTCC REPLACEMENT GENERATION



13
 14

Attachment - 1

Total Cost of SDG&E Alternatives (2004\$, Thousands)
Based on CTCC Replacement Generation

Description	Alternative 1 SDG&E Participates in SGRP	Alternative 2 SDG&E Ownership Reduction to:					Alternative 3 SDG&E Ownership Transfer with PPA
		0%	5%	10%	15%	20%	
Fuel Costs	\$ 180,602	\$ 708,147	\$ 576,261	\$ 444,375	\$ 312,489	\$ 180,602	\$ 180,602 200,202
Operating & Maintenance	\$ 1,002,422	\$ 510,775	\$ 633,687	\$ 756,598	\$ 879,510	\$ 1,002,422	\$ 1,002,422
NDT Contributions	\$ 76,763	\$ -	\$ -	\$ 12,439	\$ 45,636	\$ 76,763	\$ 76,763
Capital - Routine (non-SGRP)	\$ 238,035	\$ 127,975	\$ 155,490	\$ 183,005	\$ 210,520	\$ 238,035	\$ 238,035
Capital - SGRP	\$ 137,796	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,796
Capital - CTCC Power Plant	\$ -	\$ 286,014	\$ 214,510	\$ 143,007	\$ 71,503	\$ -	\$ -
Capital - Transmission Mitigation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Value of Additional Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (63,493) (102,295)
Total 2004 NPV \$	\$ 1,635,618	\$ 1,632,911	\$ 1,579,948	\$ 1,539,424	\$ 1,519,658	\$ 1,497,822	\$ 1,572,125 1,533,323 1,552,923

Total Cost of SDG&E Alternatives (2004\$, Thousands)
Based on Geothermal Replacement Generation

Description	Alternative 1 SDG&E Participates in SGRP	Alternative 2 SDG&E Ownership Reduction to:					Alternative 3 SDG&E Ownership Transfer with PPA
		0%	5%	10%	15%	20%	
Fuel Costs	\$ 180,602	\$ 77,246	\$ 103,085	\$ 128,924	\$ 154,763	\$ 180,602	\$ 180,602 200,202
Operating & Maintenance	\$ 1,002,422	\$ 413,942	\$ 561,062	\$ 708,182	\$ 855,302	\$ 1,002,422	\$ 1,002,422
NDT Contributions	\$ 76,763	\$ -	\$ -	\$ 12,439	\$ 45,636	\$ 76,763	\$ 76,763
Capital - Routine (non-SGRP)	\$ 238,035	\$ 127,975	\$ 155,490	\$ 183,005	\$ 210,520	\$ 238,035	\$ 238,035
Capital - SGRP	\$ 137,796	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,796
Geothermal PPA	\$ -	1,447,640 \$ 1,521,380	\$ 1,141,035	723,820 \$ 760,690	\$ 380,345	\$ -	\$ -
Capital - Transmission Mitigation	\$ -	\$ -	1,085,730 \$ -	\$ -	361,910 \$ -	\$ -	\$ -
Value of Additional Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (63,493) (102,295)
Total 2004 NPV \$	\$ 1,635,618	2,066,804 \$ 2,140,544	\$ 1,960,673	1,756,370 \$ 1,793,240	\$ 1,646,566	\$ 1,497,822	\$ 1,572,125 1,533,323 1,552,923

Attachment - 2

Total Cost of SDG&E Alternatives (2004\$/MWh)
Based on CTCC Replacement Generation

Description	Alternative 1 SDG&E Participates in SGRP	Alternative 2 SDG&E Ownership Reduction to:					Alternative 3 SDG&E Ownership Transfer with PPA
		0%	5%	10%	15%	20%	
Fuel Costs	\$ 2.92	\$ 11.45	\$ 9.32	\$ 7.18	\$ 5.05	\$ 2.92	\$ 2.92 3.24
Operating & Maintenance	\$ 16.20	\$ 8.26	\$ 10.24	\$ 12.23	\$ 14.22	\$ 16.20	\$ 16.20
NDT Contributions	\$ 1.24	\$ -	\$ -	\$ 0.20	\$ 0.74	\$ 1.24	\$ 1.24
Capital - Routine (non-SGRP)	\$ 3.85	\$ 2.07	\$ 2.51	\$ 2.96	\$ 3.40	\$ 3.85	\$ 3.85
Capital - SGRP	\$ 2.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2.23
Capital - CTCC Power Plant	\$ -	\$ 4.62	\$ 3.47	\$ 2.31	\$ 1.16	\$ -	\$ -
Capital - Transmission Mitigation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Value of Additional Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1.03) (1.65)
Total NPV \$/MWh	\$ 26.44	\$ 26.40	\$ 25.54	\$ 24.89	\$ 24.57	\$ 24.21	\$ 25.41 24.79 25.10

Total Cost of SDG&E Alternatives (2004\$/MWh)
Based on Geothermal Replacement Generation

Description	Alternative 1 SDG&E Participates in SGRP	Alternative 2 SDG&E Ownership Reduction to:					Alternative 3 SDG&E Ownership Transfer with PPA
		0%	5%	10%	15%	20%	
Fuel Costs	\$ 2.92	\$ 1.25	\$ 1.67	\$ 2.08	\$ 2.50	\$ 2.92	\$ 2.92 3.24
Operating & Maintenance	\$ 16.20	\$ 6.69	\$ 9.07	\$ 11.45	\$ 13.83	\$ 16.20	\$ 16.20
NDT Contributions	\$ 1.24	\$ -	\$ -	\$ 0.20	\$ 0.74	\$ 1.24	\$ 1.24
Capital - Routine (non-SGRP)	\$ 3.85	\$ 2.07	\$ 2.51	\$ 2.96	\$ 3.40	\$ 3.85	\$ 3.85
Capital - SGRP	\$ 2.23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2.23
Geothermal PPA	\$ -	\$ 23.40 24.60	\$ 18.45 17.55	\$ 11.70 12.30	\$ 6.15 5.85	\$ -	\$ -
Capital - Transmission Mitigation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Value of Additional Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1.03) (1.65)
Total NPV \$/MWh	\$ 26.44	\$ 33.41 34.60	\$ 31.70 30.80	\$ 28.37 26.99	\$ 26.62 26.32	\$ 24.21	\$ 25.41 24.79 25.10