

Application No.: A.16-03-004
Exhibit No.: SDGE-04
Witnesses: Sue E. Garcia
Adam H. Levin
Amir K. Moftakhar

PREPARED SUPPLEMENTAL TESTIMONY
ON BEHALF OF
SAN DIEGO GAS & ELECTRIC COMPANY

(2016 SONGS 1 DCE)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

February 17, 2017

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**PREPARED SUPPLEMENTAL TESTIMONY
ON BEHALF OF SDG&E**

I. INTRODUCTION (S. GARCIA)

The purpose of this testimony is to demonstrate the reasonableness of the 2016 SONGS Unit 1 Decommissioning Cost Estimate (“DCE”) and San Diego Gas & Electric’s (“SDG&E”) forecast of its SDG&E-only costs for SONGS Unit 1. This testimony provides support that the California Public Utilities Commission (“CPUC” or “Commission”):

- (1) Approve the joint request by Southern California Edison Company (“SCE”) and SDG&E to find the 2016 Unit 1 DCE to be reasonable;¹ and
- (2) Approve the request by SDG&E that its forecast for future Unit 1 “SDG&E-only” costs is reasonable.

This volume of testimony is organized as follows: Chapter II discusses SDG&E’s efforts to review the 2016 Unit 1 DCE. Chapter III discusses decommissioning industry expert Mr. Adam Levin’s review of the 2016 Unit 1 DCE. Chapter IV describes SDG&E’s estimate for its future “SDG&E-only” costs for Unit 1.

SDG&E previously submitted testimony on these subjects in this proceeding as Ex. SDGE-01 (served March 1, 2016). This testimony supersedes Ex. SDGE-01.

II. SDG&E’S REVIEW OF THE 2016 UNIT 1 DCE (S. GARCIA)

SCE provided an updated Unit 1 DCE to SDG&E for review. SDG&E (and its decommissioning expert consultant, Mr. Levin, as discussed in more detail in below) reviewed this cost estimate and determined that the estimate was prepared using standard industry conventions, best practices and assumptions consistent with information available to SDG&E. SDG&E also provided feedback to SCE about the Unit 1 DCE as it was in development.

As part of its review, SDG&E also considered the differences between the 2012 Unit 1 DCE and the 2016 Unit 1 DCE.²

¹ The updated 2016 Unit 1 DCE, using methodologies consistent with the 2014 Units 2&3 DCE, identifies a \$239.4 million (\$2014) total cost for the activities to be undertaken by the decommissioning agent and general contractor. If the 2016 Unit 1 DCE is adopted by the Commission, SDG&E’s twenty-percent (20%) ratable share of decommissioning costs for SONGS Unit 1 would be \$47.9 million (2014\$). This excludes future SDG&E-only costs.

² SCE-04 (SCE witness J. Perez; March 1, 2016).

The cost difference between the 2012 and 2016 estimates, adjusted for work completed in 2013 through 2015 (ignoring the effects of escalation), is summarized in Table 1.³

Table 1
Increase in DCE
100% Share, 2014\$ in Millions

SONGS Unit 1	100% Share
2016 Decommissioning Cost Estimate	\$239.4
2012 Decommissioning Cost Estimate	<u>\$169.9</u>
Increase	\$69.5
% Increase	41%

SDG&E focused its review on the drivers of the major cost changes between the 2012 and 2016 Unit 1 DCEs. Table 2 shows the major cost change drivers between the 2012 and 2016 estimates:⁴

Table 2
Changes in 2016 SONGS 1 DCE
100% Share, 2014\$ in Millions

Line No.	Item	Variance
1	Undistributed Costs	37.0
2	Full Removal of Intake/Discharge Conduits	35.7
3	License Termination	10.5
4	Subsurface Structure Removal	(38.4)
5	Misc.	13.7
6	Escalation	11.0
7	Total Increase	69.5

SDG&E also focused its review on the categories of costs that had been previously missed in the 2012 Unit 1 DCE and the refinement of other categories for the 2016 Unit 1 DCE. These changes resulted in both upward and downward costs. SDG&E has reviewed the variances and understands the tasks and cost adjustments to be reasonable.

³ SCE-04, Table IV-2.

⁴ Reprinted from SCE-04 (Table IV-3).

1 In my opinion, the updated Unit 1 DCE provides a detailed site-specific cost estimate and
2 includes a decommissioning plan, work breakdown structure, and schedule in a similar format to
3 the 2014 DCE for Units 2&3.⁵ The updated Unit 1 DCE also used methodologies consistent
4 with the 2014 Units 2&3 DCE. The evaluation of decommissioning work plans for the entire
5 site and possible sequencing of work activities were considered during the development of the
6 updated Unit 1 DCE to derive a realistic scope of work that was predicated on safety, efficiency
7 and cost effectiveness.

8 It is my belief that the DCE reflects a realistic estimate of the cost to effectively and
9 safely decommission SONGS Unit 1 and complies with existing regulations. SDG&E believes
10 the 2016 Unit 1 DCE is reasonable and should be adopted.

11 **III. DECOMMISSIONING INDUSTRY EXPERT’S REVIEW OF THE 2016 UNIT 1**
12 **DCE (A. LEVIN)**

13 The purpose of my testimony in this proceeding is to provide my expert opinion of the
14 2016 Unit 1 DCE. At SDG&E’s request, I provided critical review of the DCEs for SONGS.

15 During my almost 40-year career in the commercial nuclear industry, I have had the
16 opportunity to develop and review decommissioning cost estimates for more than 40 commercial
17 nuclear units. In my opinion, the 2016 SONGS Unit 1 DCE provides realistic estimates of the
18 costs expected to be incurred while decommissioning the site. The DCE used industry-accepted
19 methods for cost estimating, appropriate site-specific inputs, and reasonable, conservative
20 assumptions regarding the disposition of radiological, hazardous and municipal waste from the
21 site. Additionally, the DCE generally conforms to the guidance on preparing decommissioning
22 cost estimates provided by the NRC.⁶

23 **A. The 2016 Unit 1 DCE Reflects a Realistic Decommissioning Approach**

24 The 2016 Unit 1 DCE reflects a realistic approach to decommissioning SONGS Unit 1.
25 The 2016 SONGS Unit 1 DCE describes the immediate dismantlement and decontamination of
26 the entire SONGS site. This approach to decommissioning is known as “DECON.” In

⁵ The 2014 DCE for Units 2&3 was found by the Commission to be reasonable in D.14-12-082.

⁶ U.S. Nuclear Regulatory Commission, Regulatory Guide 1.202, “Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors,” February 2005.

1 DECON,⁷ the major decommissioning activities at SONGS begin with (1) completing the
2 transfer of spent nuclear fuel into dry cask storage, followed by (2) major equipment removal
3 (e.g., the reactor vessel, reactor internals, steam generators, primary loop piping and valves), (3)
4 removal of the balance of the plant systems, structures and components, and (4) restoration of the
5 site.

6 Radioactively-contaminated components will be disposed of at the NRC-licensed low-
7 level radioactive waste (“LLRW”) disposal facilities at Envirocare of Utah (“Envirocare”) and
8 Waste Control Specialists (“WCS”) in Texas. Other non-hazardous, non-radioactive waste
9 generated during decommissioning will be disposed of at an out-of-state municipal landfill.
10 These activities and disposal plans are reasonably reflected in the DCEs.

11 When the site has been cleared of LLRW and municipal waste, SCE as the NRC licensee
12 will: (1) submit a license termination plan to NRC for its approval, and (2) the site will be
13 restored to a state acceptable to the State of California and various federal agencies. Spent
14 nuclear fuel will remain on site at the SONGS Independent Spent Fuel Storage Installation
15 (“ISFSI”) until accepted and removed by the DOE for storage off site or disposal. These events
16 have been properly reflected in the Unit 1 DCE.

17 **B. Major Assumptions of Unit 1 DCE Are Reasonable**

18 There are a definable number of major drivers impacting decommissioning cost and
19 schedule specifically applicable to the SONGS project. Site specific material quantities, labor
20 costs, energy costs, insurance, property taxes and other costs recognized in NRC regulatory
21 guidance and industry decommissioning experience must be presented in a comprehensive
22 SONGS DCE. To develop a logical decommissioning schedule and a realistic estimate of
23 decommissioning costs, the SONGS DCEs must address the following site specific critical
24 assumptions in reasonable detail:

- 25 1) Site security and emergency response requirements;
26 2) The continuing availability of LLRW and municipal disposal facilities accepting
27 waste from SONGS;

⁷ The DECON decommissioning scenario is defined by the NRC as “the equipment, structures, and portions of the facility and site that contain radioactive contaminants are promptly removed or decontaminated to a level that permits termination of the license after cessation of operations. (Decontamination is initiated within a couple of years after shutdown and continues until completed, usually within 7 to 10 years)”. *Id.* at I.202-3.

1 3) Agreement between the SONGS participants, State of California and the U.S.
2 Department of the Navy officials upon the site’s end state conditions; and

3 4) The date assumed by which the DOE will complete its obligation to accept and
4 remove spent nuclear fuel from SONGS for storage off site or disposal.

5 The Unit 1 DCE contains the same site specific critical assumptions above except the last
6 assumption (the “DOE Start Date”), which I address in the next section – as they appeared in the
7 Commission-approved 2014 SONGS Units 2&3 DCE and are thus reasonable.

8 **C. The DOE Start Date Assumption in the 2016 SONGS 1 DCE is Reasonable**

9 Many of the costs underlying the decommissioning of a nuclear plant are identifiable,
10 well understood, and are similar (in scope) at commercial nuclear plant decommissioning across
11 the United States. These include labor, waste disposal, regulatory fees and other normal business
12 costs incurred to operate a major construction project (like taxes). Other significant site-specific
13 costs, as noted above, need to be addressed to complete the DCE picture for SONGS. These cost
14 components have been reasonably addressed in the 2016 SONGS Unit 1 DCE.

15 One principal change in SONGS decommissioning assumptions identified in the 2016
16 SONGS Unit 1 DCE from those in the 2014 SONGS Units 2&3 DCE is the date assumed for
17 DOE performance under the Standard Contract – to begin accepting spent nuclear fuel for
18 disposal (the “DOE Start Date”). The 2014 SONGS Units 2&3 DCE assumed a DOE Start Date
19 of 2024.⁸

20 SCE and SDG&E have continued to pursue a better understanding of the rapidly
21 changing factors impacting the DOE Start Date. They have concluded, and I agree for the
22 reasons explained below, a new DOE Start Date – 2028 – should be used going forward. The
23 new DOE Start Date has been incorporated into the 2016 SONGS Unit 1 DCE.

24 The DOE Start Date and the rate at which the DOE will remove spent nuclear fuel have
25 been the subject of much public speculation. The 2016 SONGS Unit 1 DCE assumes the DOE
26 will begin removing fuel in 2028, based upon a previously assumed DOE Start Date of 2024 in
27 the 2012 SONGS Unit 1 DCE plus an additional four-year delay since that estimate of
28 performance.

⁸ *2014 Decommissioning Cost Analysis of [SONGS] Units 2&3* (September 5, 2014), at p. A-1-26, attached as Appendix A-1 to Ex. SCE-01 (“2014 SONGS 2&3 DCE”).

1 SDG&E has independently reviewed this assumption to assess the reliability of the
2 adjusted, assumed 2028 DOE Start Date and finds it to be a reasonable assumption based on
3 known facts. On July 18, 2006, DOE proposed that pending full Congressional funding,
4 geologic repository operations would begin in approximately 11 years (i.e., on March 31, 2017).
5 Given a delay of 11 years from the 2006 announcement without any action, it is arguable that a
6 “one-for-one” delay since 2006 would place DOE repository operations and the DOE Start Date
7 to 2028 (i.e., 2017 plus 11 years).

8 Based upon work performed in 2008 and published in January 2009, the DOE revised the
9 estimated start date based upon updated transportation plans, and pushed the DOE Start Date to
10 no earlier than 2020. This revision implies that the DOE believes approximately 12 years would
11 be required to implement transportation to a geologic repository. Again, arguing a “one-for-one”
12 delay since 2008 would place DOE repository operations and the DOE Start Date to 2029 (2008
13 plus 11 or 12 years).

14 Since these announcements, much has transpired, including the termination of the
15 licensing process at Yucca Mountain, and the commissioning and completion of a federal
16 administration study on the future of managing spent nuclear fuel and high-level radioactive
17 waste. The Blue Ribbon Commission report recommended, among other matters, that a program
18 to site consolidated interim storage facilities (“ISF”) - with the goal of first accepting spent
19 nuclear fuel from shutdown plants – should be pursued (“the Pilot ISF”). This DOE-sponsored
20 ISF approach would have begun removing spent fuel from shutdown plants followed by others in
21 industry by 2021. The DOE-assumed start date for Pilot ISF operations was predicated on work
22 beginning on the Pilot ISF by January 2014.

23 The Pilot ISF program has yet to be launched; Congress has not allocated the funding
24 required, and federal legislation needed in order for the DOE to move forward has yet to be
25 enacted. DOE has stated that federal legislation will be required to implement the Blue Ribbon
26 Commission recommendations. Given that little has been done to advance an integrated spent
27 fuel management plan, little is expected to be done until sometime in 2018.⁹

⁹ The 2018 federal budget will be assembled sometime in 2017. Pending an outcome which favors moving forward with the development of geologic repository – or an interim storage facility – funding may be available sometime in late 2017 to early 2018.

1 It is my opinion that approximately the same amount of time would be required to begin
2 operations at a geologic repository or a Pilot ISF. In either circumstance – a geologic repository
3 or an ISF – the start of operations schedule will be strongly driven by development of the
4 transportation program (which is similar for both) and the NRC licensing process. At this
5 juncture the NRC licensing process is anticipated to be very similar in terms of schedule for both
6 the license for a geologic repository already accepted by NRC for review, and for a Pilot ISF
7 licensing process being initiated. Assuming Congressional authority to proceed and the proper
8 funding authorizations established by late 2017 or early 2018, and using either my estimate of 10
9 years or DOE’s estimate of 11 years from authorization to repository operation, a 2028 DOE
10 Start Date is again a reasonable assumption.

11 Based upon my review of the 2016 SONGS Unit 1 DCE, my knowledge of and
12 involvement in previous industry decommissioning projects, and my familiarity with the history
13 of spent nuclear fuel management and pending programs to do the same, I find the 2016 SONGS
14 Unit 1 DCE to be a reasonable estimate of the anticipated costs with reasonable underlying
15 assumptions.

16 **IV. ESTIMATE OF FUTURE SDG&E-ONLY COSTS FOR UNIT 1 IS**
17 **REASONABLE (A. MOFTAKHAR)**

18 The purpose of my testimony in this proceeding is to demonstrate that the estimate of
19 future SDG&E-only SONGS costs for Unit 1 is reasonable.

20 In addition to SDG&E’s 20% share of the costs that SCE invoices to SDG&E, SDG&E
21 anticipates incurring SDG&E-only (100%) costs throughout the SONGS decommissioning
22 process. These costs are for SDG&E’s internal activities related to decommissioning and
23 oversight activities. SDG&E is responsible for and will incur 100% of these costs; they will
24 neither be billed to SDG&E by SCE nor shared by SCE.

25 These costs are organized into two high-level categories: labor and non-labor. Labor
26 refers to SDG&E internal labor. Non-labor has several components including consulting, outside
27 legal, property taxes, trust administration, and other miscellaneous expenses.

28 A detailed estimate of SDG&E-only costs is provided in the Labor, Consulting and
29 Legal, and Non-Labor forecast tables in Attachment A. As summarized in Table 3, SDG&E
30 estimates its future total internal costs over the decommissioning period for SONGS Unit 1 to be
31 \$2.9 million (2014\$).

Table 3
SDG&E-Only SONGS Unit 1 Decommissioning Costs
100% Share, 2014\$ in Millions

	SDG&E Labor	Other/Non-Labor	Total Costs
Total	\$1.0	\$1.9	\$2.9

SDG&E has added these SDG&E-only SONGS 1 costs to its 20% share of the 2016 SONGS 1 DCE to determine that SDG&E’s SONGS 1 Nuclear Decommissioning Trust fund is adequately funded.¹⁰ SDG&E has provided previous estimates of its internal costs associated with decommissioning in prior DCE reviews.¹¹ Consistent with the nature of DCEs, SDG&E expects that the cost and resource estimates will be refined as the decommissioning effort moves forward and updated information on actual costs becomes available.

This forecast of SDG&E-only costs for Unit 1 is based on SDG&E’s cost allocation assumptions, SDG&E labor cost, SDG&E non-labor cost expectations, contingency, and escalation rates. Each of these factors is described in more detail below.

A. Allocations of Estimated SDG&E-Only Costs Between Units 1, 2, and 3

The total SDG&E-only internal costs for Units 1, 2 and 3 are \$56.3M (2014\$). Unit 1 is allocated 5.15% of these costs (\$2.9M), and Units 2&3 are allocated 94.85% of these costs (\$53.4M) (2014\$). The allocations of future decommissioning costs (5.15% for Unit 1 and 94.85% for Units 2&3) are calculated based on the proportion of remaining decommissioning estimates in the 2016 Unit 1 DCE and the 2014 SONGS 2&3 DCE.¹² SDG&E allocates the costs of its SDG&E-only costs among the units the same way.

B. SDG&E Labor

The first category in Table 3 - “SDG&E Labor” - is for SDG&E staff who provide oversight of SONGS decommissioning costs and activities. Since the SONGS closure announcement in 2013, SDG&E has worked to develop a dedicated and focused core SONGS

¹⁰ See Ex. SDGE-05 (M. Woodruff).

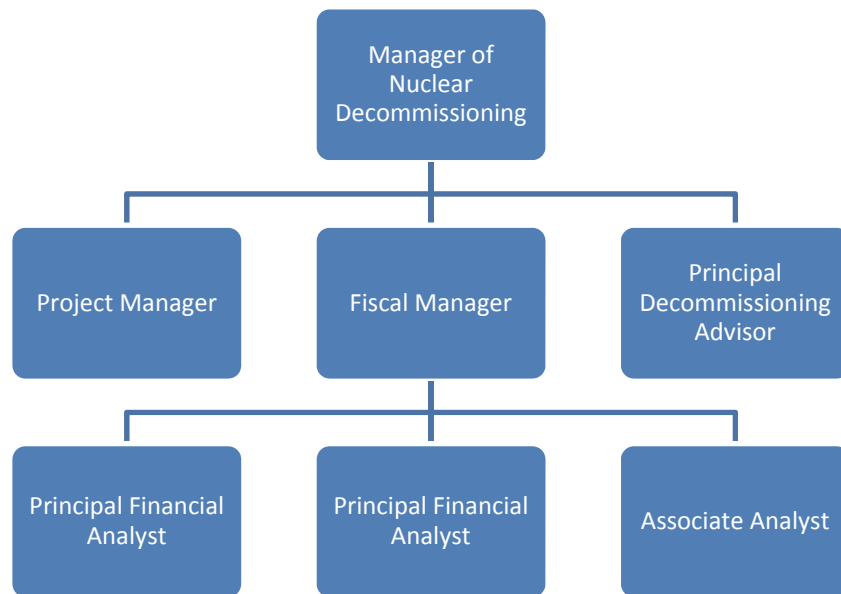
¹¹ Ex. SDGE-01-R-E-A (De Marco) at 13-16, submitted in A.14-12-007, *Joint Application of [SCE and SDG&E] to Find the 2014 SONGS Units 2 & 3 Decommissioning Cost Estimate Reasonable* (December 10, 2014).

¹² To perform this calculation, the 2016 DCE for Unit 1 is de-escalated to 2014\$ to \$239.0 M (100% share) and the 2014 DCE for Units 2&3 in 2014\$ is \$4,411.0 M (100% share).

1 Team to oversee SONGS decommissioning activities. The goal of the SONGS Team is to
2 manage SDG&E’s oversight of decommissioning activities in an efficient and effective manner
3 from a technical, regulatory and financial perspective. SDG&E expects internal staffing levels to
4 correlate with the intensity of decommissioning activities. SDG&E will provide the appropriate
5 level of resources for its SONGS Team, as needed.

6 As of February 2017, SDG&E’s, SONGS Team is organized according to the structure
7 set forth below in Table 4.
8

Table 4



9
10
11 SDG&E expects to supplement this focused core team with outside industry experts,
12 consultant and legal counsel, as needed, detailed in Section C below.

13 **C. Other/Non-Labor**

14 The second type of SDG&E-only costs identified in Table 3 is “Other/Non-Labor.” The
15 “Other/Non-Labor” category consists of three specific types of costs: decommissioning
16 consultants external to SDG&E, decommissioning counsel external to SDG&E, and direct costs
17 related to oversight activities.

18 As SDG&E proceeds through the decommissioning process, specific decommissioning
19 expertise in decommissioning projects learned at other nuclear sites can provide significant

1 benefits for ratepayers and independently assure SDG&E that the efforts at SONGS are
2 consistent with industry practice. SDG&E currently retains external decommissioning
3 consultants. One such expert has been Mr. Adam Levin, whose specific industry knowledge and
4 experience have proven to be valuable as SDG&E conducts proper oversight to the SONGS
5 decommissioning process and to validate that proposed activities at SONGS are consistent with
6 similar nuclear stations undergoing decommissioning. SDG&E's use of decommissioning
7 consultants and experts is expected follow the decommissioning activities in terms of use and
8 intensity. SDG&E expects high utilization of experts and consultants in the near term. SDG&E
9 expects the need for such expertise to taper off following the completion of the dismantling
10 work, when SONGS will have only spent fuel on site while awaiting DOE pickup and final
11 license termination.

12 SDG&E also has retained outside legal counsel with expertise in nuclear
13 decommissioning issues to advise and counsel SDG&E on numerous decommissioning topics.
14 The costs associated with this area are difficult to anticipate or estimate, but SDG&E has
15 endeavored to include a reasonable estimate of outside legal costs based on anticipated future
16 activities.

17 Finally, SDG&E incurs direct costs related to its oversight activities at SONGS, including
18 travel reimbursement, phone services, ongoing professional education and wireless
19 communication. SDG&E's estimate for these costs corresponds to the estimated SDG&E
20 SONGS Team members.

21 **D. Property Taxes**

22 SDG&E pays property taxes to the California State Board of Equalization based on the
23 sum of its property located in the State of California. Property taxes are then allocated to the
24 various counties where SDG&E property is located.

25 SDG&E has a SONGS Regulatory Asset.¹³ Because SDG&E does not own the land at
26 SONGS, SDG&E calculates the amount of property taxes to be paid for SONGS by the present
27 value of future cash flows expected from the SONGS Regulatory Asset. This calculation
28 includes SDG&E recovering the balance of its investment in SONGS, as well as return on its

¹³ The SONGS Regulatory Asset is calculated based on the terms of the SONGS OII Settlement Agreement, approved by D.14-11-040. The amortization period ends February 2022.

1 investment. Over time, the SONGS Regulatory Asset shrinks as the investment and return on
2 investment is recovered by SDG&E.

3 SDG&E has estimated declining property taxes through 2023 and no property taxes from
4 2024 on, as shown in Attachment A in the Non-Labor table. SDG&E expects that when SDG&E
5 is no longer recovering its investment from the SONGS Regulatory Asset, that SDG&E will no
6 longer be responsible for paying property taxes. This assumption can change in the future based
7 on a variety of factors and will be updated as more information is known to SDG&E.

8 **E. Trust Administration**

9 Nuclear Decommission Trust (“NDTs”) Administration costs are also included in the
10 “Non-Labor-Direct Costs” category.¹⁴ SDG&E incurs several types of trust administration costs
11 including trustee fees, audit costs, tax and legal services for the NDTs, investment consulting,
12 and NDT committee member fees.¹⁵

13 Trustee Fees are paid to BNY Mellon to serve as the trustee of the NDT. These amounts
14 are forecasted at a fixed fee annually. Audit, tax, and legal service fees are expenses incurred for
15 auditing NDT financial statements, providing tax advice including tax opinions and verification
16 of tax treatment, and counseling on legal issues associated with the NDT. Investment consulting
17 fees are paid for NDT performance and investment analysis done by consultants. Committee
18 member fees are expenses paid to the three non-SDG&E members of the NDT Committee for
19 their service.

20 SDG&E has included a forecast of trustee, audit, tax, and legal service, investment
21 consulting, and committee member fees based historical costs from 2012-2015. These costs are
22 detailed in Attachment A in the Non-Labor Table.

23 **F. Contingency**

24 SDG&E applies a contingency of 25% for its estimated SDG&E-only costs for future
25 years. The contingency amount will help SDG&E help manage risk associated with currently

¹⁴ SDG&E is required by Article 3.05 of its NDT Master Trust Agreements to submit an annual report that includes an accounting of these NDT administration costs to the Commission.

¹⁵ SDG&E also incurs investment management fees for the NDTs. These fees are allocated to the investment manager for managing the investments in the NDTs and are paid out as a percentage of the overall capital that is managed. To calculate the liquidation value of the NDTs, taxes and fees (specifically investment management fees) are netted out. *See* Ex. SDGE-05 at 2 (M. Woodruff). Therefore, this type of cost has been excluded from our forecast.

1 unknown events as SDG&E proceeds through the decommissioning process and learns more
2 about its needs and incurs actual costs.

3 A contingency of 25% is consistent with previous Commission-approved
4 decommissioning costs estimates. For example, the Commission-approved SONGS Units 2&3
5 applied a 25% contingency to all costs in the DCE, with limited exceptions (such as actual
6 expenditures (0% contingency) and hazardous and asbestos waste disposal (50% contingency)).¹⁶

7 A 25% contingency is also consistent with the findings of a Commission-directed PG&E
8 Technical Position Paper (“Study”) on the topic of what level of contingency should be applied
9 to DCEs for SONGS 1, 2 and 3, Humboldt Unit 3, and Diablo Canyon Units 1 and 2.¹⁷ The
10 Study surveyed government published reports and guidance on contingency factors, examined
11 how the nuclear industry applied contingencies and reviewed recommended cost engineering
12 practices. The Study concluded that “the 25 percent contingency factor” should be used for the
13 California nuclear plants.¹⁸

14 Therefore, SDG&E asserts that applying a 25% contingency factor to its SDG&E-only
15 DCE forecast for Unit 1 is reasonable.

16 **G. Escalation**

17 The costs provided in Table 3 above are shown in 2014\$. Any potential escalated costs
18 would use the same escalation projections that SCE utilizes from the IHS Global Insight
19 economic forecasting service.¹⁹ This service has been used in past escalation projections by both
20 utilities.

¹⁶ 2014 SONGS 2&3 DCE at A-1-20.

¹⁷ *PG&E, Establishing an Appropriate Contingency Factor for Inclusion in The Decommissioning Revenue Requirements*, Study Number: DECON-POS-H002], April 2009, at 1. The Study was ordered by the Commission in D.07-01-003 at OP 8.

¹⁸ Study at 1 (“A 25 percent contingency factor for all nuclear decommissioning costs should be applied).

¹⁹ SCE-06 at 5-7.

1 **WITNESS QUALIFICATIONS FOR AMIR K. MOFTAKHAR**

2 My name is Amir K. Moftakhar. I am employed by SDG&E as the Project Manager,
3 SONGS for SDG&E. My business address is 8330 Century Park Court, San Diego, California
4 92123.

5 I received a Bachelor’s of Managerial Economics degree from the University of
6 California, Davis in 2001. I received a Master’s of Business Administration from Pepperdine
7 University in 2003 and a Master’s in Leadership from the University of Southern California in
8 2014. I have been employed by SDG&E since 2009. I have over 15 years of professional work
9 experience, with the vast majority of my experience in finance, financial operations and banking.
10 In my current capacity as Project Manager, SONGS, I am responsible for helping to manage
11 SDG&E’s oversight role as a co-participant for the SONGS decommissioning project.

12 I have previously testified before this Commission.
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ATTACHMENT A
SDG&E-Only Cost Estimate

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Attachment A

SDG&E Internal Labor Forecast (2014 Dollars in Millions)

SDG&E Labor Costs					
	Oversight	Fiscal	Overhead	Contingency	Total
2016	\$0.4	\$0.4	\$0.6	\$0.3	\$1.6
2017	\$0.4	\$0.4	\$0.6	\$0.3	\$1.6
2018	\$0.4	\$0.4	\$0.6	\$0.3	\$1.6
2019	\$0.4	\$0.4	\$0.6	\$0.3	\$1.6
2020	\$0.4	\$0.4	\$0.6	\$0.3	\$1.6
2021	\$0.2	\$0.4	\$0.5	\$0.3	\$1.4
2022	\$0.2	\$0.4	\$0.5	\$0.3	\$1.4
2023	\$0.2	\$0.4	\$0.5	\$0.3	\$1.4
2024	\$0.2	\$0.4	\$0.5	\$0.3	\$1.4
2025	\$0.2	\$0.4	\$0.5	\$0.3	\$1.4
2026	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2027	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2028	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2029	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2030	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2031	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2032	\$0.2	\$0.0	\$0.2	\$0.1	\$0.5
2033	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2034	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2035	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2036	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2037	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2038	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2039	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2040	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2041	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2042	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2043	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2044	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2045	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2046	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2047	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2048	\$0.1	\$0.0	\$0.1	\$0.0	\$0.2
2049	\$0.1	\$0.0	\$0.1	\$0.0	\$0.2
2050	\$0.1	\$0.0	\$0.1	\$0.0	\$0.2
2051	\$0.1	\$0.0	\$0.1	\$0.0	\$0.2
2052	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
	\$5.0	\$3.6	\$7.2	\$3.9	\$19.7

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**SDG&E Legal & Consulting Forecast
(2014 Dollars in Millions)**

SDG&E Legal & Consulting Costs				
	Legal / Consultant	Overhead	Contingency	Total
2016	\$0.4	\$0.0	\$0.1	\$0.4
2017	\$0.2	\$0.0	\$0.1	\$0.3
2018	\$0.2	\$0.0	\$0.1	\$0.3
2019	\$0.2	\$0.0	\$0.0	\$0.2
2020	\$0.2	\$0.0	\$0.0	\$0.2
2021	\$0.2	\$0.0	\$0.0	\$0.2
2022	\$0.2	\$0.0	\$0.0	\$0.2
2023	\$0.2	\$0.0	\$0.0	\$0.2
2024	\$0.1	\$0.0	\$0.0	\$0.2
2025	\$0.1	\$0.0	\$0.0	\$0.1
2026	\$0.1	\$0.0	\$0.0	\$0.1
2027	\$0.1	\$0.0	\$0.0	\$0.1
2028	\$0.1	\$0.0	\$0.0	\$0.1
2029	\$0.1	\$0.0	\$0.0	\$0.1
2030	\$0.1	\$0.0	\$0.0	\$0.1
2031	\$0.1	\$0.0	\$0.0	\$0.1
2032	\$0.1	\$0.0	\$0.0	\$0.1
2033	\$0.0	\$0.0	\$0.0	\$0.0
2034	\$0.0	\$0.0	\$0.0	\$0.0
2035	\$0.0	\$0.0	\$0.0	\$0.0
2036	\$0.0	\$0.0	\$0.0	\$0.0
2037	\$0.0	\$0.0	\$0.0	\$0.0
2038	\$0.0	\$0.0	\$0.0	\$0.0
2039	\$0.0	\$0.0	\$0.0	\$0.0
2040	\$0.0	\$0.0	\$0.0	\$0.0
2041	\$0.0	\$0.0	\$0.0	\$0.0
2042	\$0.0	\$0.0	\$0.0	\$0.0
2043	\$0.0	\$0.0	\$0.0	\$0.0
2044	\$0.0	\$0.0	\$0.0	\$0.0
2045	\$0.0	\$0.0	\$0.0	\$0.0
2046	\$0.0	\$0.0	\$0.0	\$0.0
2047	\$0.0	\$0.0	\$0.0	\$0.0
2048	\$0.1	\$0.0	\$0.0	\$0.1
2049	\$0.1	\$0.0	\$0.0	\$0.1
2050	\$0.1	\$0.0	\$0.0	\$0.1
2051	\$0.1	\$0.0	\$0.0	\$0.1
2052	\$0.0	\$0.0	\$0.0	\$0.0
	\$2.9	\$0.0	\$0.7	\$3.7

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**SDG&E Non Labor Forecast
(2014 Dollars in Millions)**

SDG&E Non Labor Costs					
	Non-Labor	Trustee Fees	Property Tax	Contingency	Total
2016	\$0.1	\$0.4	\$2.5	\$0.8	\$3.8
2017	\$0.1	\$0.4	\$1.9	\$0.6	\$3.0
2018	\$0.1	\$0.4	\$1.4	\$0.5	\$2.4
2019	\$0.1	\$0.4	\$1.2	\$0.4	\$2.1
2020	\$0.1	\$0.4	\$0.9	\$0.3	\$1.7
2021	\$0.1	\$0.4	\$0.6	\$0.3	\$1.3
2022	\$0.1	\$0.4	\$0.2	\$0.2	\$0.9
2023	\$0.1	\$0.4	\$0.0	\$0.1	\$0.6
2024	\$0.1	\$0.4	\$0.0	\$0.1	\$0.6
2025	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2026	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2027	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2028	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2029	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2030	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2031	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2032	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2033	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2034	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2035	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2036	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2037	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2038	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2039	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2040	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2041	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2042	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2043	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2044	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2045	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2046	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2047	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2048	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2049	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2050	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2051	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
2052	\$0.0	\$0.4	\$0.0	\$0.1	\$0.6
	\$1.3	\$16.3	\$8.8	\$6.6	\$32.9

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**SDG&E Forecast Totals
(2014 Dollars in Millions)**

	SDG&E Labor Costs	SDG&E Legal & Consulting Costs	SDG&E Non Labor Costs	SDG&E Total
	Total	Total	Total	Total Costs
2016	\$1.6	\$0.4	\$3.8	\$5.9
2017	\$1.6	\$0.3	\$3.0	\$4.9
2018	\$1.6	\$0.3	\$2.4	\$4.3
2019	\$1.6	\$0.2	\$2.1	\$4.0
2020	\$1.6	\$0.2	\$1.7	\$3.6
2021	\$1.4	\$0.2	\$1.3	\$2.9
2022	\$1.4	\$0.2	\$0.9	\$2.5
2023	\$1.4	\$0.2	\$0.6	\$2.2
2024	\$1.4	\$0.2	\$0.6	\$2.2
2025	\$1.4	\$0.1	\$0.6	\$2.1
2026	\$0.5	\$0.1	\$0.6	\$1.2
2027	\$0.5	\$0.1	\$0.6	\$1.2
2028	\$0.5	\$0.1	\$0.6	\$1.2
2029	\$0.5	\$0.1	\$0.6	\$1.2
2030	\$0.5	\$0.1	\$0.6	\$1.2
2031	\$0.5	\$0.1	\$0.6	\$1.2
2032	\$0.5	\$0.1	\$0.6	\$1.2
2033	\$0.0	\$0.0	\$0.6	\$0.6
2034	\$0.0	\$0.0	\$0.6	\$0.6
2035	\$0.0	\$0.0	\$0.6	\$0.6
2036	\$0.0	\$0.0	\$0.6	\$0.6
2037	\$0.0	\$0.0	\$0.6	\$0.6
2038	\$0.0	\$0.0	\$0.6	\$0.6
2039	\$0.0	\$0.0	\$0.6	\$0.6
2040	\$0.0	\$0.0	\$0.6	\$0.6
2041	\$0.0	\$0.0	\$0.6	\$0.6
2042	\$0.0	\$0.0	\$0.6	\$0.6
2043	\$0.0	\$0.0	\$0.6	\$0.6
2044	\$0.0	\$0.0	\$0.6	\$0.6
2045	\$0.0	\$0.0	\$0.6	\$0.6
2046	\$0.0	\$0.0	\$0.6	\$0.6
2047	\$0.0	\$0.0	\$0.6	\$0.6
2048	\$0.2	\$0.1	\$0.6	\$0.9
2049	\$0.2	\$0.1	\$0.6	\$0.9
2050	\$0.2	\$0.1	\$0.6	\$0.9
2051	\$0.2	\$0.1	\$0.6	\$0.9
2052	\$0.0	\$0.0	\$0.6	\$0.6
	\$19.7	\$3.7	\$32.9	\$56.3

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