

Application No.: A.18-03-xxx
Exhibit No.: SDGE-02
Witnesses: Sue E. Garcia
Charles D. Ladd
Adam H. Levin
Tracy M. Dalu

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

**(Reasonableness of SONGS 1, 2&3 Decommissioning Activities and Costs Incurred by
SDG&E in 2016 and 2017)**



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

March 15, 2018

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1 **PREPARED DIRECT TESTIMONY**
2 **ON BEHALF OF SDG&E**

3 **I. INTRODUCTION (S. GARCIA)**

4 In this document, San Diego Gas & Electric Company (“SDG&E”) is providing
5 testimony in support of its requests that the California Public Utilities Commission (“CPUC” or
6 “Commission”):

- 7 1) Approve as reasonable the \$0.2 million (SDG&E share, 2014\$) for San Onofre
8 Nuclear Generating Station Unit 1 (“SONGS Unit 1” or “SONGS 1”)
9 decommissioning expenses invoiced to SDG&E by Southern California Edison
10 Company (“SCE”) for completed distributed projects and undistributed activity
11 for the 2018 Nuclear Decommissioning Cost Triennial Proceeding (“NDCTP”)
12 review period;¹
- 13 2) Approve as reasonable the \$58.9 million (SDG&E share, 2014\$) for SONGS
14 Units 2&3 (“SONGS Unit 2&3” or “SONGS 2&3”) decommissioning expenses
15 invoiced to SDG&E by SCE for completed distributed projects and undistributed
16 activity costs for the 2018 NDCTP review period; and
- 17 3) Approve as reasonable the \$7.4 million (2014\$) in SDG&E-only costs for
18 SONGS incurred January 1, 2016 through December 31, 2017.

19 This volume of testimony is organized as follows: Chapter II provides a brief overview of
20 SDG&E’s request. Chapter III discusses the reasonableness review standard applicable to
21 SDG&E’s requests, and how the standard should be applied considering SDG&E’s oversight
22 role in 2016 and 2017. Chapter IV provides a review of SDG&E’s costs incurred, as billed by
23 SCE. Chapter V provides a review by SDG&E’s nuclear industry expert of the completed
24 distributed projects and undistributed decommissioning activities undertaken by SCE during this

¹ Although normally the NDCTP review period covers three years of costs, this NDCTP review period covers 2016 and 2017. The Administrative Law Judge’s Ruling Modifying Schedule dated June 27, 2017 in Application (“A.”) 16-03-004 set forth that the Utilities were to file on March 15, 2018 the 2018 NDCTP. Thus, the review period covered is only 2016 and 2017 as 2018 costs have not been incurred yet.

1 review period. Chapter VI provides a review of the SDG&E-only costs incurred in 2016 and
2 2017.

3 **II. OVERVIEW (S. GARCIA)**

4 The purpose of this testimony is to demonstrate the reasonableness of SONGS 1 and
5 SONGS 2&3 decommissioning expenses recorded by SDG&E that are subject for review in this
6 2018 NDCTP.

7 In A.16-03-004, the parties agreed to a Milestone Framework for reasonableness reviews
8 of SONGS decommissioning costs. Although A.16-03-004 and the agreed-upon Milestone
9 Framework are still pending a Commission decision at the time of this testimony's submittal,
10 SCE and SDG&E are using the Milestone Framework to determine what decommissioning costs
11 should be reviewed in this 2018 NDCTP proceeding.

12 The Milestone Framework groups distributed activities to form Major Projects. A Major
13 Project occurs when all physical work for a particular project (including the disposal of any
14 associated waste), as explicitly identified in the DCE line items, has been completed and all
15 associated costs have been recorded.²

16 In this 2018 NDCTP proceeding for SONGS 1, no Major Project was completed during
17 the 2016-2017 review period, so no costs associated with distributed activities will be reviewed.

18 In this 2018 NDCTP proceeding for SONGS 2&3, three Major Projects were completed.
19 SDG&E's total costs billed to SDG&E by SCE associated with those Major Projects were \$4.5
20 million (SDG&E share, 2014\$). In addition, in 2016 and 2017 SDG&E was billed a credit of

² A.16-03-004, Exhibit ("Ex.") SCE-SDGE-01 at 3.

1 \$0.9 million (SDG&E share, 2014\$) for one Major Project previously included in 2015 NDCTP
2 and is including these costs in this NDCTP for review.³

3 The Milestone Framework establishes that in the NDCTPs scheduled for 2018, 2024, and
4 2030, all undistributed activities recorded costs during the applicable NDCTP review period will
5 be reviewed for reasonableness.⁴ In 2016 and 2017, SDG&E’s total costs billed to SDG&E by
6 SCE associated with SONGS 1 undistributed activities were \$0.2 million (SDG&E share,
7 2014\$).⁵ In 2016 and 2017, SDG&E’s total costs billed to SDG&E by SCE associated with
8 SONGS 2&3 undistributed activities were \$55.3 million (SDG&E share, 2014\$).⁶

9 The Milestone Framework provides that all SDG&E-only internal costs incurred during
10 the prior three-year period will be reviewed for reasonableness in the NDCTP consistent with the
11 treatment of SCE’s undistributed activities costs in the proposed Milestone Framework.⁷

12 Therefore, all of SDG&E-only recorded costs for 2016 and 2017 will be reviewed for
13 reasonableness. SDG&E recorded \$7.4 million (2014\$) of SDG&E-only costs in 2016 and
14 2017.⁸

15 Table 1 summarizes these expenses and compares them to SDG&E’s 20% share of the
16 SONGS 1 Decommissioning Cost Estimate (“SONGS 1 DCE”) submitted in A. 16-03-004 and
17 the 2014 SONGS 2&3 DCE approved in D.16-04-019. On March 1, 2016, SCE submitted its

³ These costs are discussed further in Chapter IV.C.

⁴ A.16-03-004, Ex. SCE-SDGE-01 at 4.

⁵ These costs are discussed further in Chapter IV.B.

⁶ These costs are discussed further in Chapter IV.D.

⁷ A.16-03-004, Ex. SCE-SDGE-01 at 4.

⁸ These costs are discussed further in Chapter VI.

2016 update to the SONGS 1 DCE to the Commission in the 2015 NDCTP.⁹ The Commission has evaluated the reasonableness of the 2016 SONGS 1 DCE by reviewing the prepared testimony, discovery, evidentiary hearings, and briefs submitted by the interested parties. Although the Commission has not yet issued its final decision regarding the reasonableness of this DCE, SCE and SDG&E believe the 2016 SONGS 1 DCE provides the best available basis for the Commission to evaluate the reasonableness of the SONGS 1 decommissioning costs incurred during the 2016-2017 period.

Table 1
Summary of 2018 NDCTP Review Period Costs for SDG&E
(2014\$ Constant Dollars in Millions, 20% Level)

	Category	DCE	Recorded	Variance
1	SONGS 1 Distributed Activities Costs	\$0.0	\$0.0	\$0.0
2	SONGS 1 Undistributed Activities Costs	\$0.4	\$0.2	\$0.2
3	SONGS 1 Review Period Total	\$0.4	\$0.2	\$0.2
4				
5	SONGS 2&3 Major Projects – 2018 NDCTP	\$3.9	\$4.5	(\$0.6)
6	SONGS 2&3 Major Projects – 2015 NDCTP	\$0.0	(\$0.9)	\$0.9
7	SONGS 2&3 Undistributed Activities Costs	\$53.1	\$55.3	(\$2.2)
8	SONGS 2&3 Review Period Total	\$57.0	\$58.9	(\$1.9)
9				
10	SDG&E Only Costs	3.0	7.4	(\$4.3)

III. STANDARD OF REASONABLENESS REVIEW OF SDG&E’S SONGS DECOMMISSIONING COSTS (S. GARCIA)

A. Reasonableness Standard of Review

SDG&E respectfully requests that the Commission continue to apply its “reasonable manager standard” when completing its SONGS decommissioning reasonableness reviews.

The Commission’s reasonable manager standard reviews a utility’s actions based upon what the utility knew or should have known at the time the utility takes the action, not just the ultimate results or costs based on hindsight. The review standard also expressly provides that a

⁹ See A.16-03-004, Ex. SCE-04, Appendix 1.

1 utility's actions "may be found to be reasonable and prudent if the utility shows that its decision
2 making process was sound...., *even if it turns out not to have led to the best possible outcome.*"¹⁰

3 The Commission's reasonable manager standard does not hold the utilities to unachievable
4 perfect hindsight. It is therefore appropriate for the Commission to determine that SONGS
5 decommissioning activities and expenses are reasonable based on the information provided by
6 SCE and SDG&E in support of this Application.

7 **B. SDG&E Holds an Oversight Position at SONGS**

8 SONGS is licensed under the Nuclear Regulatory Commission ("NRC") as three units.
9 SDG&E has a 20% minority ownership stake in each of the three nuclear units and, as such, is
10 contractually obligated to pay its 20% ownership share of all costs including decommissioning
11 costs.¹¹ As recognized by the NRC, SCE is the licensee as well as the operating agent. In 2016
12 and 2017, SCE was the decommissioning agent. Throughout 2016 and 2017, the SONGS
13 Participants were governed by the 2015 SONGS Decommissioning Agreement.¹²

14 As a minority owner, SDG&E has a fiscal responsibility to fund operations and
15 decommissioning at SONGS. In 2016 and 2017, as a minority owner, SDG&E also had an
16 oversight role at SONGS. In 2016 and 2017, SDG&E fulfilled its oversight obligations and

¹⁰ Decision ("D.") 05-08-037 at 10-11 (emphasis added).

¹¹ SCE holds an approximately 75.74% interest, SDG&E holds a 20% interest, the City of Anaheim holds an approximately 2.47% interest, and the City of Riverside holds a 1.79% interest in SONGS 2&3 decommissioning liability. Ex. SCE-01 at 1.

¹² In April 2015, SDG&E executed a decommissioning agreement ("Decommissioning Agreement") with the other three Participants that governs SDG&E co-owner participation. The Decommissioning Agreement governs the decommissioning of all three units. The Decommissioning Agreement establishes a decommissioning agent, participant funding responsibilities and participant involvement in the governance of the decommissioning agent. Pursuant to the Decommissioning Agreement, Executive, Budget, Fiscal, and Legal committees were established. The Budget and Executive committees approve major monetary commitments. In addition, an independent nuclear expert (*i.e.* Decommissioning Advisor) assists the Executive Committee on an as-needed basis.

1 fiscal management roles in several different ways, as summarized in my direct testimony in Ex.
2 SDGE-01. For example, in 2016 and 2017 SCE was the decommissioning agent, which means
3 that it was making decisions about decommissioning activities at SONGS, and often performing
4 those activities itself. To ensure that it stayed informed of the decommissioning activities at
5 SONGS, SDG&E stationed a dedicated employee at the plant to follow major activities at the
6 site and to report to SDG&E management plant status relative to budget. SDG&E also reviewed
7 annual budgets as well as budgets for specific decommissioning projects and then tracked
8 progress monthly. SDG&E also sought confirmation from its retained nuclear expert, Mr. Levin,
9 that SCE's activities or plans for SONGS comported with industry practices. In 2017, Mr.
10 Joseph Carignan and Mr. Thomas LaGuardia conducted a training course for SDG&E focused on
11 challenges of decommissioning, industry lessons learned, and the methods and approaches for
12 providing decommissioning oversight. In addition, they worked with SDG&E personnel during
13 the DCE review process to provide technical guidance.

14 **C. The Commission Should Consider SDG&E's Unique Oversight Role at**
15 **SONGS When Conducting its Reasonableness Review of SDG&E's Costs**

16 In the 2015 NDCTP, Bruce Lacy for The Utility Reform Network provided testimony
17 with the following conclusions and recommendations:

- 18 • SDG&E is currently providing adequate staff for monitoring SONGS 2&3
19 decommissioning. The costs of that staff should be found reasonable;
- 20 • The SDG&E staff is showing diligence and persistence in their monitoring efforts; and

- The SDG&E monitoring effort provides opportunity for greater insight into SONGS decommissioning costs which should be encouraged by the Commission in future SONGS 2&3 NDCTPs.¹³

SDG&E respectfully recommends that the Commission keep SDG&E’s unique oversight and fiscal management role in mind when it determines the reasonableness of SDG&E’s decommissioning costs for this review period.¹⁴

IV. SDG&E’S REVIEW OF ITS RECORDED COSTS BILLED BY SCE (S. GARCIA)

In this instant filing, SDG&E reports \$0.2 million (SDG&E share, 2014\$) total SONGS 1 decommissioning expenditures and \$58.9 million (SDG&E share, 2014\$) total SONGS 2&3 decommissioning expenditures billed by SCE for its SONGS obligation that are covered in this review period. Table 2 presents these costs billed by SCE at a summary level.

Table 2
Summary of SDG&E Costs Billed by SCE
(2014\$ Constant Dollars in Millions, 20% Level)

	Category	DCE	Recorded	Variance
1	SONGS 1 Distributed Activities Costs	\$0.0	\$0.0	\$0.0
2	SONGS 1 Undistributed Activities Costs	\$0.4	\$0.2	\$0.2
3	SONGS 1 Review Period Total	\$0.4	\$0.2	\$0.2
6				
7	SONGS 2&3 Major Projects – 2018 NDCTP	\$3.9	\$4.5	(\$0.6)
8	SONGS 2&3 Major Projects – 2015 NDCTP	\$0.0	(\$0.9)	\$0.9
9	SONGS 2&3 Undistributed Activities Costs	\$53.1	\$55.3	(\$2.2)
10	SONGS 2&3 Review Period Total	\$57.0	\$58.9	(\$1.9)

SDG&E seeks a Commission finding that \$0.2 million (SDG&E share, 2014\$) for SONGS 1 and \$58.9 million (SDG&E share, 2014\$) that SDG&E incurred during this review

¹³ A.16-03-004, Ex. TURN-03 at 22.

¹⁴ SDG&E’s oversight and fiscal management roles and processes are described in detail in Ex. SDGE-01 at 4-10.

1 period for completed SONGS 2&3 Major Projects and undistributed activities are reasonable.
2 As described below, in its oversight role, SDG&E conducted its own review of these costs and
3 underlying activities. SDG&E also reviewed the completed Major Projects and undistributed
4 activities costs against the 2016 SONGS 1 DCE and 2014 SONGS 2&3 DCE. SDG&E has
5 concluded that the completed Major Projects and undistributed activities costs for SONGS 1 and
6 SONGS 2&3 were reasonable and appropriate. Therefore, SDG&E respectfully requests the
7 Commission to find its recorded costs for SONGS 1, completed Major Projects and undistributed
8 activities SONGS 2&3 costs as reasonable.

9 **A. SDG&E's On-Site and Accounting Review of Activities and Underlying**
10 **Costs**

11 In 2016 and 2017, SDG&E actively participated in meetings with SCE regarding
12 completed and on-going decommissioning activities. Based upon SDG&E's on-site
13 representation, SDG&E concurs that these efforts were appropriate and necessary. To
14 understand the activities occurring at the plant, SDG&E employees attended daily plant
15 meetings, weekly project status meetings, monthly project update meetings, and monthly
16 SONGS Participants Executive and Budget meetings and actively questioned and critically
17 reviewed the activities and processes. SDG&E understands the issues and concurs that SCE has
18 taken the appropriate actions necessary to decommission SONGS 1 and SONGS 2&3.

19 SDG&E also conducted an accounting review of the costs presented by SCE in support of
20 this Joint Application. SCE witnesses Mr. Robert Bledsoe and Mr. Lou Bosch present costs for
21 completed Major Projects and undistributed activities categories for SONGS 1 and SONGS 2&3
22 categories at the 100% level.¹⁵ Utilizing the accounting categories established in SCE's

¹⁵ Ex. SCE-04 and SCE-05 at Sections III, IV, and V.

1 testimony, SDG&E was able to aggregate invoiced costs to the same categories presented by Mr.
2 Bledsoe and Mr. Bosch. Due to the billing time lag for some completed projects, SDG&E's
3 recorded costs include both 2015 NDCTP and 2018 NDCTP completed Major Projects.

4 Attachment A, which includes SONGS 2&3 Major Projects covered in the 2015 NDCTP
5 review cycle but billed to SDG&E in 2016 or 2017, shows SDG&E's accounting of costs by line
6 item based upon the back-up it receives from SCE to support monthly invoices. Attachment A
7 shows a total amount of a \$0.9 million credit; SDG&E views it appropriate to include these costs
8 in the 2018 reasonableness review as they were recorded by SDG&E in 2016 or 2017.

9 Attachment B, which includes SONGS 2&3 Major Projects covered in the 2018 NDCTP
10 review cycle and undistributed activities costs billed to SDG&E in 2016 and 2017, shows the
11 costs by line item, and compares the 2014 SONGS 2&3 DCE for that line item to SDG&E's
12 accounting of costs based upon the back-up it receives from SCE to support monthly invoices.

13 **B. Reasonableness Review for SONGS 1 Costs**

14 For the 2018 NDCTP review, there were no completed distributed Major Projects that are
15 subject to review. For the 2018 NDCTP review, SDG&E requests that the Commission approve
16 as reasonable \$0.2 million (SDG&E share, 2014\$) billed by SCE in 2016 and 2017 for SONGS 1
17 undistributed activities.¹⁶

18 The undistributed activities costs that were billed to SDG&E were insurance, NRC fees,
19 association fees and expenses, ground water monitoring, site lease and easement, and contracted
20 services (seawall and pedestrian walkway repairs). Table 3 shows SDG&E's recorded
21 undistributed activities costs for SONGS 1 (which appear in detail in Attachment A).

¹⁶ Due to a lag in billing actual costs, the specific billing invoices included in this reasonableness review are for the cost months from October 2015 through October 2017. The 2015 NDCTP covered all actuals costs through September 2015.

Table 3
SONGS 1 - Summary Comparison of Undistributed Activities Cost to the 2016 DCE
(20% level, \$2014 in millions)

	Category	DCE	Recorded	Variance
1	Undistributed Activities Cost			
2	Insurance	\$0.15	\$0.00	\$0.15
3	NRC Fees	\$0.12	\$0.10	\$0.02
4	Association Fees and Expenses	\$0.00	\$0.02	(\$0.02)
5	Ground Water Monitoring	\$0.09	\$0.00	\$0.09
6	Site Lease and Easement	\$0.00	\$0.00	\$0.00
7	Contracted Services	\$0.00	\$0.11	(\$0.11)
8	Total	\$0.37	\$0.24	(\$0.13)

SDG&E’s recorded costs related to undistributed activities was \$0.24 million (SDG&E share, 2014\$), which were \$0.13 million (SDG&E share, 2014\$) under the 2016 SONGS 1 DCE. Provided below are the descriptions of the category of costs and the variance explanation to the 2016 SONGS 1 DCE.

Insurance

SDG&E was billed \$0.00 million¹⁷ (SDG&E share, 2014\$) for annual premiums for nuclear liability and workers’ compensation insurances. SCE continued to pay these premiums because SONGS 1 fuel is on the Independent Spent Fuel Storage Installation (“ISFSI”). SCE paid workers’ compensation insurance for all SCE employees working at SONGS and a portion was allocated to SONGS 1. The insurance for 2016 and 2017 was \$0.15 million (SDG&E share, 2014\$) under the 2016 SONGS 1 DCE amount. The cause of this variance was primarily due to SCE receiving insurance premium credits offsetting the amount of the insurance premiums paid for SONGS 1.¹⁸

¹⁷ Billed costs are actually \$0.002 million (SDG&E share, 2014\$).

¹⁸ Ex. SCE-04 at 5.

1 NRC Fees

2 SDG&E was billed \$0.10 million (SDG&E share, 2014\$) for NRC fees which were \$0.02
3 million (SDG&E share, 2014\$) under the 2016 SONGS 1 DCE amount. NRC fees incurred
4 were annual, periodic inspection and other fees assessed by NRC to perform their statutory
5 inspection and oversight functions of SONGS 1 activities. The main reason these costs were
6 lower than the 2016 SONGS 1 DCE was that the actual Part 171 annual fees came in lower than
7 the 2016 SONGS 1 DCE forecast amount which was based on fiscal year 2013 rate.¹⁹

8 Association Fees and Expenses

9 SDG&E was billed \$0.02 million (SDG&E share, 2014\$) for association fees and
10 expenses fees which were \$0.02 million (SDG&E share, 2014\$) over the 2016 SONGS 1 DCE
11 amount. This category of cost included Nuclear Energy Institute (“NEI”) membership fees,
12 which membership provided SCE access to valuable industry resources and decommissioning
13 lessons-learned information. These costs are higher than the 2016 SONGS 1 DCE because these
14 particular costs were not included in the 2016 SONGS 1 DCE.²⁰

15 Ground Water Monitoring

16 SDG&E was billed \$0.00 million²¹ (SDG&E share, 2014\$) for ground water monitoring
17 which is \$0.09 million (SDG&E share, 2014\$) under the 2016 SONGS 1 DCE amount. Ground
18 water monitoring expenses were costs associated with the NRC-sanctioned industry initiative to
19 perform ground water monitoring, to minimize the opportunity for the introduction of residual
20 radioactivity release to ground water. This included the installation of numerous monitoring

¹⁹ Ex. SCE-04 at 6.

²⁰ Ex. SCE-04 at 7.

²¹ Billed costs are actually \$0.004 million (SDG&E share, 2014\$).

1 wells and regular sampling of ground water. The main reason these costs were lower than the
2 2016 SONG 1 DCE was that subsequent to the development of the 2016 SONGS 1 DCE, and
3 due to declining tritium concentrations in the survey samples, SCE was able to reduce the survey
4 sampling frequency.²²

5 Site Lease and Easement

6 SDG&E was billed \$0.00 million²³ (SDG&E share, 2014\$) for site lease and easement
7 expenses which was \$0.00 million (SDG&E share, 2014\$) over the 2016 SONGS 1 DCE
8 amount. This cost represented lease and easement payments to the California State Lands
9 Commission and are higher than the 2016 SONGS 1 DCE because these particular costs were
10 not included in the 2016 SONGS 1 DCE.²⁴

11 Contracted Services

12 SDG&E was billed \$0.11 million (SDG&E share, 2014\$) for contracted services which
13 was \$0.11 million (SDG&E share, 2014\$) over the 2016 SONGS 1 DCE. This category of cost
14 included costs associated with maintaining the SONGS 1 seawall and pedestrian walkway,
15 removing a SONGS 1 concrete pad in the switchyard, and finalizing the 2016 SONGS 1 DCE.²⁵

16 Although these particular activities were not included in the 2016 SONGS 1 DCE, these
17 activities were appropriate decommissioning expenses required to be performed or necessary for
18 site decommissioning to continue.²⁶

²² Ex. SCE-04 at 8.

²³ Billed costs are actually \$0.001 million (SDG&E share, 2014\$).

²⁴ Ex. SCE-04 at 9.

²⁵ Ex. SCE-04 at 9-10.

²⁶ Ex. SCE-04 at 12-13.

1 For all of the above undistributed activities costs identified above, SDG&E considers
2 these costs to be appropriate and reasonable decommissioning expenses.

3 **C. Reasonableness Review of Completed Distributed Major Projects for**
4 **SONGS 2&3 (S. Garcia and C. Ladd)**

5 In this 2018 NDCTP proceeding for SONGS 2&3, three Major Projects, Select
6 Decommissioning General Contractor (“DGC”), Transition Modifications – Phase 2, and Spent
7 Fuel Islanding were completed. The Transition Modifications - Phase 2 had four projects in that
8 Major Project grouping – Large Organism Exclusion Device Modification (“LOED”), Records
9 Backlog, Simplification and Streamlining, and Special Purpose Vehicle (“SPV”) Support.
10 SDG&E’s total costs billed to SDG&E by SCE associated with those Major Projects were \$4.5
11 million (SDG&E share, 2014\$). In addition, in 2016 and 2017 SDG&E was billed a credit of
12 \$0.9 million (SDG&E share, 2014\$) for one Major Project (Legacy Radwaste Disposal)²⁷
13 previously included in 2015 NDCTP and is including these costs in this NDCTP for review.

14 For the 2018 NDCTP review SDG&E requests that the Commission approve as
15 reasonable \$3.6 million (SDG&E share, 2014\$) billed by SCE for SONGS 2&3 Major Projects.

16 Table 4 shows SDG&E’s recorded completed distributed Major Projects activities costs
17 for SONGS 2&3 (which appear in detail in Attachments A and B).

18

²⁷ The Legacy Radwaste Disposal project characterized, packaged and shipped radioactive waste that had been generated prior to the plant decommissioning decision. This reduced the amount of radioactive waste that would have to be disposed of by the selected DGC.

Table 4
Comparison of SDG&E 2018 Review Period Recorded Costs for Distributed Completed
Projects to the DCE
(20% level, 2014\$ in millions)

	Category	DCE	Recorded	Variance
1	Distributed Costs for Major Projects Completed During Prior Review Periods but Billed to SDG&E in Current Review Period			
2	Legacy Radwaste Disposal	\$0.0	(\$0.9)	\$0.9
3	Subtotal	\$0.0	(\$0.9)	\$0.9
4				
5	Distributed Costs for Major Projects Completed During 2018 Review Period			
6	Select Decommissioning General Contractor	\$0.2	\$2.4	(\$2.2)
7	Spent Fuel Islanding	\$3.7	\$1.2	\$2.5
8	Transition Modifications – Phase 2:			
9	Large Organism Exclusion Device Modifications	\$0.0	\$0.2	(\$0.2)
10	Records Reduction	\$0.0	\$0.4	(\$0.4)
11	Simplification & Streamlining	\$0.0	\$0.2	(\$0.2)
12	Special Purpose Vehicle Support	\$0.0	\$0.1	(\$0.1)
13	Subtotal	\$3.9	\$4.5	(\$0.6)
14				
15	Total Distributed Completed Projects	\$3.9	\$3.6	\$0.3

1. Select Decommissioning General Contractor (S. Garcia)

SCE used a competitive bidding process to select a DGC that offered the best combination of low risk, technical capability, lowest cost and best overall value. A three-phase process was used to select the DGC.

Phase 1 included developing DGC solicitation documents and identify qualified bidders, providing requests for information to potential bidders to enable SCE to verify and qualify bidders based on technical and commercial qualifications, requesting specific information (including safety records, financial condition, commercial experience and large decommissioning experience and any teaming arrangements that will be proposed), and identifying pre-qualified bidders and issuing them requests for proposal (“RFP”). Bidders were required to participate in the RFP process on-site to allow for better understanding of plant

1 facilities. Phase 2 included SCE conducting meetings and workshops on site with bidders and
2 cross-functional teams evaluating bids and making selection of DGC bid finalists. Phase 3
3 included negotiating terms and conditions of the contract. On December 20, 2016, the contract
4 was awarded to SONGS Decommissioning *Solutions*, a joint venture of AECOM and
5 *EnergySolutions*.

6 SDG&E fully participated in all phases of the DGC bid and selection process for the
7 entire duration through final approval and contract execution. SDG&E's participation included,
8 but was not limited to, active participation at various meetings such as on-site monthly
9 Participant Executive Committee meetings, DGC monthly status meetings, and weekly
10 Participant meetings. There were numerous presentations by the initial group of potential
11 bidders and follow-on presentations after the three final bidders were selected. SDG&E attended
12 these presentations and provided feedback to SCE. In addition, there were SDG&E-only
13 meetings to provide status to senior management and to obtain approval of the selection of the
14 DGC.

15 SDG&E's recorded costs related to this distributed project was \$2.4 million (SDG&E
16 share, 2014\$), which is \$2.2 million (SDG&E share, 2014\$) more than the 2014 SONGS 2&3
17 DCE forecast. The primary reason for the variance from the 2014 SONGS 2&3 DCE is due to
18 the large scope and scale of the decommissioning project. This extensive work was necessary to
19 ensure that the best possible DGC was selected with appropriate contract terms and conditions.
20 This work was far more complex and time consuming than anticipated by SCE.²⁸ Therefore,
21 SDG&E considers the activities and the costs related to the DGC selection process reasonable
22 and appropriate.

²⁸ Ex. SCE-05 at 18-19.

1 **2. Spent Fuel Islanding (C. Ladd)**

2 SCE created Nuclear Engineering Design Packages to design an Independent Spent Fuel
3 Pool Cooling System (“ISFPCS”) for SONGS 2&3 to continue cooling and purifying the Spent
4 Fuel Pool (“SFP”) after the Spent Fuel Pool Cooling System (“SFPCS”) has been removed from
5 service.

6 The functional objective of this design change is to allow the majority of the original
7 existing SFPCS and supporting systems for SONGS 2&3 to be removed from service by
8 installing an ISFPCS to cool the SFP’s temperature and maintain water quality within design
9 limits after the SFPCS is removed from service. The ISFPCS was installed by Westinghouse.

10 After installation of the ISFPCS, SONGS would be able to remove from service the
11 original SFPCS for SONGS 2&3 in preparation for defueling and decommissioning activities.
12 Spent fuel is and will continue to be stored in the SFP until after the SFPCS is removed from
13 service. Cooling and purification of the SFP is still required after the SFPCS has been removed
14 from service until the spent fuel has reached a sufficiently low level of decay heat allowing it to
15 be stored in alternate locations. Removal from service and retiring of these numerous electrical
16 and mechanical systems allowed cold and dark to be implemented and allowed staff reductions
17 that maintained these systems.

18 The primary cooling loop is installed on the refueling floor in the new fuel storage area
19 close to the new fuel hatch. The primary loop takes suction from the SFP in the up-ender pit
20 area, pumps the warm water through a plate and frame heat exchanger for cooling and then
21 returns it to the SFP through the existing spent fuel cooling return spargers.

22 The secondary cooling loop is installed outside the building between the SONGS 2&3
23 fuel handling buildings. SONGS 2&3 have their own dedicated secondary cooling system with a
24 cross-over tie between the two units for maintenance or redundancy if necessary. The secondary

1 loop supplies cooling water to the primary heat exchanger for cooling the SFP water. The
2 secondary loop is a closed system that uses chillers to cool its water.

3 There were significant cost savings by being able to retire the many original plant
4 systems required to support spent fuel pool cooling and therefore, the design and installation of
5 this independent SFPCS is considered reasonable and appropriate. The original design assumed
6 relocation of vital area and protected area boundaries by the Cold and Dark project. This plan
7 was deemed to be infeasible, was abandoned and resulted in cost savings. Due to this change,
8 there were no costs recorded for the following 2014 SONGS 2&3 DCE line items:

- 9 • LT-2-D-2.30 Implement Spent Fuel Pool Security Modifications
- 10 • LT-2-D-2.25 Design Spent Fuel Pool Security Modifications
- 11 • LT-2-D-2.23 Design Spent Fuel Pool Support System Modifications
- 12 • LT-2-D-2.28 Spent Fuel Pool System Modification Training

13 All spent fuel pool islanding modification costs were recorded in:

- 14 • LT-2-D-2.26 Install Spent Fuel Pool System Modifications – U2
- 15 • LT-2-D-2.27 Install Spent Fuel Pool System Modifications – U3

16 SDG&E monitored the progress on this project at the daily schedule meetings and
17 monthly project review meetings. SDG&E's recorded costs related to this distributed project
18 were \$1.2 million (SDG&E share, 2014\$) which is \$2.5 million (SDG&E share, 2014\$) less than
19 the 2014 SONGS 2&3 DCE forecast. The primary reason for the variance from the 2014
20 SONGS 2&3 DCE is that the spent fuel pool modifications were installed for less than the costs
21 estimated in the 2014 SONGS 2&3 DCE.²⁹

22 SDG&E has reviewed the documentation for the cost of this project and believes it
23 should be included as reasonable and appropriate.

²⁹ Ex. SCE-05 at 20-21.

1 **3. Transition Modifications – Phase 2 (C. Ladd)**

2 There are four distributed projects that are grouped together to form the Major Project
3 called “Transition Modifications – Phase 2”. The four projects are LOED Modification, Records
4 Backlog, Simplification and Streamlining, and Special Purpose Vehicle Support and are
5 discussed below.

6 **a. Records Reduction (C. Ladd)**

7 The records reduction project was to reduce records inventory to destroy records that
8 were no longer required to be retained due to plant decommissioning.

9 The records reduction project was a year-long project started in the second half of 2015
10 and completed in October 2016. SCE contracted Empyrean Services to implement the project to
11 reduce the records backlog. Empyrean managed and performed this work with 26 on-site
12 contractors. The scope was later expanded to move material out of the vaults at the Corporate
13 Records Center in Irwindale California, that contained 7,500 boxes of records. The justification
14 for eliminating records associated with SONGS 2&3 structures systems and components
15 (“SSCs”) that are removed from service under the NRC license, dismantled or demolished, is
16 that these SSCs will not in the future serve any SONGS 2&3 functions regulated by the NRC.
17 Reducing the records which no longer serve any SONGS 2&3 functions regulated by the NRC,
18 benefits SCE by reducing costs and as a result should be considered reasonable.

19 The general process used was to inventory all records and sort them based on their record
20 retention requirements. This included all media types of records, including strip chart recorder
21 paper, radiography film, hardcopy procedures, vendor manuals, aperture cards (drawings),
22 microfiche and magnetic media.

23 Records from all seven vaults and other storage location (Irwindale, CA) were scanned
24 and indexed into electronic media for long-term storage in qualified vaults, or destroyed if they

1 were determined to be non-regulatory records. This project was completed with no backlog
2 records remaining. The only records remaining on site are those currently being generated by
3 work groups, and the work groups are actively scanning and indexing them into electronic media
4 after they are generated. All hardcopies are being destroyed after they are scanned.

5 SDG&E obtained the status on this project during routine plan-of-the-day status meetings
6 and during the monthly project review meetings. SDG&E's recorded costs related to this
7 distributed project were \$0.4 million (SDG&E share, 2014\$) which is \$0.4 million (SDG&E
8 share, 2014\$) more than the 2014 DCE forecast. The primary reason for the variance from the
9 2014 SONGS 2&3 DCE is that this distributed project was not included in the 2014 SONGS
10 2&3 DCE because it was assumed that the work would be accomplished by utility staff.

11 However, SCE obtained a specialty vendor due to the lack of SCE staff resource to complete this
12 labor-intensive project.³⁰ This work was performed to prepare for the demolition of the building
13 where the vaults were located and as such should be considered reasonable and appropriate.

14 **b. Large Organism Exclusion Device Modification (C. Ladd)**

15 In 2016, LOEDs were installed in compliance with California regulations to provide a
16 barrier to exclude large fish and marine mammals from entering the primary and auxiliary
17 intakes.³¹ The LOED installation requirement became effective October 1, 2010 but the State
18 Water Resources Control Board ("SWRCB") provided extensions until April 30, 2014 while the

³⁰ Ex. SCE-05 at 22.

³¹ See California Statewide Water Quality Control Policy on the Use of Coastal and Estuarine Water for Power Plant Cooling, Appendix A (August 15, 2017), p. 7 at Section 2.C(1), which states: "...the owner or operator of an existing power plant with an offshore intake shall install large organism exclusion devices having a distance between exclusion bars of no greater than nine inches, or install other exclusion devices, deemed equivalent by the State Water Board." Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0047_app_x_a.pdf.

1 effects of reduced intake cooling water flow rates were being evaluated. Ultimately the SWRCB
2 would not credit the flow reduction as an acceptable mitigation to allow not installing the LOED.

3 SCE contracted Mason Construction Company to perform the full scope of work
4 associated with the LOEDs. This scope included, but was not limited to, management,
5 supervision, resource mobilization, project controls, administrative staff, engineering,
6 procurement, subcontract management, human resources, specialty technicians, inspections,
7 testing, qualified labor, materials, equipment, tools, supplies, oversight, ancillary facilities,
8 demobilization services, and any other item required to successfully complete the scope of work.

9 The LOEDs were installed for the SONGS 2&3 offshore intake structures in July and
10 August of 2016 using a barrier net made of Dyneema AS78³² rope with openings no larger than
11 9” square. A post-installation inspection was performed 90 days after installation to ensure the
12 attached hardware was secure and properly protected, the net was still installed per design, and
13 the LOEDs were performing in compliance with the SWRCB requirements. An additional
14 inspection was performed one year after installation that repeated the 90-day inspection items,
15 removed any debris and excessive marine growth and replaced anodes as needed. These two
16 inspections were used together to provide a baseline biofouling rate to set inspection periodicity
17 in the future.

18 SDG&E obtained the status on this project during the monthly project review meetings.
19 SDG&E’s recorded costs related to this distributed project was \$0.2 million (SDG&E share,
20 2014\$) which is \$0.2 million (SDG&E share, 2014\$) more than the 2014 SONGS 2&3 DCE
21 forecast. The primary reason for the variance from the DCE is that this distributed project was

³² Dyneema AS78 is a high strength, low stretch, abrasion resistant rope that is used in seawater applications.

1 not included in the 2014 SONGS 2&3 DCE. However, this work was performed because it was
2 a statutory requirement of the State of California and as such should be considered reasonable
3 and appropriate.³³

4 **c. Simplification & Streamlining (C. Ladd)**

5 The Simplification and Streamlining project was implemented to reduce dependency on
6 Corporate Information Technology (“IT”) through Service Level Agreements and therefore
7 reduce costs.

8 Many computer-based systems that relied on support from SCE Corporate IT were
9 replaced by systems with smaller scale systems based on using on-site servers not requiring off-
10 site support. This project significantly reduced or eliminated the use of SAP for Corrective
11 Action program and Work Management.

12 This plan was implemented by doing the following:

- 13 • Retirement and decommissioning of software, infrastructure and services that are or will
14 no longer be needed;
- 15 • Simplifying processes in order to significantly reduce the use of SAP;
- 16 • Changing the infrastructure replacement strategy from refresh to break-fix; and
- 17 • Planned implementation of an independent wireless infrastructure and hosted application
18 environment managed by a third-party vendor that replaces some of the existing SCE-IT
19 services.

20 SDG&E obtained the progress on this project at the daily schedule meetings, weekly
21 Participants meeting and monthly project review meetings. SDG&E’s recorded costs related to
22 this distributed project was \$0.2 million (SDG&E share, 2014\$) which is \$0.2 million (SDG&E
23 share, 2014\$) more than the 2014 SONGS 2&3 DCE forecast. The primary reason for the

³³ Ex. SCE-05 at 25.

1 variance from the DCE is that this distributed project was not included in the 2014 DCE. This
2 project reduced information systems costs and should be considered reasonable and
3 appropriate.³⁴

4 **d. Special Purpose Vehicle Support (S. Garcia)**

5 SCE, SDG&E, the City of Anaheim (“Anaheim”), and the City of Riverside
6 (“Riverside”), entered into a Decommissioning Agreement for the purpose of decommissioning
7 SONGS 2&3. The agreement designates SCE as the initial Decommissioning Agent. The
8 Participants requested and SCE agreed to evaluate various decommissioning governance
9 strategies that would include possibly identifying a successor decommissioning agent. The
10 Participant considered the transfer of Decommissioning Agent responsibility from SCE to a
11 Successor Decommissioning Agent, which could be a third-party or a special purpose company
12 jointly controlled by the Parties or by the Companies.

13 The Participants engaged PricewaterhouseCoopers (“PwC”) to analyze the feasibility and
14 benefit this governance structure. PwC concluded, and the Participants agreed, that they would
15 not proceed with implementation of the transfer of Decommissioning Agent authorities and
16 responsibilities to a special purpose company jointly controlled by the Participants or the
17 Companies that would act as a Successor Decommissioning Agent.

18 The PwC evaluation provided useful insights to SONGS decommissioning Participants
19 regarding effective project governance structure and oversight. It was reasonable for the SONGS
20 2&3 Participants to evaluate alternative business models for managing and overseeing SONGS
21 2&3 decommissioning. The study led SCE to establish intra-company service level agreements
22 (“SLAs”), that define the scope of services provided by SCE administrative & general (“A&G”)

³⁴ Ex. SCE-05 at 26.

1 support organizations and the associated costs, providing increased cost certainty and
 2 transparency for the decommissioning project. In addition, key decommissioning executives
 3 were added to form the SONGS leadership team.

4 SDG&E’s recorded costs related to this distributed project was \$0.1 million (SDG&E
 5 share, 2014\$) which is \$0.1 million (SDG&E share, 2014\$) more than the 2014 SONGS 2&3
 6 DCE forecast. The primary reason for the variance from the 2014 SONGS 2&3 DCE is that this
 7 distributed project was not included in the 2014 SONGS 2&3 DCE. Specifically, the 2014
 8 SONGS 2&3 DCE did not include costs to identify and recruit key decommissioning executives
 9 or to develop and implement the SLAs.³⁵ These SPV support costs should be considered
 10 reasonable and appropriate.

11 **D. Reasonableness Review of Undistributed Activities for SONGS 2&3 (S.**
 12 **Garcia)**

13 For the 2018 NDCTP review SDG&E requests that the Commission approve as
 14 reasonable \$55.3 million (SDG&E share, 2014\$) billed by SCE in 2016 and 2017 for SONGS
 15 2&3 undistributed activities. Table 5 shows SDG&E aggregated 2016 and 2017 recorded
 16 SONGS 2&3 undistributed activities costs compared to the 2014 SONGS 2&3 DCE.

17 **Table 5**
 18 **Comparison of SDG&E Undistributed Activities Costs to the DCE**
 19 **(20% level, 2014\$ in millions)**

	Category	DCE	Recorded	Variance
1	Labor-Staffing			
2	Utility Staff and Security Force	\$30.1	\$25.1	\$5.0
3	Decommissioning General Contractor	\$8.8	\$15.9	(\$7.1)
4	Subtotal	\$38.9	\$41.0	(\$2.1)
5	Non-Labor and Service Level Agreements	\$14.2	\$14.3	(\$0.1)
6	Total Undistributed Activities Costs	\$53.1	\$55.3	(\$2.2)

20
 35 Ex. SCE-05 at 27-28.

1 The major categories of activities costs are utility staff and security force, DGC staffing,
2 non-labor and service level agreements.

3 The undistributed utility and security force generally includes the required staffing to
4 provide the oversight, management and other activities necessary to support the
5 decommissioning project and the security force over the spent fuel pool. This category of cost
6 also includes short-term incentive compensation costs. SCE Witness Mr. Bosch in SCE-05
7 Chapter II provides additional detail regarding the work performed by utility staff and security
8 force in 2016-2017.³⁶

9 The undistributed DGC staff began arriving on site in early 2017 and commenced major
10 decommissioning activities. The principal activities undertaken by the DGC during the review
11 period included the transition of site management systems and programs. In 2017, the DGC
12 received milestone payments as each site management systems and programs was transitioned to
13 the DGC.

14 The undistributed activities costs non-labor categories includes fees, permits and leases,
15 plant operations, and other non-labor activities.

16 Lastly, the service level agreements cost category represents costs incurred from SCE
17 intra-company agreements between SCE and SONGS, to provide administrative and general
18 functions (e.g., Controller's, Audits, Risk Management, Law, etc.) required to support
19 decommissioning activities.

20 SCE witness Mr. Bosch offers testimony that provides this comparison at the 100% cost
21 level for which SDG&E's obligation is 20%.³⁷ Total recorded for 2016 and 2017 undistributed

³⁶ Ex. SCE-05 at 3-11.

³⁷ Ex. SCE-05 at Section V.

1 activities costs were \$282.9 million (100% level, 2014\$). The total 2014 SONGS 2&3 DCE
2 amount for undistributed activities for 2016 and 2017 was \$268.8 million (100% level, 2014\$).
3 The recorded costs were \$14.1 million (100 level, 2014\$) higher than the 2014 SONGS 2&3
4 DCE. Mr. Bosch identified that the primary variances to the 2014 SONGS 2&3 DCE for
5 undistributed activities costs were lower utility and security force staff costs, higher DGC staff
6 costs and lower non-labor costs and higher service level agreements costs. SDG&E has
7 reviewed Ex. SCE-05 Section 5 and agrees with SCE's conclusions.

8 In addition, as SDG&E receives SCE's monthly invoices, it compares the actual costs to
9 the annual budget as well as to the 2014 SONGS 2&3 DCE. SDG&E's 2016 recorded
10 decommissioning costs Advice Letter 2904-E contained a detail comparison of the actual costs to
11 the 2014 SONGS 2&3 DCE and reconciled the costs to SCE's similar Advice Letter filing for
12 2016 recorded decommissioning costs. SDG&E will also do the same comparison when it files
13 its 2017 recorded decommissioning costs Advice Letter in April 2018.

14 SDG&E concurs that SCE's SONGS 2&3 undistributed activities costs incurred during
15 2016 and 2017 were appropriate and necessary and that the variances with the 2014 SONGS
16 2&3 DCE are understandable.

17 **V. REASONABLENESS REVIEW OF DECOMMISSIONING ACTIVITIES AT**
18 **SONGS (A. LEVIN)**

19 During the review period for decommissioning costs billed by SCE, SDG&E recorded
20 \$0.0 million (SDG&E share, 2014\$) for completed distributed costs for SONGS 1, \$3.6
21 (SDG&E share, 2014\$) for completed distributed costs for SONGS 2&3, \$0.2 million (SDG&E
22 share, 2014\$) for undistributed activities costs for SONGS 1, and \$55.3 million (SDG&E share,
23 2014\$) for undistributed activities costs for SONGS 2&3. SDG&E is asking the Commission to
24 find these costs, as well as the activities underlying the costs, reasonable.

1 In addition to the review that SDG&E itself did of the distributed and undistributed
2 activities costs billed by SCE during the review period described above in Section IV, SDG&E
3 also retained me as a decommissioning industry expert to conduct a review of the reasonableness
4 of the underlying activities. Part of my role is to continually review and provide my expert
5 opinion on the reasonableness of decommissioning activities undertaken at SONGS in the context
6 of the broader nuclear decommissioning industry.³⁸ The purpose of my testimony here is to
7 provide my expert opinion regarding the decommissioning activities undertaken at SONGS
8 during the review period, and whether they were reasonable in light of nuclear decommissioning
9 industry best practices.

10 During my nearly 41-year career in the commercial nuclear industry, I have participated in
11 12 major decommissioning projects.³⁹ I have performed or participated in radiological
12 characterizations of reactor pressure vessels and internals, historical site assessments, design and
13 installation of dry cask storage technology, development of radiological release standards,
14 selection of and contract negotiations with decommissioning operations contractors, and general
15 oversight of decommissioning projects. While at Exelon Generation Company (“EGC”), my
16 responsibilities included the safe management of 12,600 metric tonnes of spent nuclear fuel, the
17 implementation and oversight of dry cask storage for spent nuclear fuel at eight EGC plant

³⁸ I have previously provided written and oral testimony to the Commission regarding nuclear decommissioning. *See* A.14-12-007; A.15-01-014/15-02-006 (currently pending).

³⁹ Specifically, Cintichem, Inc., Saxton Nuclear Power Plant, Trojan Nuclear Plant, Big Rock Point Plant, Dresden Nuclear Power Station Unit 1, Pathfinder Generating Plant, Shippingport Atomic Power Station, Rancho Seco Nuclear Generating Station, Crystal River Unit 3, Zion Nuclear Power Station, Vermont Yankee Nuclear Power Plant and San Onofre Nuclear Generating Station.

1 sites,⁴⁰ the development of strategic initiatives to meet EGC’s long-term decommissioning and
2 spent fuel management needs, and oversight of decommissioning cost estimates and EGC’s \$12
3 billion decommissioning liability.⁴¹

4 The decommissioning of SONGS continues to proceed in a manner I would expect based
5 upon my prior and current industry experience. In my professional opinion as discussed in
6 further detail below, I find the activities performed at SONGS during the review period to be
7 reasonable when compared to the conduct of operations at similar, contemporary industry
8 decommissioning projects.

9 **A. Benchmarking Decommissioning Activities at SONGS Against Recent**
10 **Industry Decommissioning Projects**

11 SCE has chosen to immediately dismantle and decontaminate the SONGS site. This
12 approach to decommissioning is known as “DECON.” The decommissioning process at SONGS
13 began in 2013. The activities commenced or continued during the review period at SONGS 2&3
14 are those typically expected early in the nuclear plant decommissioning process. Based upon the
15 information I have reviewed which includes SONGS monthly decommissioning status reports,
16 SCE testimony in this and prior proceedings, and NRC-docketed information on SONGS (all to
17 be validated during an upcoming April 2018 onsite visit), it is my opinion that SCE continues to
18 execute DECON decommissioning activities appropriately and in concert with best industry
19 practices. As discussed in detail below, founded upon my observations and experience, I agree

⁴⁰ Peach Bottom Atomic Power Station, Limerick Generating Station, Oyster Creek Nuclear Generating Station, Byron Station, Braidwood Station, LaSalle County Station, Quad Cities Nuclear Power Station and Dresden Nuclear Power Station.

⁴¹ In addition, in my roles as Technical Advisor for TLG Services, Inc. (decommissioning cost estimators) and Director, Spent Fuel and Decommissioning, for EGC, I had the opportunity to develop and review decommissioning cost estimates for more than 40 nuclear units. During my tenure at EGC, EGC owned and operated 17 operating and four retired nuclear units.

1 with the choice of work that has been completed at this stage of the project. I believe the
2 decommissioning activities at SONGS during the review period represent what I would expect
3 based upon my prior and current industry experience. I have recently personally observed
4 similar approaches at other plants transitioning into and performing early stages of their
5 decommissioning projects. It is my understanding that SCE personnel selected these activities
6 through industry benchmarking as being the best practices with respect to occupational and
7 public health and safety and minimizing total project cost.

8 To benchmark the SONGS decommissioning activities for the review period, I made
9 comparisons to contemporary activities underway at other recently retired commercial nuclear
10 plants in the U.S., specifically, Kewaunee Power Station (“Kewaunee”), Crystal River Unit 3
11 Nuclear Generating Plant (“CR3”), Vermont Yankee Nuclear Power Station (“VY”), and Zion
12 Nuclear Power Station (“Zion”). Kewaunee and CR3 were retired in 2013, and VY was retired
13 in 2014. Zion was retired in 1998, and after a short period of safe storage, moved into active
14 decommissioning in 2010.

15 Of the five (including SONGS) recently-retired nuclear plants, SONGS and Zion are
16 executing the DECON immediate dismantlement decommissioning scenario (with Zion waiting
17 12 years to start). Kewaunee and CR3 have chosen to enter a SAFSTOR⁴² decommissioning
18 scenario. In late 2016, Entergy Nuclear Vermont Yankee, LLC (“ENVY”), the current licensee
19 at VY, announced its intent to sell VY to NorthStar Group Services, Inc. (“NorthStar”).

⁴² The SAFSTOR decommissioning scenario is defined by the NRC as having placed the facility “in a safe, stable condition and maintained in that state (safe storage). The facility is decontaminated and dismantled at the end of the storage period to levels that permit license termination.” NRC, Regulatory Guide 1.202: STANDARD FORMAT AND CONTENT OF DECOMMISSIONING COST ESTIMATES FOR NUCLEAR POWER REACTORS, February 2005, at 3. Available at: <https://www.nrc.gov/docs/ML0131/ML013100099.pdf>.

1 NorthStar intends to move VY from SAFSTOR to DECON and begin major decommissioning
2 activities as early as 2019 after ENVY moves all spent nuclear fuel into dry storage on site. The
3 transaction requires approval by NRC and until that time, VY will remain in SAFSTOR.

4 Although Kewaunee and CR3 have chosen to enter SAFSTOR, both have begun certain
5 major decommissioning activities similar to those in flight at SONGS and VY, and already
6 completed at Zion.⁴³ For commercial nuclear plant decommissioning, both DECON and
7 SAFSTOR decommissioning have analogous initial activities that must be performed. These
8 activities include filing all required regulatory documents and studies, moving plant systems,
9 structures and components into “Cold and Dark” configurations, isolating the spent fuel pool
10 from the original plant cooling and filtration systems, obtaining a site historical assessment, and
11 moving spent fuel into dry storage.

12 It is my opinion the activities that have been performed at SONGS 2&3 during the review
13 period should be performed early in decommissioning and are the most cost-effective way to
14 manage decommissioning trust fund assets.

15 Much of the major decommissioning work has already been completed for SONGS 1,
16 and the balance of SONGS 1 decommissioning activities is now waiting for major
17 decommissioning work to begin at SONGS 2&3. I would expect there to be a delay in the work
18 at SONGS 1 to allow it to be completed most cost effectively, in parallel, with the activities at
19 SONGS 2&3. I would also expect certain small emergent activities to be performed as required,

⁴³ Since September 2010, decommissioning at Zion Station has made enormous progress. By the end of 2016, all spent nuclear fuel was placed into dry cask storage, and all major components – including the reactor vessels, their internals, the steam generators, the pressurizer and the reactor coolant pumps were removed and disposed of. By the end of 2017, much of the balance of plant systems has been removed and disposed of. The work outstanding at Zion is disposal of the remaining plant systems and buildings, followed by license termination and site restoration – currently estimated to occur in late 2018.

1 and certain undistributed activities costs to be incurred, as the SONGS 1 facility awaits the
2 restart of active decommissioning tasks.

3 **B. Distributed Major Projects for SONGS 1 Completed During 2016 and 2017**

4 During the 2018 NDCTP review period, there were no distributed Major Projects
5 completed at SONGS 1.

6 **C. Undistributed Activities Costs for SONGS 1 During 2016 and 2017**

7 Undistributed (Support and Overhead) costs incurred by SDG&E during the review
8 period for SONGS 1 included:

- 9 1. Insurance – annual premiums for nuclear liability and Worker’s Compensation
10 insurances.
- 11 2. NRC Fees – annual, periodic inspection and other fees assessed by NRC to
12 perform their statutory inspection and oversight functions of SONGS 1 activities.
- 13 3. Association Fees and Expenses – Nuclear Energy Institute (“NEI”) membership,
14 providing SCE access to valuable industry resources and decommissioning
15 lessons-learned information.
- 16 4. NEI Ground Water Monitoring Expenses – NRC-sanctioned industry initiative to
17 perform ground water monitoring, to minimize the opportunity for the
18 introduction of residual radioactivity release to ground water. This includes the
19 installation of numerous monitoring wells and regular sampling of ground water.
- 20 5. Site Lease and Easement Expenses – lease and easement payments to the
21 California State Lands Commission.
- 22 6. Contracted Services – maintenance of a retaining seawall, required to support a
23 safe occupational working environment, and removal of a portion of the SONGS
24 1 foundation in the switchyard area.

1 Based upon my review of these activities, some of which are site specific to SONGS
2 (e.g., Site Lease and Easement Expenses and Contracted Services), and others by comparison to
3 ongoing industry decommissioning projects, I find it reasonable these costs be incurred to
4 properly maintain a safe working environment and facilitate decommissioning of SONGS 1.
5 These activities generally represent those necessary to maintain a NRC-licensed nuclear power
6 plant, to meet all NRC license conditions, and to meet locally-imposed requirements of plant
7 ownership.

8 **D. Distributed Major Projects for SONGS 2&3 Completed During 2016 and**
9 **2017**

10 During the 2018 NDCTP review period, there were three distributed Major Projects
11 completed.

- 12 1. Decommissioning General Contractor Selection – activity to solicit and evaluate
13 bids from industry vendors to perform major decontamination and dismantlement
14 activities, and to choose and execute a contract with the winning team (AECOM
15 and EnergySolutions).
- 16 2. Spent Fuel Pool Islanding – activity to install standalone spent fuel pool cooling
17 and cleanup systems, isolating the spent fuel pool from the balance of plant
18 systems which relied upon circulation of Pacific Ocean water as the ultimate heat
19 sink to maintain cooling to the spent fuel pool.
- 20 3. Transition Modifications – includes installation of the Large Organism Exclusion
21 Device, Records Reduction, Simplification and Streamlining, and Special Purpose
22 Vehicle Support projects.

- 1 a. Large Organism Exclusion Device – installation of a barrier to prevent
2 large marine animals and mammals from entering the offshore plant
3 cooling water intake structures, which have been abandoned in place.
- 4 b. Records Reduction – implemented to reduce the amount of records to be
5 maintained, to the level required by NRC for decommissioning nuclear
6 plants.
- 7 c. Simplification and Streamlining – review and elimination of policies,
8 programs and procedures no longer required for a non-operating nuclear
9 power plant.
- 10 d. Special Purpose Vehicle Support – implementation support for the SCE-
11 commissioned study by PricewaterhouseCoopers to determine the
12 feasibility of creating a Successor Decommissioning Agent to oversee the
13 decommissioning activities at SONGS.

14 I have reviewed and found all three of the projects listed above, to be reasonable for SCE
15 to be undertaking (and completing) during the review period. Based upon my review of these
16 activities as described in SONGS monthly decommissioning status reports, SCE testimony in
17 this and prior proceedings, and NRC-docketed information on SONGS, some of which are site
18 specific to SONGS (e.g., LOED, SPV Support) and others by comparison to ongoing industry
19 decommissioning projects, I find it reasonable these costs be incurred to properly maintain a safe
20 working environment and facilitate decommissioning of SONGS 2&3.

21 **E. Undistributed Activities Costs for SONGS 2&3 During 2016 and 2017**

22 Undistributed (Support and Overhead) costs incurred by SDG&E during the review
23 period for SONGS 2&3 included:

- 1 1. Labor-Staffing – the SONGS utility staff and security force. As the NRC
2 licensee, SCE is required to maintain staff to provide governance and oversight of
3 all decommissioning operations, and to support and perform various functions to
4 ensure compliance with all federal, state and local regulations governing site
5 operations. A nuclear security force is required by NRC regulations to provide
6 physical protection for SONGS 2&3 spent nuclear fuel.
- 7 2. Decommissioning General Contractor Staff – the DGC staff began arriving on site
8 in early 2017 and commenced major decommissioning activities. The principal
9 activities undertaken by the DGC during the review period included the transition
10 of site management systems and programs, which will enable the DGC to support
11 and perform major decommissioning tasks.
- 12 3. Non-Labor – includes Fees, Permits and Leases, Plant Operations, and Other
13 Non-Labor Activities.
 - 14 a. Environmental Permits and Fees – includes costs incurred for federal and
15 state water and air pollution discharge permits, and hazardous and mixed
16 waste disposal.
 - 17 b. Association Fees and Expenses – includes NEI membership, Institute of
18 Nuclear Power Operations membership (now cancelled), and Nuclear
19 Oversight Board expenses. The NEI membership provides SCE access to
20 valuable industry resources and decommissioning lessons-learned
21 information. The Nuclear Oversight Board provides an independent, real-
22 time technical assessment of SCE activities.

- 1 c. Emergency Preparedness Fees – fees charged by the Federal Emergency
2 Management Agency and the California Office of Emergency Services to
3 support emergency planning at the federal and state levels.
- 4 d. NRC Fees – annual, periodic inspection and other fees assessed by NRC
5 to perform their statutory inspection and oversight functions of SONGS
6 2&3 activities.
- 7 e. Site Lease and Easement Costs – lease and easement payments to the
8 Department of the Navy and the California State Lands Commission.
- 9 f. Plant Operations – includes Contracted Services, Utility Staff Health
10 Physics Supplies, Decommissioning Advisor, Spent Fuel Maintenance,
11 DGC Health Physics Supplies, Security-Related Expenses, Dry Active
12 Waste Disposal, and Tools and Equipment. Contract Services includes
13 costs incurred for general plant maintenance, operations and engineering.
14 Utility Staff Health Physics Supplies are necessary for all utility
15 employees entering radiologically controlled areas of the site.
16 Decommissioning Advisor is the subject matter expert providing
17 objective, impartial insight and support to decommissioning activities.
18 Spent Fuel Maintenance includes spent fuel and security maintenance
19 costs incurred during the review period. DGC Health Physics Supplies are
20 necessary for all DGC employees entering radiologically controlled areas
21 of the site. Security-Related Expenses includes uniforms, weapons,
22 ammunition, other supplies and equipment, background investigations,
23 training costs and vendor support. Dry Active Waste Disposal are costs

1 incurred for disposing of low-level radioactive waste generated during
2 decommissioning activities. Tools and Equipment are costs incurred to
3 support decommissioning activities.

4 g. Other Non-Labor Activities – includes other miscellaneous support and
5 overhead costs for the Community Engagement Panel, Property Tax,
6 Insurance, Severance, Utilities, Energy, Legal, Information Technology
7 and Bank Fees and Interest.

8 4. Service Level Agreements – costs incurred from SCE intra-company agreements
9 between SCE and SONGS, to provide administrative and general functions (e.g.,
10 Controller’s, Audits, Risk Management, Law, etc.) required to support
11 decommissioning activities.

12 Based upon my review of these activities, as described in SCE monthly decommissioning
13 status reports, SCE testimony in this and prior proceedings, and NRC-docketed information on
14 SONGS, some of which are site specific to SONGS [e.g. Site Lease and Easement Costs, and
15 certain Other Non-Labor Activities], and others by comparison to ongoing industry
16 decommissioning projects, I find it reasonable these costs be incurred to properly maintain a safe
17 working environment and facilitate decommissioning of SONGS 2&3. These activities generally
18 represent those necessary to maintain a NRC-licensed nuclear power plant, to meet all NRC
19 license conditions, and to meet locally-imposed requirements of plant ownership.

20 **VI. SDG&E-ONLY COSTS INCURRED IN 2016 AND 2017 ARE REASONABLE (T.**
21 **DALU)**

22 In 2016 and 2017, SDG&E incurred SDG&E-only costs of \$7.4 million (100% share,
23 2014\$) specifically related to decommissioning SONGS 1 and 2&3. SDG&E was responsible

1 for and paid 100% of these costs and they were not billed to SDG&E by SCE nor were they
 2 shared by SCE.

3 These costs are organized into two high-level categories: labor and non-labor. Labor
 4 refers to SDG&E internal labor. Non-labor has several components including consulting, outside
 5 legal, property taxes, and other non-labor expenses. Shown below in Table 6 are SDG&E's
 6 actual internal costs for 2016 and 2017, in 2014\$, compared to SDG&E's forecasted internal
 7 costs in the 2014 SONGS 2&3 DCE in 2014\$,⁴⁴

8 **Table 6**
 9 **Comparison of SDG&E 2016 and 2017 Recorded SDG&E Only Costs to the DCE**
 10 **(100% SDG&E Share, 2014\$ in millions)**

	Category	DCE ⁴⁵	Recorded ⁴⁶	Variance
1	Labor⁴⁷	1.5	2.7	(1.3)
8				
9	Non-Labor			
10	Consultant and Outside Legal	0.7	0.2	0.5
11	Property Tax	0.8	4.3	(3.5)
12	Other Non-Labor Costs ⁴⁸	0.1	0.1	0.0
13	Non-Labor Subtotal	1.6	4.6	(3.1)
14				
15	Total SDG&E Only Costs	3.0	7.4	(4.3)

11 SDG&E respectfully requests that the Commission find that SDG&E's total for SDG&E-
 12 only SONGS decommissioning costs of \$7.4 million (100% share, 2014\$) for 2016 and 2017 are
 13 reasonable.
 14

⁴⁴ D. 16-04-019.

⁴⁵ These estimates include pensions and benefits, other labor loaders and purchasing overheads.

⁴⁶ These numbers include pensions and benefits, other labor loaders and purchasing overheads.

⁴⁷ These labor costs also include internal labor loaders, such as pension and benefits, performance incentives, payroll taxes, worker's compensation, vacation, sick and paid leave.

⁴⁸ Examples of "Other Non-Labor Costs" are employee expenses and lease payments.

1 **A. SDG&E Labor Costs**

2 In 2016 and 2017, SDG&E incurred labor costs of \$2.7 million (100% share, 2014\$) for
3 its role in overseeing activities at the plant and reviewing the costs. SDG&E’s SONGS Team
4 had a total of seven employees, including a Manager of Nuclear Decommissioning, responsible
5 for managing the SONGS Team to ensure that SDG&E’s oversight is effective, a Fiscal
6 Manager, dedicated to ensuring that billed and SDG&E internal costs are reviewed, reported and
7 in compliance with CPUC and NRC requirements, a Project Manager, responsible for the
8 oversight of the contracting of the DGC and the 2017 DCE, an on-site Principal Nuclear
9 Decommissioning Advisor and two financial/budget analysts dedicated to accounting and
10 reporting for SONGS decommissioning and other fiscal management activities required as a
11 minority owner of SONGS. In order to provide additional fiscal oversight, an associate level
12 business analyst was added to SDG&E’s SONGS Fiscal Management team (“Fiscal Team”) in
13 2016.

14 SDG&E’s Principal Nuclear Decommissioning Advisor reviewed day-to-day
15 decommissioning activities and progress, by attending daily plant meetings and weekly project
16 status updates and provided regular contact and interaction with SONGS decommissioning
17 management and personnel. In addition, the SDG&E on-site employee served as the alternate
18 representative on the SONGS Budget Committee in 2016 and 2017, providing the SDG&E
19 Budget Committee chair with valuable insight as to decommissioning operations on the ground
20 on a real-time basis. The Manager of Nuclear Decommissioning attended all executive level
21 meetings at SONGS and served as an alternate on the SONGS Executive Committee in 2016 and
22 2017.

23 In 2016 SDG&E added the SONGS Fiscal Manager to serve as the SDG&E SONGS
24 Budget Committee Representative, the alternate SONGS Fiscal Committee Representative, the

1 | SDG&E SONGS Audit Committee representative to oversee the PwC annual review of SONGS
2 | decommissioning costs and to be the SDG&E witness for SONGS fiscal matters in the NDCTP
3 | proceedings. This manager oversees the Fiscal Team, which included three financial/budget
4 | analysts (two senior level and one staff), responsible for reviewing invoices, tracking
5 | expenditures against SCE-internal budgets and the DCE estimates and performing monthly
6 | variance analysis used to enhance oversight of SONGS billed costs. In addition, the Fiscal Team
7 | was responsible for preparing and tracking all monthly NDT withdrawals and reporting them in
8 | compliance with NRC and CPUC requirements, supporting the SDG&E SONGS internal audit
9 | and preparing all information needed for SONGS decommissioning regulatory filings. In 2016
10 | and 2017, SDG&E received invoices for decommissioning work associated with the Spent Fuel
11 | Islanding project, the LOED Modification project, the Records Backlog Reduction project, the
12 | Simplification and Streamlining project, the implementation of the Special Purpose Vehicle
13 | Support Project and the selection of the DGC in 2016 and DGC milestone payments in 2017.
14 | These projects not only require a review and approval of billed costs, but also require analysis of
15 | the incurred cost compared to the DCE estimates, analysis and understanding of change orders ,
16 | and analysis of potential impacts to other projects or decommissioning work.

17 | Specific project work undertaken at SONGS in 2016 and 2017 that SDG&E monitored
18 | included detailed budget review, approval and reporting, work related to business governance of
19 | SDG&E's 20% ownership stake in SONGS, continued decommissioning planning activities,
20 | coordination and oversight of the California Environmental Quality Act ("CEQA") and National
21 | Environmental Protection Act ("NEPA") requirements and filings, DGC selection process
22 | criteria, work on the ISFSI expansion and Spent Fuel Islanding project and work related to the
23 | Transition Modification projects. These activities were in addition to other work that SDG&E

1 manages including, but not limited to, regulatory and legal reporting requirements, ad hoc
2 analysis of various proposals, and coordination with outside legal and nuclear experts as needed.

3 As shown in Table 6 above, SDG&E-only internal labor costs in 2016 and 2017 were
4 higher by \$1.3 million (100% share, 2014\$) than what was forecasted in the 2014 SONGS 2&3
5 DCE. The 2014 SONGS 2&3 DCE forecasted three employees for SDG&E internal costs.
6 However, in 2016 and 2017, the SONGS Team averaged 7 full time employees. Thus the actual
7 labor expense, which includes salaries and applicable overheads,⁴⁹ was higher than the 2014
8 SONGS 2&3 DCE estimate.

9 **B. SDG&E Non-Labor Costs**

10 **1. Consultant and Outside Legal Counsel**

11 To supplement its decommissioning oversight, SDG&E retained nuclear
12 decommissioning expert consultants, Mr. Levin and Mr. Carignan, to provide an independent
13 assessment of SCE's decommissioning activities and assist SDG&E with its review of the 2017
14 DCE. Because of Mr. Levin's and Mr. Carignan's extensive industry knowledge and previous
15 experience with decommissioning, SDG&E believes it is appropriate to use their services.
16 SDG&E retained outside legal counsel to provide legal advice and counsel for miscellaneous
17 decommissioning issues. SDG&E incurred a total of \$0.2 million (100% share, 2014\$) in costs
18 associated with consulting and outside counsel legal expenses.

19 The actual non-labor costs for consultants and outside legal compared to the 2014
20 SONGS 2&3 DCE forecasted non-labor cost of \$0.7 million (100% share, 2014\$) for consultants
21 and outside legal was lower by \$0.5 million (100% share, 2014\$); the variance is due to lower
22 costs for these services than anticipated.

⁴⁹ Labor costs also include internal labor overheads such as pension and benefits, performance incentives, payroll taxes, worker's compensation, vacation, sick and paid leave.

1 **2. Property Taxes**

2 SDG&E paid property taxes related to SONGS of \$4.3 million (100% share, 2014\$) in
3 2016 and 2017. SDG&E property taxes related to its ownership in SONGS are assessed by the
4 California State Board of Equalization and allocated to the various counties where SDG&E
5 property is located. Property taxes in 2016 and 2017 were higher by \$3.5 million (100% share,
6 2014\$) than what was forecasted in the 2014 SONGS 2&3 DCE. The variance between the
7 actual amounts paid and the 2014 SONGS 2&3 DCE estimate is the result of SDG&E
8 anticipating a reduction in the assessment of the SONGS property when SONGS changed from
9 an operating plant to a decommissioning plant site. However, the property was not reassessed as
10 low as anticipated by SCE and SDG&E during the DCE drafting process.

11 **3. Other Non-Labor**

12 In 2016 and 2017, SDG&E incurred non-labor of \$0.1 million (100% share, 2014\$) for
13 decommissioning and oversight activities. SDG&E’s Other Non-Labor costs consist of
14 employee expenses, such as training, travel related costs, miscellaneous office expenses and
15 lease/easement payments made to the Department of the Navy. Actual other non-labor costs in
16 2016 and 2017 were consistent with those forecasted in the 2014 SONGS 2&3 DCE estimate.

17 This concludes our prepared direct testimony.
18

1 **VII. STATEMENT OF QUALIFICATIONS**

2 **WITNESS QUALIFICATION OF CHARLES D. LADD**

3 My name is Charles D. Ladd and my business address is 5000 South Pacific Coast
4 Highway, San Clemente, California 92674. I am employed by SDG&E as the Principal Nuclear
5 Decommissioning Advisor, responsible for representing SDG&E's interests in the
6 decommissioning of SONGS by providing on-site oversight of the project. I attend on-site
7 routine project meetings related to schedule, status, cost, contract changes and technical issues
8 and make field observations of work in progress in the plant as SDG&E's subject matter expert.
9 I have been employed by SDG&E and in this position since January 2017.

10 I have over 30 years of experience with managing commercial nuclear power plants and
11 other nuclear facilities. I held several management positions at Florida Power and Light's
12 ("FPL") St. Lucie nuclear plant including Shift Manager and Operations Manager. St. Lucie is a
13 dual unit Combustion Engineering designed pressurized water reactor with a very similar design
14 to SONGS. After leaving FPL, I held the positions of licensing manager, and plant manager and
15 then worked as a nuclear industry consultant for major projects. As a consultant, I was a senior
16 project manager for large nuclear industry projects including steam generator replacements,
17 extended power uprates, Fukushima modifications, and the SONGS Cold and Dark project.

18 I hold a Bachelor of Science in Applied Science and Technology degree from Thomas
19 Edison State College. While at St. Lucie nuclear plant I maintained an active USNRC senior
20 reactor operator license. I maintain Project Management Professional certification with the
21 Project Management Institute.

22 I have not previously submitted testimony before the California Public Utilities
23 Commission.

ATTACHMENT A

**SONGS 2&3 Distributed Costs for Major Projects Covered in the 2015 NDCTP Review
but Billed to SDG&E in 2016 or 2017**

Major Project	DCE Line Item	Description	Recorded Costs in 2014\$ in Millions		
			2016	2017	Total
Legacy Radwaste Disposal	LT-2-D-2.16	Disposition of Legacy Wastes	\$ (0.1)	\$ 0.0	\$ (0.1)
Legacy Radwaste Disposal	LT-1-D-1.05	LLRW Resins & Legacy Waste (2013)	\$ (0.8)	\$ 0.0	\$ (0.8)
		Total	\$ (0.9)	\$ 0.0	\$ (0.9)

ATTACHMENT B

SONGS 2&3 Distributed Costs for Major Projects Covered in the 2018 NDCTP Review

Major Project	DCE Line Item	Description	Recorded Costs in 2014\$ in Millions				DCE Amount in 2014\$ in Millions			
			2013-2015	2016	2017	Total	2013-2015	2016	2017	Total
DGC RFP & Prep	LT-2-D-2.22	Select Decommissioning General Contractor	\$ 1.1	\$ 0.9	\$ 0.4	\$ 2.4	\$ 0.2	\$ -	\$ -	\$ 0.2
Transition Modifications - Phase 2	LT-2-D-LOED	Large Organism Exclusion Device Modification	\$ -	\$ 0.2	\$ 0.0	\$ 0.2	\$ -	\$ -	\$ -	\$ -
Transition Modifications - Phase 2	LT-3-D-RecB	Records Backlog	\$ -	\$ 0.4	\$ 0.0	\$ 0.4	\$ -	\$ -	\$ -	\$ -
Transition Modifications - Phase 2	LT-3-D-S&S	Simplification & Streamlining Project	\$ -	\$ 0.1	\$ 0.1	\$ 0.2	\$ -	\$ -	\$ -	\$ -
Transition Modifications - Phase 2	LT-D-SPV	Special Purpose Vehicle Support	\$ -	\$ 0.1	\$ 0.0	\$ 0.1	\$ -	\$ -	\$ -	\$ -
Spent Fuel Islanding	LT-2-D-2.30	Implement Spent Fuel Pool Security Mods	\$ -	\$ -	\$ -	\$ -	\$ 0.3	\$ -	\$ -	\$ 0.3
Spent Fuel Islanding	LT-2-D-2.25	Design Spent Fuel Security System Modificatio	\$ -	\$ -	\$ -	\$ -	\$ 0.1	\$ -	\$ -	\$ 0.1
Spent Fuel Islanding	LT-2-D-2.23	Design Spent Fuel Support System Modificatio	\$ -	\$ -	\$ -	\$ -	\$ 0.2	\$ -	\$ -	\$ 0.2
Spent Fuel Islanding	LT-2-D-2.26	Install Spent Fuel Pool System Modifications -	\$ 0.5	\$ 0.1	\$ 0.0	\$ 0.6	\$ 1.5	\$ -	\$ -	\$ 1.5
Spent Fuel Islanding	LT-2-D-2.27	Install Spent Fuel Pool System Modifications -	\$ 0.5	\$ 0.1	\$ 0.0	\$ 0.6	\$ 1.5	\$ -	\$ -	\$ 1.5
Spent Fuel Islanding	LT-2-D-2.28	Spent Fuel Pool System Modification Training	\$ -	\$ -	\$ -	\$ -	\$ 0.1	\$ -	\$ -	\$ 0.1
Total of Completed Major Projects			\$ 2.1	\$ 1.9	\$ 0.5	\$ 4.5	\$ 3.9	\$ -	\$ -	\$ 3.9