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Admin. Law Judge: M. Darling
Witness: J. Tolbert



DIVISION OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

Report on the
2012 Nuclear Decommissioning Costs
Triennial Proceeding for
Southern California Edison Company
and
San Diego Gas & Electric Company

San Francisco, California

September 20, 2013

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1 **Division of Ratepayer Advocates**
2 **Report on the 2012 Nuclear Decommissioning Costs Triennial**
3 **Proceeding re Southern California Edison Company and San Diego**
4 **Gas & Electric Company**

5 **I. Introduction**

6 This Exhibit presents the Division of Ratepayer Advocates' (DRA)
7 analyses and recommendations regarding the Joint Application of
8 Southern California Edison Company (SCE) and San Diego Gas & Electric
9 Company (SDG&E) regarding the 2012 Nuclear Decommissioning Cost
10 Triennial Proceeding (NDCTP), A. 12-12-013 as amended on April 5,
11 2013. In accordance with Public Utilities Code § 8322, DRA evaluates the
12 reasonableness and prudence of SCE's and SDG&E's proposed costs for
13 decommissioning the San Onofre Nuclear Generating Station Units
14 (SONGS) 1, 2, and 3, and SCE's proposed costs for the Palo Verde
15 Nuclear Generation Station Units 1, 2, and 3 (Palo Verde).¹

16 In this proceeding, SCE and SDG&E request that the Commission
17 approve as reasonable the following:

- 18 • Regarding SONGS 1, an amount of \$14.9 million (100% share,
19 2011 dollars) in costs for Phase 2 decommissioning work
20 completed between January 1, 2009 and December 31, 2012;
- 21 • Regarding SONGS 1, an estimated amount of \$182.3 million
22 (100% share, 2011 dollars) in costs for the remaining
23 decommissioning work;

¹ SCE also holds an interest in the Palo Verde Nuclear Generation Station Units 1, 2, and 3.

- 1 • Regarding SONGS 2 and 3, the forecasted amount of \$4.119
2 billion (100% share, in 2011\$) in decommissioning costs;
- 3 • Regarding Palo Verde, the forecasted decommissioning costs
4 of \$513.5 million (in 2010 dollars); and
- 5 • Regarding SONGS 2 and 3, SCE's proposed rate recovery of
6 increased contributions totaling \$39.7 million to the Nuclear
7 Decommissioning Trust Funds (NDTF) as part of the Nuclear
8 Decommissioning Cost Charge effective January 1, 2014.
- 9 • In supplemental testimony, SCE asked to stay the SONGS 2
10 & 3 proceeding, pending the completion of a site-specific
11 Decommissioning Plan.

12 Apart from SCE, SDG&E requests that the Commission approve as
13 reasonable and prudent its decommissioning costs and forecasts as
14 follows:

- 15 • SDG&E's updated estimate of its ratable share of the
16 decommissioning costs for SONGS 1, 2, and 3, respectively in
17 the amounts of \$36.46 million, \$400.625 million, and \$423.093
18 million;
- 19 • Rate recovery of SDG&E's annual contribution to the Nuclear
20 Decommissioning Trust Fund for SONGS 1, 2, and 3 in the
21 total amount of \$16.43 million, effective January 1, 2014;
- 22 • Amortized rate recovery of SDG&E's 2013 forecasted under-
23 collections using the Nuclear Decommissioning Adjustment
24 Mechanism (NDAM) for the twelve-month period beginning
25 January 1, 2014; and

- Authorizing SDG&E to file an Advice Letter within fifteen days after the effective date of the Commission’s order approving A.12-12-013, for adjusting SDG&E’s NDAM rates to reflect the annual contributions and revenue requirement approved by the Commission in this proceeding.

II. DRA Recommendations

DRA’s recommendations are set forth below.

A. Southern California Edison Company (SCE)

SONGS 1

- DRA agrees with the joint as-filed Application that no further ratepayer contribution needs to be made to the SONGS 1 NDTF.
- Regarding Phase 2 of SONGS 1 decommissioning, DRA is not able to confirm the reasonableness of the Applicants’ proposed \$14.9 million (100% share, 2011 dollars) in costs for decommissioning work completed between January 1, 2009 and December 31, 2012. SCE was unable to provide the appropriate historical records for the work.
- DRA does not contest the total SONGS 1 cost estimate of \$182.3 million for the remaining costs, which include a 25% contingency factor.
- DRA recommends that the disposition of the \$109 million forecast over-contribution to the NDTF for SONGS 1 be addressed in the Applicants next triennial proceeding.

1 **SONGS 2 & 3**

- 2 • DRA agrees with SCE’s request to stay a portion of the
3 proceeding to develop an accurate estimate of the
4 decommissioning costs regarding SONGS 2 and 3, which
5 operated until January 2012.² DRA agrees to retain the
6 current annual contribution for SONGS 2 and 3 at
7 approximately \$23 million.³
- 8 • Deny approval of either the Applicants’ proposed
9 decommissioning cost estimate that amounts to either
10 \$4,119.0 million (as-filed) or \$4,132.0 million (supplemental
11 100% share, 2011 dollars) for SONGS Units 2 and 3
12 consistent with their stay request, until a site-specific
13 decommissioning engineering and contingency study is
14 performed and completed for SONGS Units 2 and 3.
- 15 • Deny approval of either the Applicants’ proposed 2014
16 decommissioning contribution request increases to \$39 million
17 (as-filed) or \$42 million (in supplemental filing) for SONGS
18 Units 2 and 3 consistent with their stay request, until a site
19 specific engineering and contingency study is performed.

² Exhibit SCE-06, p. 2: “SCE would ask that the Commission stay its request for an increase from the currently authorized contribution amounts until such time as SCE has completed its site-specific decommissioning plan and provided that plan to the Commission.”

³ CPUC website: “Contributions to SONGS 2 and 3 trusts of \$23 million for SCE and \$8 million for SDG&E” (<http://www.cpuc.ca.gov/PUC/energy/nuclear.html>)

1 Current annual decommissioning contributions should remain
2 unchanged at approximately \$23 million.

- 3 • DRA recommends the Commission require the Applicants to
4 keep separate permanent accounting and tracking of
5 contingency, overages, and contractor costs for greater
6 transparency, accountability, and future forecasting studies.
7 DRA believes a permanent nuclear decommissioning data
8 retention (PNDDR) system should be required to store and
9 track costs over the project duration.

10 **Palo Verde**

- 11 • DRA agrees with SCE's proposal that no further ratepayer
12 contribution needs to be made to the Palo Verde NDTF.
- 13 • DRA recommends that the Commission apply to all
14 decommissioning costs proposed in this proceeding the
15 unadjusted contingency factors calculated by the Palo Verde
16 TLG Study ranging from 13.79% to 19.98% and authorized by
17 Arizona Public Service for Palo Verde. (This analysis is
18 consistent with D. 07-01-003, p. 19).
- 19 • DRA recommends that the Commission reject SCE's Palo
20 Verde decommissioning cost estimate of \$513 million (SCE
21 share, in 2010 dollars). DRA recommends reducing the
22 proposed \$513 million estimate by \$26.1 million (imputed
23 contingency cost) and approving instead \$487 million for Palo
24 Verde.

1 **B. San Diego Gas & Electric Company**

- 2 • DRA does not oppose the as-filed estimate of SDG&E's share
3 of the NDTF costs for SONGS Unit 1 in the amount of \$36.46
4 million.
- 5 • Given the proposed stay of the SONGS 2 and 3 proceeding,
6 pending the completion of a site-specific decommissioning
7 study, SDG&E's current decommissioning contribution should
8 remain unchanged at approximately \$8 million annually.
- 9

1 **III. Discussion of DRA Findings**

2 **A. SONGS Unit 1**

3 A Westinghouse-built first generation nuclear power plant, SONGS 1
4 operated for 25 years as a pressurized water reactor. Construction began
5 on the SONGS 1 reactor in August 1964. It was commissioned on January
6 1, 1968, and operated until November 30, 1992.

7 The SONGS 1 Decommissioning Trust Funds contain sufficient
8 money to complete the remaining decommissioning work. The Applicants
9 are proposing annual future contributions of zero (\$0) until the next
10 NDCTP cycle. This is partially due to the Commission authorizing the
11 special transfer of assets from the non-qualified to the qualified trust in
12 November 12, 2011, that was facilitated by changes in Federal and State
13 tax-reconciliation legislation. This will enable the Applicants to complete
14 the SONGS 1 decommissioning with no further costs to California
15 ratepayers.⁴

16 Phase 1 of the SONGS 1 decommissioning was completed in
17 December 2008. In this A.12-12-013, SCE and SDG&E are requesting
18 that the Commission approve as reasonable and prudent the \$14.9 million
19 (100% share, 2011 dollars) of SONGS 1 decommissioning work that was
20 completed between January 1, 2009 and December 31, 2012. DRA
21 cannot confirm the reasonableness of these expenditures because SCE
22 was unable to provide data supporting the calculation of its contingency

⁴ The SONGS 1 Decommissioning Cost Study; dated December 2012, is included in SCE's Workpapers Exhibit SCE-2 Part 1 of 2.

1 and does not have the ability to track these costs.

2 Phase 2 of the SONGS Unit 1 decommissioning began in January
3 2009 and is not expected to be completed until after the U.S. Department
4 of Energy removes all of the SONGS 1 spent fuel from the site. Phase 3 of
5 the SONGS 1 decommissioning process will begin after 2036.

6 DRA does not contest the Applicants' cost estimate of \$182.3 million
7 (100% share, 2011 dollars) for the remaining SONGS 1-related work, or
8 that this amount will satisfy the decommissioning needs for SONGS 1. The
9 Applicants estimate that the available amount in SCE's SONGS 1
10 Decommissioning Trust amount is \$195.1 million (2012 dollars) plus \$96.3
11 million (2012 dollars).⁵ According to the Applicants' testimonies, \$291.4
12 million (2012 dollars) is available, which amounts to an over-fund balance
13 in the amount of approximately \$109.1 million, as shown in Table 1 below.

14 **Table 1: SONGS 1 Decommissioning Trust Fund Over-collection as**
15 **of October 1, 2012**

SONGS 1 Decommissioning Trust Fund⁶	Forecast Cost 2011\$ (million)	Balance (2012 dollars) (million)	Over/ Under Balance
SCE NDTF	\$145.8	\$195.1	\$49.3
SDG&E NDTF	\$36.5	\$96.3	\$59.8
<u>Totals</u>	<u>\$182.3</u>	<u>\$291.4</u>	<u>\$109.1</u>

16 As of October 31, 2012 (in 2012 dollars) the \$195.1 million (SCE)

⁵ *Id.*

⁶ SCE-1, p.2, para. 1 & 2.

1 and \$96.3 million (SDG&E) stated above include qualified trust fund
2 liquidation amounts of \$195.1 million (SCE) and \$87.5 million (SDG&E);
3 and non-qualified trust fund liquidation amounts of \$0 million (SCE) and
4 \$8.8 million (SDG&E). Under current tax laws, SCE and SDG&E would
5 respectively realize tax benefits in the amounts of \$0 million and \$3.6
6 million (2012 dollars), associated with the expenditure of their non-qualified
7 trust funds.⁷ DRA recommends the Applicants submit the most current
8 updated available Market and Liquidated Values to calculate its NDTF
9 surplus balances for SONGS 1 in the next triennial review. DRA also
10 recommends that disposition of the remaining funds in the SONGS NDTF
11 be addressed in the Applicants next triennial proceeding.

12 The Applicants have provided their \$182.3 million (2011 dollars)
13 decommissioning cost estimate for SONGS 1's remaining
14 decommissioning work.⁸ Table 2 below provides a summary of the utilities'
15 forecast of SONGS 1 decommissioning costs.

16
17
18
19
20

⁷ SCE-1, p.3, fn. 2.

⁸ SCE-1, p.16-17 and Table IV-3.

1

Table 2: SONGS 1 Forecast Decommissioning Costs⁹

SONGS Unit 1	2012 Estimate (100% share, 2011\$, x1,000)
Phase II Costs	
Spent Nuclear Fuel Security & Maintenance	\$2.9
Offshore Conduit Disposition	12.0
Reactor Pressure Vessel Segmentation	39.1
Reactor Pressure Vessel Maintenance, Shipment & Disposal	49.8
Move SONGS 1 Spent Fuel from ISFSI to DOE Transporter	2.9
Phase III Costs	
ISFSI Demolition & Disposal	4.5
Misc. Structures Removal & Disposal	5.0
Foundation Removal & Waste Disposal, Backfill and Compaction	12.1
NRC License Termination & Final Site Restoration	54.0
Total	\$182.3

2 The estimates shown in Table 2 above removed the contingency
3 factors calculated by TLG's line-by-line study and reflect SCE's imputed
4 25% contingency factor. This makes the SCE estimate significantly
5 greater. DRA does not contest this forecast.

⁹ Exhibit SCE-1, see workpaper p. 57.

1 **B. Palo Verde Nuclear Generating Station**

2 SCE is also responsible for its 15.8% share of the decommissioning
3 costs associated with Palo Verde Nuclear Generating Station Units 1, 2,
4 and 3 (Palo Verde). The Arizona Public Service Company (APS) owns a
5 29.1% share and is also the operating agent.¹⁰

6 DRA finds that SCE has increased the decommissioning cost in the
7 TLG Study by \$26.1 million (in 2010 dollars) (approximately \$27.0 million
8 in 2011\$). The 2010 Palo Verde TLG Study applied contingency factors
9 ranging from 13.79% to 19.98% for various decommissioning activities.
10 SCE adjusted all of the contingency factors in the 2010 Palo Verde TLG
11 Study to 25%. This resulted in an upward cost adjustment of \$26.1 million
12 (in 2010 dollars, SCE share), which is reflected in SCE's 2012 Palo Verde
13 Decommissioning Cost Estimate¹¹.

14 DRA recommends that the estimated \$513.5 million Palo Verde
15 decommissioning cost estimate (SCE share, 2010 dollars) should be
16 adjusted downward. SCE's use of a 25% non-specific contingency factor
17 is unrelated to Palo Verde Units 1, 2, and 3. There is no agreement
18 between APS and the other partners on the decommissioning cost
19 obligation. DRA finds that the reasonable representation of SCE's share of
20 the costs is \$487.4 million (2010 dollars) as set forth in the TLG Study.

¹⁰ The remaining costs of decommissioning are shared by: the Salt River Project (17.49%), El Paso Electric (15.8%), New Mexico Public Service Company (10.2%), Southern California Public Power Authority (5.91%) and the Los Angeles Department of Water and Power (7%).

¹¹ Data Request SCE-DRA-2, Response to Q.1.

1 SCE's California customers' obligation to the Palo Verde
2 decommissioning is 15.8%. California ratepayers' proportional obligation
3 to the decommissioning of Palo Verde should not be increased by \$26.1
4 million without a specific study of the Palo Verde facility and its
5 environmental and other decommissioning needs. All owners of Palo
6 Verde must agree to shoulder their proportional share of the
7 decommissioning contingency costs. DRA recommends that the
8 Commission reject any overfunding or imputed increase of SCE's share for
9 the Palo Verde decommissioning costs, and any such overfunding should
10 be refunded to California ratepayers.¹²

11 **C. SONGS 2 and 3**

12 DRA agrees with SCE's decision to stay a portion of the proceeding
13 to develop an accurate estimate of the decommissioning costs regarding
14 SONGS 2 and 3, which operated until January 2012.¹³ DRA agrees to
15 retain the current annual contribution for SONGS 2 and 3 at approximately
16 \$23 million.

17 In A.12-12-013, SCE and SDG&E originally were seeking to
18 increase the amounts that each collects from ratepayers for the future
19 decommissioning of the nuclear facilities they own. These funds are to be
20 deposited into their respective Nuclear Decommissioning Trust Funds

¹² CPUC Resolution E-3057, dated November 25, 1987.

¹³ Exhibit SCE-06, p. 2: "SCE would ask that the Commission stay its request for an increase from the currently authorized contribution amounts until such time as SCE has completed its site-specific decommissioning plan and provided that plan to the Commission."

1 (NDTF). SCE, which is the operating agent, has a 76.30% share of the
2 decommissioning costs for SONGS 2 and 3. SDG&E has 20% share of
3 the decommissioning costs, with the remaining approximate 1.74% and
4 1.91% respectively belonging to the cities of Riverside and Anaheim¹⁴.

5 The Application was based on the updated SONGS 2 and 3
6 decommissioning cost estimates that assumed the Nuclear Regulatory
7 Commission (NRC) operating licenses will expire February 16 and
8 November 15, 2022.¹⁵ However, this is no longer the case.

9 SONGS 2 and 3 are located between Los Angeles and San Diego;
10 two of California's largest counties, respectively having populations of
11 about ten million and three million. Both counties are located in tectonically
12 active areas. In an abundance of caution during the pre-hearing
13 conference (PHC) held on March 27, 2013, ALJ Darling suggested
14 considering safety scenarios, such as "neither of the SONGS units would
15 be restarted [or]. . . only one of the units does not restart."¹⁶ The day the
16 interim scenario report was due, SCE announced plans to retire both
17 SONGS 2 and 3.

18 On June 7, 2013, when the announcement was made, Ted Craver,
19 Chairman and CEO of Edison International, parent company of SCE,
20 stated at a press conference:

¹⁴ Attachment I: Operating agreement for the cities of Riverside and Anaheim.

¹⁵ Exhibit SCE-2, p. 2.

¹⁶ March 27, 2013 PHC p. 34, line 24 to p. 35 line 3.

1 [W]e have concluded that the continuing uncertainty
2 about when or if SONGS might return to service was
3 not good for our customers, our investors, or the
4 need to plan for our region's long-term electricity
5 needs.¹⁷

6 SONGS 2 and 3 have been shut down respectively since January 9
7 and 31, 2012, after SCE detected a leak in a tube inside a replacement
8 steam generator manufactured by Mitsubishi Heavy Industries (MHI). The
9 leak of radioactive steam, which was detected on January 31, 2012, came
10 from a replacement steam generator system installed between 2010 and
11 2011 to extend the life of the plants.

12 On June 7, 2013, a certification of permanent cessation of power
13 operations for SONGS 2 and 3 was submitted to the NRC, and preliminary
14 planning for permanent shutdown and decommissioning was begun. The
15 residual radioactivity at SONGS 2 and 3 must be reduced to a level so as
16 to safely allow the release of the property and formal termination of the
17 Nuclear Regulatory Commission (NRC) operating licenses. The
18 Applicants have unloaded spent fuel from the core to the spent fuel pool
19 for final cooling. The remaining spent fuel was transferred into dry storage
20 in casks onsite. This may take five to eight years. The waiting period
21 begins after the nuclear material has cooled and radioactive decay is
22 sufficient to move and store it permanently. Ultimately, the plant will be
23 dismantled and the site returned to unrestricted use.

¹⁷ Edison's media release dated June 7, 2013 at Rosemead, California.

1 **IV. Contingency Funding and Calculations**

2 A decommissioning study for SONGS was conducted by ABZ for
3 SCE. Likewise, a decommissioning study for Palo Verde was conducted
4 by TLG for APS. Contingency factors should be calculated on a utility-by-
5 utility, unit-by-unit, and item-by-item basis. Because contingency factors
6 are largely unknown and speculative, they are often viewed as residual or
7 a measure of risk associated with each estimate. Although an overall
8 contingency factor is calculable, it should reflect the particular
9 circumstances of the plant and the items being measured. Contingency
10 estimates should not be used as a substitute for good forecasting methods
11 or to guard against cost overruns.

12 Contingency costs are generally non-symmetrical and seldom zero
13 (0). This is because final costs have typically been higher than preliminary
14 costs. A non-symmetric distribution is more realistic for contingency cost
15 estimates.¹⁸ A preliminary estimate is expected to be less accurate than
16 its detailed update and less accurate still than the final. In this way the
17 degree of confidence increases as accuracy improves. Imputed
18 contingency costs should only be used when there is no reliable study to
19 inform the contingency factors.

20 It is the U.S. Department of Energy's position that:

21 [C]ontingency costs are not to be used to avoid
22 making an accurate assessment of expected cost.
23 It is not DOE practice to set aside contingency for
24 major schedule changes or unknown design factors

¹⁸ Attachment III: Stanford Institute for Economic Policy Research, Feb 9, 2009, p. 6.

1 unanticipated regulatory standards or changes,
2 incomplete or additions to project scope definition,
3 force majeure situations, or congressional budget
4 cuts. Project and operations estimates will always
5 contain contingency. Estimators should be aware
6 that contingency is an integral part of the estimate...
7 The estimate reviewer is obligated to remove buried
8 contingency.^{19*}

9
10 Any contingency costs above the ABZ or TLG estimates should be
11 considered imputed or buried contingency, unnecessarily burdensome to
12 ratepayers, and should be removed.

13 In this proceeding, SCE seeks a determination of reasonableness
14 for \$14.9 million in SONGS 1 Phase 2 decommissioning costs.

15 DRA requested SCE to provide records of contingency accounts and
16 transfers during the last two decommissioning triennial cycles, which
17 include Phase 2 of SONGS 1 in this case. SCE responded:

18 SCE objects on the grounds the request is vague,
19 overbroad, ambiguous, unduly burdensome, and not
20 reasonably calculated to lead to production of
21 information relevant to issues before the
22 Commission in this proceeding.²⁰
23

¹⁹ Attachment II: DOE G 430.1-1 p. 11-1 through p.11-2.

* DRA believes that a Permanent Nuclear Decommissioning Data Retention (PNDDR) system should be put in place for variant, forecasting and research purposes.

²⁰ SCE response to DRA data request #8, Q.1a-d.

1 It is disconcerting that contingency expenditures in the past for
2 SONGS 1 Phase 1 or Phase 2 cannot be provided, have been discarded
3 or simply cannot be found.²¹ SCE responded in part:

4 During Phase 1 of SONGS 1 decommissioning,
5 when millions of dollars were spent each month to
6 perform major dismantling and disposal activities,
7 SCE used the U1DCON decommissioning database
8 with interfaces to the then-existing SCE mainframe
9 CARS cost accounting system. SONGS1
10 decommissioning contingency drawdowns that
11 incurred during the triennial procedural cycles for
12 Phase 1 are no longer available because the
13 interfaces to the U1DCOM decommissioning
14 database and report writer are no longer fully
15 functional and cannot be used to obtain the
16 requested information.²²

17
18 SCE was unable to provide data to support the reasonableness of its
19 expenditures for Phase 2 of SONGS I decommissioning costs.

20 According to the Bureau of Engineering Research,

21 [D]istribution of the contingency funds across the
22 contingent accounts is the recommended approach.
23 The distribution should reflect the breakdown of
24 risks that were used in initially establishing
25 contingency.²³
26

²¹ SCE response to DRA data request #8, Q.1.

²² SCE response to DRA data request #8, Q.1.

²³ Management of Project Risks and Uncertainties: Construction Industry Institute (CII),
Pub 6-8, p. 20.

1 DRA has no permanent nuclear decommissioning data retention
2 (PNDDR) system in place to inform the SONGS 2 and 3 decommissioning
3 processes. The additional data retained from past decommissioning
4 projects could improve the accuracy of the Applicants forecasts, variant
5 analysis and other research.

6 SCE did not do this nor can they account for the necessary
7 expenditure records. DRA concurs with the Construction Industry Institute
8 (CII) Cost/Schedule Controls Task Force's recommendation that the Monte
9 Carlo analysis method should be used in risk acceptance with
10 contingencies. Once itemized contingency factors are established by the
11 estimators (ABZ or TLG, for example) study, the total contingency can be
12 allocated to each critical cost element in proportion to the bottom line effect
13 of its maximum potential overrun weighted by the probability of its under-
14 running. This method allows the full use of the estimates from the study by
15 converting risk to probabilities. Monte Carlo simulations are often used to
16 model project schedules, where simulations aggregate estimates for worst-
17 case, best-case, and most likely durations for each task to determine
18 outcomes for the overall project.

19 DRA requested a copy of SCE's contingency modeling software,
20 pursuant to Public Utilities Code section 583. No model for calculating or
21 forecasting contingency items was provided for Palo Verde or SONGS 1,
22 2, and 3²⁴.

23

²⁴ SCE response to DRA data request #1 and #3.

1 Palo Verde Contingency

2 For Palo Verde, the Applicants are assuming an imputed
3 contingency level of 25% without support or justification. As stated above,
4 “contingency factors should be calculated on a utility-by-utility, unit-by-unit,
5 and item-by-item bases,” which would thereby ensure the integrity of the
6 estimate. A contingency factor need not be imputed for Palo Verde in this
7 case since a decommissioning study was performed by TLG.

8 The 25% factor stated above is inconsistent with the TLG Study of
9 risks at Palo Verde, which was commissioned by APS. The TLG Study
10 found that the contingency for Palo Verde ranged from 13.3% to 19.98%.

11 The Applicants have not shown that a 25% contingency factor is
12 justified as reasonable and would benefit ratepayers more than the
13 average percentage contingency that could be developed from TLG’s
14 study for Palo Verde. Therefore, the resulting \$513.5 million estimated
15 decommissioning cost exceeds the forecast of the plant operator APS.
16 DRA recommends \$487.3 million (2010 dollars) in decommissioning costs,
17 which is based on the TLG Study for Palo Verde.

18 SONGS 2 & 3 Contingency

19 According to ABZ’s study,²⁵ SONGS 2 and 3 have contingency
20 factors that range from 15% to 50% on an item-by-item basis. SCE has
21 failed to show the reasonableness of applying the ABZ Study to Palo
22 Verde, which is a facility not at all similar to SONGS 2 and 3. SCE’s use of

²⁵ SCE’s 2012 NDCTP Workpapers p. 14, para. 1.

1 the 25% contingency in place of TLG's estimate for Palo Verde is
2 unjustified and unreasonable. Furthermore, SCE has stated that with the
3 permanent shutdown of SONGS 2 and 3, SCE will conduct a site-specific
4 decommissioning study for SONGS 2 and 3.

5 The Applicants retained ABZ to assist in preparing the 2012
6 decommissioning cost study for SONGS 2 and 3 decommissioning. SCE
7 provided information and direction to ABZ for preparing the cost estimates.
8 ABZ used experience gained by SCE during the SONGS 1
9 decommissioning project, drawings, and inventory documents to estimate
10 such things as: concrete volumes, steel quantities, numbers and sizes of
11 components, and unit cost factor estimates. Once quantities and unit cost
12 factors were identified and costs estimated, they were multiplied by the
13 respective unit cost factors. The project management, administration,
14 equipment rental, and security costs during the critical path of the
15 decommissioning effort were included in the estimate. As in the 2009
16 proceeding, the Applicants used a contingency factor of 25% in the
17 calculation of the 2012 SONGS 2 and 3 decommissioning cost estimate.
18 However, the forecast and the contingency estimate are different, and with
19 no PNDDR system in place a variant analysis cannot be performed on the
20 SONGS 2 and 3 decommissioning project.

21 ABZ formulated its contingency risks as follows:

22 ABZ developed the baseline estimate using the
23 DECAS (Decommissioning Cost Analysis System)
24 computer program. DECAS is a "rule-based"
25 computer program designed to estimate the costs
26 and cash flows for decommissioning nuclear
27 facilities. DECAS utilizes the cost estimating
28 methodology contained in AIF/NESP-36,
29 "Guidelines for Producing Commercial Nuclear

1 Power Plant Decommissioning Cost Estimates”, and
2 the Department of Energy (DOE) Decommissioning
3 Handbook.²⁶

4 In its 2011 Report, ABZ updated the 2008 Decommissioning Study
5 and extensively discussed their methodology for estimating the cost of
6 decommissioning SONGS 2 and 3. The 2011 ABZ Report, used at
7 SONGS, estimated amounts for contingency individually for each line item,
8 with contingencies ranging from 15% to 50%.²⁷ The LLRW burial costs are
9 noted as 25%.²⁸

10 SCE’s ABZ Study only involved SONGS 1, 2 and 3. SCE has not
11 shown in their work papers that SONGS is analogous to Palo Verde that
12 the ABZ Study is directly applicable to the 15.8% ownership share SCE
13 has in Palo Verde. Palo Verde and SONGS differ materially and
14 substantially in scope, environment, management, and decommissioning
15 dates. In fact, Palo Verde has received an extension on its operating
16 license whereas SONGS has not.

17 SCE has not shown that Palo Verde’s risk profile at the time it will be
18 decommissioned will include the same 25% contingency risk profile as
19 SONGS 1, 2, and 3 does now. Further, SCE has failed to prove that “all”
20 the work at Palo Verde is at the same probability of risk of failure and falls
21 outside the scope of the TLG Study’s estimated range of 13.3% to 19.98%.

²⁶ Exhibit SCE-2 workpapers Part 1 of 2, p. 8, para. 2.

²⁷ Exhibit SCE-2 workpapers Part 1 of 2, p. 43 – 270.

²⁸ Exhibit SCE-2 workpapers Part 1 of 2, p.14 para. 1.

1 According to D.07-01-003, a 25% contingency factor is inappropriate
2 for all decommissioning work, as proposed by the Application. As the
3 Commission stated:

4 The adopted contingency [in the past] has been
5 declining from a high of 50% in 1987 (24 CPUC 2d
6 15,n.20) to 40% in 1995 (63 CPUC 2d 571, 613 –
7 614) and now the settling parties propose 35%; and
8 (2) because of the Barnwell closure, waste storage
9 costs are much more uncertain. . . . A declining
10 contingency, if properly determined, could reflect the
11 improved accuracy of the decommissioning
12 estimates based on more industry experience and
13 being closer to the need for decommissioning.²⁹
14

15 In this proceeding, SCE replaced the ABZ item-by-item developed
16 Palo Verde specific contingency factors with its own imputed 25%
17 contingency factor across-the-board. In SCE’s data request response to
18 DRA, SCE noted a \$26.1 million increase in the TLG study contingency
19 estimate caused by its use of the imputed contingency factor³⁰.

20 According to D. 07-01-003:

21 Edison, SDG&E, and PG&E shall serve testimony in
22 their next triennial review of nuclear
23 decommissioning trusts and related
24 decommissioning activities that demonstrates they
25 have made all reasonable efforts to conservatively
26 establish an appropriate contingency factor for

²⁹ D.07-01-003, p. 27.

³⁰ SCE-2 p. 19, Ins 1 – 10.

1 inclusion in the decommissioning revenue
2 requirements.³¹

3
4 Imputed contingency costs should only be used when there is no
5 reliable study to inform the contingency factors. In this case both ABZ and
6 TLG was contracted to provide their estimate to SCE. These studies best
7 demonstrate the reasonable effort to establish appropriate contingency
8 factors as required in D. 07-01-003.

9 **V. In Summary**

10 DRA recommends that given the permanent closure of SONGS 2
11 and 3, all contingency factors should be under review. DRA agrees with
12 SCE in its request to stay any estimate of cost and contributions until a
13 site-specific engineering and decommissioning study can be performed. A
14 site-specific decommissioning study should produce a more accurate
15 estimate and item-by-item contingency factors for SONGS Units 2 and 3.
16 Additionally, the 25% contingency factor used by SCE on SONGS 1 has
17 resulted in a \$109 million over collection in its NDTF. The Palo Verde
18 contingency factors should be developed independent of SONGS and in
19 collaboration with APS, the operating agent.

20 SCE has failed to comply with D.07-01-003 when calculating the
21 overall decommissioning contingency factor for SONGS 1, 2, and 3, or
22 Palo Verde. Consequently, the Commission should approve only \$487.5
23 million of SCE's SONGS decommissioning cost estimate as reasonable.
24 SCE's has applied a \$26.1 million increase to its 15.8% share of its

³¹ D.07-01-003, p. 33.

1 decommissioning cost for Palo Verde based on the 25% contingency
2 factor developed for SONGS 2 & 3. Palo Verde is operated independently
3 of SCE; with lower independent risk factors, and a much lower proportional
4 decommissioning obligation when compared to SONGS 2 and 3. The
5 operating agent should develop item-by-item contingency factors and
6 overall contingency factors in collaboration with its partners.

7 According to U.S. DOE, contingency estimates should not be used
8 as a substitute for good forecasting. The best method is to review
9 contingency estimates on a utility-by-utility, unit-by-unit, and item-by-item
10 basis. Contingencies are not used to cover price escalation, changes in
11 the business cycle, or inflation. According to U.S. DOE, contingencies
12 should be set aside for major unforeseen schedule changes; unknown
13 design factors; unanticipated regulatory standards or changes; incomplete
14 or additions to project scope definition; force majeure situations; or
15 congressional budget cuts.³² However, contingencies SHOULD NOT be
16 used in the place of accurate forecasting. Contingency costs should be
17 accounted for in the permanent records.

18 In cases involving the decommissioning of nuclear power plants,
19 permanent intact records must be kept for future forecasting, review,
20 planning, and research.

21 DRA supports SCE's request for a stay of these proceedings for
22 SONGS 2 and 3. However, the Commission should require SCE to track
23 all costs, including contingency expenditures separately, by account and
24 contractor so as to promote transparency and improve accuracy of

³² DOE Guidance and Contingency Definition, NESP, p. 3.

1 forecasting decommissioning costs. In this case because SCE failed to
2 respond to DRA's request for data, DRA cannot determine whether the
3 Applicants' proposed SONGS 1 decommissioning costs, including
4 contingency, are justified, fair and reasonable.
5

1 **QUALIFICATIONS AND PREPARED TESTIMONY OF JOEL TOLBERT**
2

3 Q.1 Please state your name and business address.

4 A.1 My name is Joel Tolbert. My business address is 505 Van Ness
5 Avenue, San Francisco, California, 94102.

6 Q.2 By whom are you employed and in what capacity?

7 A.2 I am employed by the California Public Utilities Commission as a
8 Retired Annuitant Regulatory Analyst in the Division of Ratepayer
9 Advocates (DRA) in the Energy Cost of Service and Natural Gas
10 Branch.

11 Q.3 Briefly describe your relevant educational background and work
12 experience.

13 A.3 I received a Bachelor of Arts Degree in Economics, a Bachelors of
14 Science Degree in Statistic and my Master in Public Administration
15 (Policy & Planning) from California State University East Bay. I have
16 completed graduate courses from Michigan State University and the
17 University of California Berkeley in advanced regulatory economics.
18 I hold a Doctorate of Philosophy from Columbia Commonwealth
19 University, WY. I have over 35 years of previous experience
20 working in at the Commission as a Regulatory Economist – including
21 the evaluation of Expenses, Rate base, Rate of Returns,
22 Deregulation, Revenue Requirement Forecasting, my regulatory
23 experience include working with all major electric, gas and water
24 utilities in California.

25 Q.4 What is the purpose of your testimony?

26 A.4 I am responsible for Exhibit DRA-02, Report on the 2012 Nuclear
27 Decommissioning Cost Triennial Proceeding for Southern California
28 Edison Company & San Diego Gas & Electric Company.

29 Q.5 Does that complete your prepared testimony?

30 A.5 Yes, it does.

- 1 Attachment I: Second Amended San Onofre Operating Agreement
- 2 between Southern California Edison Company, San Diego Gas & Electric
- 3 Company, the City of Anaheim and the City of Riverside
- 4

1 Attachment II: U.S. Department of Energy Definition of Contingency

2

- 1 Attachment III: Cost Contingency as the Standard Deviation of the Cost
- 2 Estimate for Cost Engineering