

Remsburg, Kristy

From: Capt.D <captddd@gmail.com>
Sent: Friday, June 21, 2013 1:55 PM
To: Capt D
Subject: Fwd: The \$742 Million Dollar Question + 2Reminders
Attachments: SCE Testimony To CPUC 2009.pdf; SCE Decommissioning Letter To NRC.pdf; The \$742 Million Question.docx

Happy Summer!
Here is the latest on San Onofre's debacle!

+06-15-13 Sent to decision makers from the DAB Safety Team:

The CPUC should be required to put the Decommissioning of San Onofre out for public bid, instead of just giving the multiple billion dollar job to SCE. Californians cannot afford a sole source bid when so many International Companies with nuclear expertise are looking for work. A public bidding process will save Californian ratepayers huge amounts of money, money which should not end up in SCE's shareholders pockets. This single project has the potential to jump start our economy, we cannot allow the CPUC to short circuit our due process by not putting this job out for bid!

Thanks again for your interest!
Best
Don aka CaptD

Application No.: 09-04-

Exhibit No.: SCE-2

Witnesses: Michael P. Short

Jorge A. Morales

***Testimony On The Nuclear Decommissioning Of
SONGS 2 & 3 And Palo Verde***

Before the

Public Utilities Commission of the State of California

Rosemead, California

April 3, 2009

Testimony On The Nuclear Decommissioning Of SONGS 2 & 3 And Palo Verde

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I.

POLICY

Until Commission Decision 06-11-025, Southern California Edison Company (SCE) owned a 75.05% interest in San Onofre Nuclear Generating Station Units 2 and 3 (SONGS 2 & 3), and was the operating agent. In that Decision, the Commission approved the transfer of the City of Anaheim's (Anaheim) 3.16% share of SONGS 2 & 3 to SCE. However, the Commission ruled that Anaheim would retain its decommissioning trust fund and a reduced portion of the decommissioning liability based on a pro-rata portion of the remaining life of SONGS 2 & 3.¹ Therefore, although SCE now owns a 78.21% interest in SONGS 2 & 3 and remains the operating agent, SCE owns a 76.30% share of the decommissioning liability for SONGS 2, and a 76.35% share of the decommissioning liability for SONGS 3. San Diego Gas & Electric Company's (SDG&E) 20% interest in the plant ownership and the decommissioning liability of SONGS 2 and 3 remains unchanged.²

SCE also owns a 15.8% interest in the Palo Verde Nuclear Generating Station Units 1, 2, and 3 (Palo Verde).³ Arizona Public Service Company (APS) owns a 29.10% interest in Palo Verde, and is the operating agent.

This testimony provides updated decommissioning cost estimates for SONGS 2 & 3, and for SCE's share of Palo Verde. After decommissioning is complete for SONGS 2 & 3 and Palo Verde, SCE and SDG&E (herein collectively referred to as "the Utilities") will return any remaining decommissioning trust balances to customers.⁴

¹ The City of Anaheim's remaining decommissioning liability for SONGS 2 & 3 through the remainder of the current NRC Licenses is estimated to be 1.91% for SONGS 2 and 1.86% for SONGS 3.

² The City of Riverside owns the remaining 1.79% interest in SONGS 2 & 3, including 1.79% of the decommissioning liability for SONGS 2 & 3.

³ The remaining non-operating owners are Salt River Project (17.49%), El Paso Electric Company (15.80%), Public Service Company of New Mexico (10.20%), the Southern California Public Power Authority (5.91%), and Los Angeles Department of Water and Power (5.70%).

⁴ CPUC Resolution E-3057, dated November 25, 1987, which adopted the Nuclear Decommissioning Master Trust Agreements.

1 The Utilities developed the updated SONGS 2 & 3 decommissioning cost estimate based on an
2 assumption that they will commence decommissioning SONGS 2 & 3 when the Nuclear Regulatory
3 Commission (NRC) operating licenses expire in 2022.⁵ Similarly, SCE and the other Palo Verde owners
4 intend to commence decommissioning the Palo Verde units soon after their NRC operating licenses
5 expire.⁶

6 SCE currently projects that the decommissioning of SONGS 2 & 3 and Palo Verde will not be
7 completed until at least 2053 and 2055, respectively. SCE attempted to accurately estimate the total cost
8 of decommissioning the nuclear units, given the uncertainties associated with work that is projected to
9 commence nearly 20 years in the future.

10 The Utilities request that the Commission find that the updated \$3,658.8 million (100% share,
11 2008\$) SONGS 2 & 3 Decommissioning Cost Estimate is reasonable. In addition, SCE requests that the
12 Commission find that the updated \$708.7 million (SCE share, 2007\$) Palo Verde Decommissioning
13 Cost Estimate is reasonable.

⁵ The NRC operating licenses for SONGS Units 2 and 3 are currently set to expire on February 16, 2022 and November 15, 2022, respectively.

⁶ The NRC operating licenses for Palo Verde Units 1, 2, and 3 are currently set to expire on June 1, 2025; March 24, 2026; and November 25, 2027; respectively.

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II.

DECOMMISSIONING COST ESTIMATES

A. Decommissioning Methodology

The Utilities project that they will perform SONGS 2 & 3 decommissioning activities in three phases. During Phase I, the Utilities will decontaminate, dismantle, and dispose of the units and the site common facilities.⁷ The Utilities will also continue to maintain the integrity and safety of the spent fuel while it remains on the SONGS site. The Utilities will maintain spent fuel in wet storage in spent fuel pools until it can be safely transferred to the SONGS 2 & 3 Independent Spent Fuel Storage Installation (ISFSI) or removed from the site by the U.S. Department of Energy (DOE). To safely store fuel in wet storage, the Utilities must maintain each plant system required for spent fuel pool operation until the fuel is removed. The Utilities will drain, de-energize, and secure all other plant systems. After the SONGS 2 & 3 spent fuel pools are empty, the Utilities will decommission the pools and their associated support structures and systems.

The Utilities assume that by the time the SONGS 2 & 3 fuel has cooled sufficiently to be removed from the spent fuel pools, the DOE will have removed enough SONGS 2 & 3 fuel from the SONGS site that it will not be necessary to further expand the ISFSI pads or to construct additional Advanced Horizontal Storage Modules (ASHM) to accommodate that fuel.⁸ During Phase II, the Utilities will monitor the ISFSI until the DOE removes the last spent fuel from the site, which is assumed to occur by 2051 based on studies developed from the DOE Acceptance Priority Ranking & Annual Capacity Report (DOE/RW-0567), dated July 2004.⁹

⁷ The Utilities do not own the site upon which the SONGS facility is located. Instead, they are authorized to use the site under several lease contracts and grants of easement from the U.S. Department of the Navy and the California State Lands Commission. To terminate these agreements, the Utilities are required to remove all improvements they installed or constructed on the site, except as agreed by the lessors/grantors, return the site to a condition satisfactory to the grantor, and return the site to the lessors/grantors.

⁸ If SONGS 2 and/or SONGS 3 permanently retire before 2022, the number of modules on site may be insufficient to accommodate the fuel from both SONGS 2 & 3 spent fuel pools. As a result, the Utilities will be required to use decommissioning funds to construct additional AHSM's to accommodate moving the SONGS 2 & 3 fuel in the pools at the time of permanent retirement into dry storage.

⁹ This document is accessible on the DOE website at http://www.ocrwm.doe.gov/wat/pdf/apr_acr.pdf.

1 During Phase III, the Utilities will dismantle and dispose of the ISFSI, all remaining site
2 common facilities, and the remaining structural foundations; terminate the NRC licenses; and complete
3 the final site restoration work.

4 SCE projects that APS will carry out Palo Verde decommissioning activities in similar phases,
5 with the last spent fuel being removed by the DOE from the Palo Verde site in 2053.

6 **B. Decommissioning Cost Estimating Methodology**

7 The SONGS 2 & 3 and Palo Verde decommissioning cost studies account for the unique features
8 of the SONGS 2 & 3 and Palo Verde facilities, including their nuclear steam supply systems, electric
9 power generation systems, and site buildings and structures, respectively. These studies are also
10 intended to account for any changes in decommissioning technology, regulation, and economics that
11 may have been identified during the most recent triennial period.¹⁰ The scopes of work required to
12 decommission SONGS 2 & 3 and Palo Verde are different. For example, as explained in Footnote 7
13 above, the Utilities do not own the site upon which the SONGS facility is located. The lease contracts
14 and grants of easement for the SONGS site require the Utilities to remove all improvements installed or
15 constructed on the site, including all of the SONGS underground foundations and the offshore cooling
16 water conduits, and remove all residual radioactivity from plant operations on the site. The Utilities
17 must also restore the SONGS premises to a condition satisfactory to the requirements of the lease
18 contracts and grants of easement. In contrast, the Palo Verde owners own the land upon which that
19 facility is located. Although the Palo Verde owners must remove all residual radioactivity from plant
20 operations on the site to satisfy the NRC license termination criteria, they are not required to remove all
21 improvements installed or constructed on the site.

22 As in 2004, SCE, as agent for the Utilities, retained ABZ, Inc. (ABZ),¹¹ to assist it in preparing
23 the 2009 site-specific decommissioning cost study and analysis for the SONGS 2 & 3

¹⁰ California Public Utilities Code §8326.

¹¹ ABZ, Inc., is an engineering and management consulting firm that has prepared decommissioning estimates and decontamination studies for more than 30 commercial nuclear power plants, including Calvert Cliffs 1&2, Duane Arnold, Nine Mile Point 1&2, and Vermont Yankee.

1 decommissioning. SCE provided information and direction to ABZ for estimating SONGS 2 & 3
2 decommissioning costs that included experience gained during the last nine years decommissioning
3 SONGS 1. The Utilities' 2009 SONGS 2 & 3 Decommissioning Cost Estimate contains a level of
4 detail similar to the 2004 SONGS 2 & 3 Decommissioning Cost Estimate, as updated in 2005, that was
5 adopted in the 2005 NDCTP.¹² The Utilities applied a contingency factor of 25% in the 2009 SONGS 2
6 & 3 Decommissioning Cost Estimate.¹³

7 APS, the Palo Verde operating agent, retained TLG Services, Inc. (TLG),¹⁴ on behalf of the Palo
8 Verde owners, to prepare a site-specific decommissioning cost study and analysis in 2007 for the
9 decommissioning of Palo Verde. APS provided direction to TLG consistent with the levels of detail
10 contained in previous Palo Verde decommissioning cost estimates. TLG used drawings and inventory
11 documents to estimate concrete volumes, steel quantities, and numbers and sizes of components, and
12 used a unit cost factor method of estimating (e.g., \$/cubic yard for concrete removal, \$/ton for steel
13 removal). After TLG identified item quantities and unit cost factors, they estimated the costs by
14 multiplying the item quantities by their respective unit cost factors. TLG based costs for project
15 management, administration, equipment rental, and security on a critical path schedule for the
16 decommissioning effort.

17 As discussed above, one of the major differences between the scopes of work in the updated
18 SONGS 2 & 3 and Palo Verde cost studies is that the Palo Verde cost study assumes that APS: (1) will
19 abandon structures or foundations deeper than three feet below grade in place, and (2) dispose of non-
20 contaminated demolition materials at the Palo Verde site. Therefore, APS avoids removal and disposal

¹² The Utilities filed their Joint Application and prepared testimony exhibits and workpapers associated with their 2005 SONGS 2 & 3 and Palo Verde Decommissioning Cost Estimates on November 10, 2005 (i.e., the 2005 NDCTP).

¹³ D.07-01-003, the CPUC decision for the 2005 NDCTP, the Commission ordered that "Edison, SDG&E, and PG&E shall serve testimony in their next triennial review of nuclear decommissioning trusts and related decommissioning activities that demonstrates that they have made all reasonable efforts to conservatively establish an appropriate contingency factor for inclusion in the decommissioning revenue requirements." (See Ordering Paragraph No. 8, p. 34.) The basis for the 25% contingency factor used in SCE's 2008 SONGS 2 & 3 Decommissioning Cost Estimate is provided in Section IV.A.3 of Exhibit SCE-1 in this proceeding.

¹⁴ TLG Services, Inc., has prepared estimates for many nuclear and fossil units, and has been involved in the planning, execution, and technical support of the Big Rock Point, Connecticut Yankee, Maine Yankee, Rancho Seco, Trojan, and Yankee Rowe decommissioning projects.

1 costs for materials deeper than three feet below grade, and disposal costs for non-contaminated materials
2 regardless of where on site they were located during plant operation. These avoided costs result in a
3 cost difference for Palo Verde decommissioning, as compared to SONGS 2 & 3, that SONGS 2 & 3
4 cannot achieve under current SONGS site lease and easement requirements.

5 SCE used the Palo Verde TLG study as a resource to develop SCE's 2009 Decommissioning
6 Cost Estimate for SCE's share of Palo Verde. While reviewing the Palo Verde TLG study, SCE
7 determined that some of the assumptions it was based on were inconsistent with SCE's experience in
8 decommissioning SONGS 1 or on SCE's preferred level of risk tolerance. Therefore, consistent with
9 SCE's prior decommissioning cost estimates for Palo Verde, SCE developed and applied what it
10 believes are appropriate adjustments to the TLG Study to develop its 2009 Palo Verde
11 Decommissioning Cost Estimate. In addition, SCE applied a 25% contingency for all costs included in
12 its 2009 Palo Verde Decommissioning Cost Estimate, including LLRW disposal costs.¹⁵

13 **C. Decommissioning Schedules**

14 The 2009 SONGS 2 & 3 and Palo Verde decommissioning cost estimates are based on an
15 assumption that decommissioning will commence promptly after the current NRC operating licenses
16 expire.¹⁶ The cost estimates also assume that the DOE will open its permanent repository in 2020,¹⁷ and
17 will remove the last spent fuel from the SONGS and Palo Verde sites by 2051 and 2053, respectively.
18 The estimates include costs for spent fuel monitoring until 2051 and 2053, respectively, in Phase II of
19 decommissioning, based on studies referenced in Section II.B above. The estimates forecast that Phase
20 III, including ISFSI demolition and removal, NRC license termination, and final site restoration will be

¹⁵ See Footnote 13, *supra*.

¹⁶ See Footnotes 5 and 6, *supra*.

¹⁷ Office of Civilian Radioactive Waste Management (OCRWM), Yucca Mountain Repository, About The Project, http://www.rw.doe.gov/ym_repository/about_project/index.shtml, accessed on October 1, 2008, states that under the Best Achievable Repository Construction Schedule, the DOE would begin receipt of spent nuclear fuel on March 31, 2017. However, OCRWM Director Ward Sproat has been widely quoted that the 2017 date will not be met. For example, see Mother Jones, "The Nuclear Option", May/June 2008 Issue, stated that, "The repository's most recent opening date was set for 2017. But that date "is clearly out the window," says Ward Sproat, who directs the Yucca project for the DOE. "Based on what I'm seeing right now it's a two- to three-year slip from that.""

1 completed at SONGS 2 & 3 and Palo Verde within two years after removal of all spent fuel from their
2 respective ISFSIs.

3 The 2009 SONGS 2 & 3 and Palo Verde decommissioning cost estimates assume the use of
4 current technologies under current regulations and at current cost levels.¹⁸ The cost estimates contain
5 reasonable estimates of the scope and cost of future work to set aside sufficient funds. These cost
6 estimates are not based on detailed planning studies because these decommissioning activities will not
7 be performed until many years in the future. The Utilities are not presently adopting the schedules or
8 sequences of activities embedded in the estimates for any purpose other than for cost estimation.

9 **D. Cost Estimates**

10 Based on the assumptions stated above, Tables II-1 and II-2 provide the cost estimates to
11 decommission SONGS 2 & 3 and Palo Verde:
12

Table II-1
2009 San Onofre Nuclear Generating Station Units 2 & 3
Decommissioning Cost Estimates

Line No.	San Onofre Nuclear Generating Station Units 2 & 3 ¹⁹	100% Share, 2008\$ x 1000
1.	Unit 2	\$1,790,907
2.	Unit 3	<u>\$1,867,898</u>
3.	TOTAL	\$3,658,805

¹⁸ See Footnote 10, *supra*.

¹⁹ See Section I of this testimony.

Table II-2
2009 Palo Verde Nuclear Generating Station
Decommissioning Cost Estimates

Line No.	Palo Verde Nuclear Generating Station	SCE Share, 2007\$ x 1000
1.	Unit 1	\$221,117
2.	Unit 2	\$233,362
3.	Unit 3	<u>\$254,212</u>
4.	TOTAL	\$708,691

E. Reconciliation to Previous Decommissioning Cost Estimates

1. SONGS 2 & 3 Cost Changes

The 2009 SONGS 2 & 3 Decommissioning Cost Estimate increased by \$124.5 million (100% share, 2008\$) over the 2005 SONGS 2 & 3 Decommissioning Cost Estimate adopted in the 2005 NDCTP. Table II-3 provides a reconciliation of the updated SONGS 2 & 3 decommissioning cost estimate to the 2005 SONGS 2 & 3 Decommissioning Cost Estimate adopted in the 2005 NDCTP.

Table II-3
Reconciliation of SCE's SONGS 2 & 3 Decommissioning Cost Estimates
2009 Cost Estimate vs. 2005 Cost Estimate

Line No.	San Onofre Nuclear Generating Station Units 2 & 3	100% Share, 2008\$ x 1000 ²⁰
1.	2009 SONGS 2 & 3 Decommissioning Cost Estimate	\$3,658,805
2.	2005 SONGS 2 & 3 Decommissioning Cost Estimate	<u>\$3,534,300</u>
3.	CHANGE	\$124,505
4.	<i>Reconciliation:</i>	
5.	Staffing and Separation Costs	\$394,966
6.	Dismantling and Disposal Costs	(\$323,249)
7.	Energy and Miscellaneous Costs	\$76,795
8.	Spent Fuel Dry Storage Costs	<u>(\$24,006)</u>
9.	CHANGE	\$124,505

²⁰ Totals may not add due to rounding.

1 a) Staffing and Separation Costs

2 Estimated staffing and separation costs for SONGS 2 & 3 decommissioning
3 increased by approximately \$395.0 million (100%, 2008\$). This cost increase is attributable to five
4 contributing factors.

5 First, the final design base threat regulations issued by the NRC subsequent to the
6 completion of the 2005 SONGS 2 & 3 Decommissioning Cost Estimate mandated a significant increase
7 in the security staffing requirements as long as licensed nuclear material (i.e., spent nuclear fuel)
8 remains onsite, both in wet storage in the spent fuel pools until 2034, and in dry storage thereafter until
9 the DOE removes the last of the SONGS 2 & 3 spent fuel from the ISFSI.²¹

10 Second, as described in Section II.E.1.d below, the DOE has announced that its
11 projected start date for removing spent fuel from U.S. commercial nuclear power plants will be delayed
12 from 2015 until at least 2020. SCE now projects that the DOE will not remove the last SONGS 2&3
13 spent fuel from the ISFSI until 2051, an increase of approximately six years above the previous estimate.
14 Therefore, the increased security staffing levels for dry spent fuel storage will be required for an
15 additional six years.

16 Third, utility labor rates and craft labor rates from the San Diego union hall have
17 increased at a rate slightly higher than the Consumer Price Index since the previous SONGS 2 & 3
18 decommissioning cost estimate was developed.

19 Fourth, the application of a 25% contingency factor to the entire 2009 SONGS 2
20 & 3 Decommissioning Cost Estimate, as explained in Section II.B above, contributed to increased
21 staffing costs.

22 Finally, the increased labor rates flowed through to higher projected staff
23 separation costs after their jobs come to an end after the units permanently cease operations. However,
24 the increase in staffing and separation costs is almost completely offset by a decrease in dismantling and
25 disposal costs.

²¹ Details of the orders are “Safeguards Information” and SCE is not allowed to disclose this information to non-Safeguards cleared personnel under 10 C.F.R. 73.21, “Protection of Safeguards Information: Performance Requirements.”

1 b) Dismantling and Disposal Costs

2 Three factors combined to yield a substantial change in the estimated dismantling
3 and disposal costs. First, the projected volume of material from SONGS 2 & 3 that will require disposal
4 as Class A Low Level Radioactive Waste (LLRW) increased from 921,122 cubic feet to 1,508,800 cubic
5 feet. This 64% increase in the volume of Class A LLRW was projected based on lessons learned by the
6 Utilities from the SONGS 1 decommissioning project. Second, the estimated disposal fees for Class A,
7 including Southwestern LLRW Compact expert fees and Utah state taxes, as projected in the Joint
8 LLRW Burial Cost Study prepared for SCE and PG&E were substantially lower than the aggregate
9 LLRW burial rate that was applied in the previous SONGS 2 & 3 decommissioning cost estimate.²²
10 Third, given the difficulty in accurately projecting LLRW volumes and the uncertainties inherent in
11 projecting LLRW burial rates several decades into the future, the Utilities applied contingency to LLRW
12 disposal costs.

13 Notwithstanding the increased projected LLRW volumes and the application of
14 contingency, the LLRW burial rates identified in the Joint LLRW Burial Cost Study were so much
15 lower than the composite LLRW burial rate that was applied in the 2005 SONGS 2 & 3
16 Decommissioning Cost Estimate that a net decrease of \$323.2 million (100% share, 2008\$) in LLRW
17 disposal cost levels resulted.

18 c) Energy and Miscellaneous Costs

19 The projected costs for energy, insurance, equipment, tools, lease payments,
20 supplies, and corporate overheads increased by a combined total of \$76.8 million (100% share, 2008\$)
21 over the 2005 SONGS 2 & 3 Decommissioning Cost Estimate. Approximately \$52 million of this
22 increase was due to higher energy costs compared with the energy costs that were used in the previous
23 cost estimate.

²² In D.07-01-003, the CPUC decision for the 2005 NDCTP, the Commission ordered that “Edison, SDG&E, and PG&E shall serve testimony in their next triennial review of nuclear decommissioning trusts and related decommissioning activities that demonstrates that they have made all reasonable efforts to conservatively forecast the cost of low level radioactive waste storage.” (See Ordering Paragraph No. 7, p. 34.) SCE provided testimony regarding the development and results of the Joint LLRW Burial Cost Study in Exhibit SCE-1, Section IV.A.2 for this proceeding. The Joint LLRW Burial Cost Study is provided as a Workpaper to Exhibit SCE-1.

1 d) Spent Fuel Dry Storage Costs

2 In SCE's 2005 SONGS 2 & 3 Decommissioning Cost Estimate, which was
3 adopted by the Commission in D.07-01-003, SCE projected that the DOE would commence accepting
4 fuel from domestic commercial nuclear power plants in 2015, based on the Acceptance Priority Ranking
5 & Annual Capacity Report (DOE/RW-0567) published by the DOE in July 2004. Subsequently, the
6 DOE publicly declared that it does not expect to open its permanent repository until 2020.²³

7 SCE also changed its assumptions regarding the sequence in which the DOE
8 would take the SONGS fuel. In prior decommissioning cost estimates, SCE assumed that the DOE,
9 beginning in 2015, would have taken the (1) SONGS 1 fuel from the SONGS ISFSI, (2) SONGS 1 fuel
10 stored at the General Electric facility at Morris, Illinois, and (3) SONGS 2 & 3 fuel from the ISFSI.
11 Under the former assumptions, SONGS 2 & 3 decommissioning funds would have been used to provide
12 65 canisters for fuel and 5 canisters for GTCC waste, per unit, to empty the spent fuel pools after final
13 core discharges. Under the updated assumptions, SCE assumes that the DOE, beginning in 2020, will
14 take (1) SONGS 1 fuel from the General Electric facility at Morris, Illinois; (2) SONGS 2 & 3 fuel
15 directly from the SONGS 2 & 3 spent fuel pools, placing it in their own canisters paid for from the
16 federal Nuclear Waste Fund; (3) SONGS 1 fuel from the ISFSI; and (4) SONGS 2 & 3 fuel from the
17 ISFSI. Under these assumptions, SONGS 2 & 3 decommissioning funds would be used to provide only
18 19 canisters for fuel and 5 canisters for GTCC waste, per unit, to transfer the SONGS 2 & 3 fuel that the
19 DOE would not be able to remove from the pools during the post-operational 12-year cooling period
20 (2023-2034) to the ISFSI. The decrease in the number of AHSMs and canisters that will be required
21 results in a decrease of \$24.0 million (100% share, 2008\$).

22 **2. Palo Verde Cost Changes**

23 SCE's 2009 Palo Verde Decommissioning Cost Estimate decreased by \$52.295 million
24 (SCE Share, 2007\$), or approximately 7%, below SCE's 2004 Palo Verde Decommissioning Cost
25 Estimate adopted in the 2005 NDCTP. Table II-4 provides a comparison of SCE's updated Palo Verde

²³ See <http://www.nei.org/keyissues/nuclearwastedisposal/yuccamountain/>.

1 decommissioning cost estimate to SCE's 2004 Palo Verde Decommissioning Cost Estimate adopted in
 2 the 2005 NDCTP.

Table II-4
Comparison of SCE's Palo Verde Decommissioning Cost Estimates
2009 Cost Estimate vs. 2004 Cost Estimate

Line No.	Palo Verde Nuclear Generating Station	SCE Share, 2007\$ x 1000
1.	2008 Palo Verde Decommissioning Cost Estimate	\$708,691
2.	2005 Palo Verde Decommissioning Cost Estimate	\$760,986
3.	CHANGE	(\$52,295)
4.	<i>SCE Adjustments:</i>	
5.	Dismantling and Disposal Costs	(\$74,805)
6.	Miscellaneous Costs	(\$243)
7.	Contingency	\$22,753
8.	CHANGE	(\$52,295)

4 a) Dismantling and Disposal Costs

5 In SCE's 2004 Palo Verde Decommissioning Cost Estimate, SCE adjusted the
 6 projected LLRW volumes upward to the levels first projected in SCE's 1998 Palo Verde
 7 Decommissioning Cost Estimate. In light of SCE's experience with SONGS 1 decommissioning,
 8 however, SCE further increased the projected volume by the same factor that its projected volumes of
 9 LLRW from SONGS 2 & 3 increased in the 2009 SONGS 2&3 Decommissioning Cost Estimate.

10 In addition, SCE noted that the TLG Palo Verde Study assumed that only a small
 11 quantity of the volume of the six Palo Verde Stored Steam Generators (i.e., 1,238 cubic feet per steam
 12 generator) would require disposal as LLRW. Recognizing that the SONGS 1 steam generators had to be
 13 disposed of in their entirety and that the SONGS 2 & 3 steam generators are projected to require
 14 disposal in their entirety, after consultation with industry experts, and after considering SCE's level of
 15 risk tolerance, SCE determined that a more conservative and appropriate approach would be to assume
 16 that the Palo Verde Stored Steam Generators will also require disposal in their entirety as LLRW.
 17 Therefore, SCE added the remaining volumes of the Palo Verde Stored Steam Generators to the quantity
 18 of materials that will require disposal as LLRW. Moreover, because Decontamination, Removal,

1 Packaging, and Shipping costs will also be incurred proportionate to the entire volumes of the Palo
2 Verde Stored Steam Generators, SCE also adjusted those projected cost elements upward on a
3 proportionate basis.

4 Notwithstanding the adjustments described above that increased the projected
5 volume of Palo Verde materials that will require handling and disposal as Bulk Class A LLRW,²⁴ the
6 LLRW burial rates that were applied in the Palo Verde TLG Study, which were comparable to the rates
7 in the Joint LLRW Burial Cost Study that was developed by SCE and PG&E, were so much lower than
8 the composite LLRW burial rate used in SCE's 2004 Palo Verde Decommissioning Cost Estimate that
9 the aggregate effect of all of these adjustments was to decrease SCE's updated cost estimate for Palo
10 Verde dismantling and disposal costs by \$74.8 million (2007\$, SCE share) below the LLRW disposal
11 costs that were included in that cost estimate.

12 b) Miscellaneous Costs

13 Changes to the numerous other cost categories in SCE's 2005 Palo Verde
14 Decommissioning Cost Estimate resulted in net decrease of approximately \$0.2 million (2007\$, SCE
15 share) of the total cost estimate as compared to SCE's previous Palo Verde decommissioning cost
16 estimate.

17 A portion of this cost change was due to changed assumptions regarding onsite
18 dry storage of the Palo Verde spent fuel. SCE's 2005 Palo Verde Decommissioning Cost Estimate was
19 based on an assumption that the Palo Verde decommissioning project would need to provide more dry
20 spent fuel storage capacity than was included in the 2004 Palo Verde TLG Study to empty the Palo
21 Verde spent fuel pools after permanent cessation of operations. Based on the revised spent fuel
22 management assumptions contained in the 2007 Palo Verde TLG Study, SCE eliminated that adjustment
23 in this cost estimate.

24 However, it was necessary for SCE to develop a new adjustment to provide for
25 onsite monitoring of the Palo Verde spent fuel until 2053, when SCE projects that the DOE will remove

²⁴ See Footnote 17, *supra*.

1 the last spent fuel from the Palo Verde ISFSI. SCE made this adjustment because SCE wants to ensure
2 it retains sufficient funding for the expected spent fuel monitoring period in the event that Palo Verde's
3 assumption that the DOE will take over the Site Specific Part 72 License and be responsible for
4 continued operation and maintenance of the Palo Verde ISFSI in 2038 does not come to fruition.²⁵ This
5 new adjustment almost completely offsets the cost saving arising from the reduced amount of spent fuel
6 dry storage capacity that will be required.²⁶

7 c) Contingency

8 In SCE's 2005 Palo Verde Decommissioning Cost Estimate, SCE applied a 35%
9 contingency factor to all Palo Verde decommissioning costs except LLRW disposal costs, to which no
10 contingency factor was applied. Subsequently, in the Settlement Agreement adopted in that proceeding,
11 SCE agreed to apply a reduced contingency factor of 25% to all Palo Verde decommissioning costs
12 except LLRW disposal. The basis for the reduced Palo Verde contingency factor was that SCE had
13 incorporated lessons learned from the SONGS 1 decommissioning project into its cost estimates for its
14 other nuclear units.

15 SCE has applied a 25% Contingency Factor to all costs included in its 2009 Palo
16 Verde decommissioning cost estimate, including LLRW disposal costs. As explained in Exhibit SCE-1,
17 a contingency factor of 25% is appropriate for industrial projects that are in a preliminary state of
18 development, scheduled several years in the future, prior to the development of detailed engineering
19 studies or work plans, or the issuance of contracts to perform work.²⁷ This resulted in an upward
20 adjustment of \$22.8 million (2007\$, SCE share) above SCE's contingency adjustment in SCE's 2004
21 Palo Verde Decommissioning Cost Estimate that was adopted in the 2005 NDCTP.

²⁵ See 2007 TLG Decommissioning Cost Study for the Palo Verde Nuclear Generating Station, dated March 2008, Section 2, Page 8 of 9.

²⁶ See Workpapers for Exhibit SCE-2.

²⁷ See Footnote 13, *supra*.

Appendix A

Witness Qualifications

1 Q. Was this material prepared by you or under your supervision?

2 A. Yes, it was.

3 Q. Insofar as this material is factual in nature, do you believe it to be correct?

4 A. Yes, I do.

5 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best
6 judgment?

7 A. Yes, it does.

8 Q. Does this conclude your qualifications and prepared testimony?

9 A. Yes, it does.

1 Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best
2 judgment?

3 A. Yes, it does.

4 Q. Does this conclude your qualifications and prepared testimony?

5 A. Yes, it does.

DESIGNATE AS ORIGINAL



Douglas R. Bauder
Site Vice President & Station Manager
San Onofre Nuclear Generating Station

10 CFR 72.30

December 14, 2012

ATTN: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Subject: **Docket No. 50-206, 50-361, 50-362 and 72-41**
10 CFR 72.30 ISFSI Decommissioning Funding Plan
San Onofre Nuclear Generating Station Units 1, 2 & 3

Dear Sir or Madam:

As required by 10 CFR 72.30, this letter provides, for review and approval, the decommissioning funding plan for the San Onofre Nuclear Generating Station Units 1, 2 and 3 shares of the SONGS Independent Spent Fuel Storage Installation. The required information is provided for Southern California Edison, San Diego Gas & Electric, the City of Anaheim, and the City of Riverside.

There are no new commitments contained in this letter or its enclosure.

If you have any questions regarding this matter, please contact Linda Conklin, Licensing Manager, at 949-368-9443.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 12/14/2012

By: 
Douglas R. Bauder
Site Vice President and Station Manager

P.O. Box 128
San Clemente, CA 92672
(949) 368-9275 PAX 89275
Fax: (949) 368-9881
Doug.Bauder@sce.com

NIMSS 26
NIMSS

**Enclosure: San Onofre Nuclear Generating Station ISFSI Decommissioning Funding
Status Plan**

cc: E. E. Collins, Regional Administrator, NRC Region IV
J. E. Whitten, NRC Region IV, San Onofre Unit 1
J. C. Shepherd, NRC Project Manager, San Onofre Unit 1
R. Hall, NRC Project Manager, San Onofre Units 2 and 3
B. Benney, NRC Project Manager, San Onofre Units 2 and 3
G. G. Warnick, NRC Senior Resident Inspector, San Onofre Units 2 & 3
W. C. Allen, NRC Project Manager, San Onofre ISFSI

Enclosure
San Onofre Nuclear Generating Station
ISFSI Decommissioning Funding Plan

San Onofre Nuclear Generating Station ISFSI Decommissioning Funding Plan

The decommissioning funding requirements for the San Onofre Nuclear Generating Station (SONGS) Independent Spent Fuel Storage Installation (ISFSI) are currently addressed in the SONGS Unit 1 site-specific decommissioning cost estimate and the SONGS Units 2 and 3 site-specific decommissioning cost estimates.

Provided below is the information required by 10 CFR 72.30(b) for the SONGS Units 1, 2, and 3 ISFSI Decommissioning Funding Plan.

The SONGS Unit 1 co-owners are reported as follows:

Southern California Edison (SCE)	80.00 %
San Diego Gas & Electric (SDG&E)	<u>20.00 %</u>
	100.00 %

The SONGS Units 2 and 3 co-owners and former co-owner, Anaheim, are reported as follows:

Southern California Edison (SCE)	78.21 %
San Diego Gas & Electric (SDG&E)	20.00 %
City of Anaheim (Anaheim)	0.00 %
City of Riverside (Riverside)	<u>1.79 %</u>
	100.00 %

All dollar amounts are reported in 100% share, 2012 dollars.

The decommissioning liability is shared between the current co-owners and former co-owner, Anaheim, as set forth below for each unit:

Owner	Unit 1 Decommissioning Liability	Unit 2 Decommissioning Liability	Unit 3 Decommissioning Liability
SCE	80.00%	76.30%	76.35%
SDG&E	20.00%	20.00%	20.00%
Anaheim	0.00%	1.91%	1.86%
Riverside	0.00%	1.79%	1.79%

1) Information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI or MRS:

All costs associated with the decommissioning of the SONGS ISFSI are included in the site-specific decommissioning cost estimates for SONGS Units 1, 2, and 3. SCE's current site-specific decommissioning cost estimates are as follows:⁽¹⁾⁽²⁾

	<u>SONGS Unit 1</u>
"To Go" Radiological Costs	\$ 183.3 million
"To Go" Site Restoration Costs	\$ 10.7 million
"To Go" Fuel Storage Costs (incl. ISFSI Decom.)	<u>\$ 11.2 million</u>
Total "To Go" Costs as of 1/1/2012	\$ 205.2 million

	<u>SONGS Unit 2</u>
Radiological Costs	\$1,273.6 million
Site Restoration Costs	\$ 417.0 million
Fuel Storage Costs (incl. ISFSI Decommissioning)	<u>\$ 385.3 million</u>
Total Costs as of 1/1/2012	\$2,075.9 million

	<u>SONGS Unit 3</u>
Radiological Costs	\$ 1,262.4 million
Site Restoration Costs	\$ 535.5 million
Fuel Storage Costs (incl. ISFSI Decommissioning)	<u>\$ 368.3 million</u>
Total Costs as of 1/1/2012	\$ 2,166.2 million

The Decommissioning Trust Fund balances for SONGS Units 1, 2, and 3, as of October 31, 2012, (net of estimated capital gains taxes) are :⁽³⁾

<u>Co-Owners</u>	<u>SONGS Unit 1</u>
SCE	\$ 195.1 million
<u>SDG&E</u>	<u>\$ 96.3 million</u>
TOTAL	\$ 291.4 million

<u>Co-Owners</u>	<u>SONGS Unit 2</u>
SCE	\$1,213.1 million
SDG&E	\$ 327.5 million
Anaheim	\$ 61.0 million
<u>Riverside</u>	<u>\$ 36.5 million</u>
TOTAL	\$1,638.1 million

<u>Co-Owners</u>	<u>SONGS Unit 3</u>
SCE	\$1,377.0 million
SDG&E	\$ 382.6 million
Anaheim	\$ 66.3 million
<u>Riverside</u>	<u>\$ 39.5 million</u>
TOTAL	\$1,865.4 million

The SONGS Unit 1 decommissioning trust is currently considered to be fully funded.

Each Co-owner's current annual contribution amounts to SONGS Units 2 and 3 decommissioning trusts are as follows:

<u>Co-owner</u>	<u>SONGS Unit 2</u>	<u>SONGS Unit 3</u>
SCE	\$ 17.6 million	\$ 5.1 million
SDG&E	\$ 5.8 million	\$ 2.2 million
Anaheim	\$ 0.0 million	\$ 0.0 million
<u>Riverside</u>	<u>\$ 0.9 million</u>	<u>\$ 0.7 million</u>
	\$ 24.3 million	\$ 8.0 million

2) A detailed cost estimate for ISFSI decommissioning, in an amount reflecting:

- (i) The cost of an independent contractor to perform all decommissioning activities;**
- (ii) An adequate contingency factor; and**
- (iii) The cost of meeting the 20.1402 of this chapter criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of 20.1403 of this chapter, the cost estimate may be based on meeting the 20.1403 of this chapter.**

SCE's site-specific decommissioning cost estimates for SONGS Units 1, 2, and 3 were developed under the assumption that SCE would be the decommissioning agent and direct all ISFSI decommissioning work. The site-specific estimates for ISFSI decommissioning are as follows:

SONGS Unit 1	\$ 4.6 million
SONGS Unit 2	\$ 21.1 million
SONGS Unit 3	<u>\$ 21.2 million</u>
TOTAL	\$ 46.9 million

These site-specific ISFSI decommissioning estimates include a 25% contingency factor.

The site-specific decommissioning cost estimates for SONGS Units 1, 2, and 3 include the cost of meeting the 10 CFR 20.1402 radiological criteria for unrestricted site use.

3) Identification of and justification for using the key assumptions contained in the decommissioning cost estimate.

The SONGS Units 1, 2, and 3 site-specific decommissioning cost estimates, approved by the CPUC on July 29, 2010, contain the following key assumptions that pertain to spent fuel storage and ISFSI decommissioning:

The SONGS ISFSI is located on the partially decommissioned site of SONGS Unit 1, and is operated under a Part 50 General License.

SONGS Unit 1:

- Permanently retired on November 30, 1992
- 395 fuel assemblies in 17 canisters are located in the SONGS ISFSI
- 1 canister of Greater Than Class C (GTCC) waste is located in the SONGS ISFSI
- DOE will commence transporting spent fuel assemblies to a deep geologic repository in 2020
- DOE will remove last SONGS Unit 1 fuel from the ISFSI in 2036

SONGS Unit 2:

- Current NRC operating license will expire on February 16, 2022
- DOE will commence transporting spent fuel assemblies to a deep geologic repository in 2020
- 945 fuel assemblies will be removed by DOE from the spent fuel pool by 2034
- 1,536 fuel assemblies will be placed in 64 canisters in the SONGS ISFSI by 2034
- 5 canisters of Greater Than Class C (GTCC) waste will be placed in the SONGS ISFSI by 2034
- DOE will remove last SONGS Unit 2 fuel from the ISFSI by 2051

SONGS Unit 3:

- Current NRC operating license will expire on November 15, 2022
- DOE will commence transporting spent fuel assemblies to a deep geologic repository in 2020
- 987 fuel assemblies will be removed by DOE from the spent fuel pool by 2034
- 1,501 fuel assemblies will be placed in 63 canisters in the SONGS ISFSI by 2034
- 5 canisters of Greater Than Class C (GTCC) waste will be placed in the SONGS ISFSI by 2034
- DOE will remove last SONGS Unit 3 fuel from the ISFSI by 2051

SONGS ISFSI

- The SONGS ISFSI will be decommissioned and the plant and ISFSI site will be decontaminated to meet 10 CFR 20.1402 site release criteria for unrestricted use as required to terminate the Part 50 General License by 2053.

These assumptions will be updated periodically due to the ongoing uncertainties regarding the availability of a permanent repository for spent fuel.

4) **A description of the method of assuring funds for decommissioning from paragraph (e) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility.**

SCE and the SONGS co-owners are required to accumulate sufficient funds to decommission the SONGS facility under 10 CFR 50.75 and under the California Nuclear Facilities Decommissioning Act, CA Public Utilities Code Section 8321, et. seq. The California Public Utilities Commission (CPUC) has construed the SONGS decommissioning obligation to include: (1) radiological decommissioning as required to terminate the NRC licenses, (2) spent fuel storage, and (3) site restoration as required to terminate the SONGS site lease contracts granted by the U.S. Department of the Navy and the California State Lands Commission.

Under CA Public Utilities Code Section 8326(a)(2), SCE and SDG&E are required to update their site-specific nuclear facility decommissioning cost estimates periodically to

reflect changes in decommissioning regulation, technology, and economics, for the purpose of adjusting contribution levels to their decommissioning trust.

Each of the SONGS co-owners deposits its decommissioning fund contributions into one or more external sinking funds as provided in 10 CFR 50.75(e)(1)(ii). The SONGS co-owners' decommissioning fund accumulations and annual contribution rates are provided in the response to Question 1, above.

Under CA Public Utilities Code Sections 8326(b), 8327, 8328, and 8329, the CPUC periodically reviews SCE and SDG&E's site-specific decommissioning cost estimates for the purpose of considering changes in electrical rates to ensure that sufficient funds will be available for payment of all decommissioning costs.

5) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination.

The ISFSI does not contribute to subsurface material containing residual radioactivity because the dry shielded canisters are double seal welded and designed to meet the criteria of Interim Staff Guidance-18, Revision 1, "The Design and Testing of Lid Welds on Austenitic Stainless Steel Canisters as the Confinement Boundary for Spent Fuel Storage." This prevents the release of radionuclides in liquid or gaseous effluents from the SONGS ISFSI to the environment.

The SONGS ISFSI is located on the partially decommissioned site of SONGS Unit 1. The SONGS Unit 1 site-specific decommissioning cost estimate includes a volume of onsite subsurface material containing residual remediation to meet the criteria for license termination for the entire SONGS Unit 1 site.

6) A certification that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning.

Financial assurance for ISFSI decommissioning funding is provided through the process used to fund the decommissioning cost estimates of SONGS Units 1, 2 and 3 as described in the responses to Questions 1 and 4 above.

Notes: (1) The site-specific decommissioning cost estimate for SONGS Unit 1 that was provided to the California Public Utilities Commission (CPUC) on April 3, 2009, includes the SONGS Unit 1 share of: (1) spent fuel storage and ISFSI decommissioning costs; (2) the remaining radiological costs associated with terminating the site license for SONGS Unit 1; (3) non-radiological costs, including the costs to excavate and dispose of all remaining structures, appurtenances, and foundations from the SONGS Unit 1 onshore site, and to perform site restoration, as required under the current site lease contract(s) with the U.S. Department of the Navy, and to disposition the SONGS Unit 1 offshore

circulating water conduits as required under the current amendment to the easement-lease granted by the California State Lands Commission. The CPUC approved the SONGS Unit 1 decommissioning cost estimate on July 29, 2010.

- (2) The site-specific decommissioning cost estimates for SONGS Units 2 and 3 that were provided to the California Public Utilities Commission (CPUC) on April 3, 2009, include the SONGS Units 2 and 3 shares of: (1) spent fuel storage and ISFSI decommissioning costs; (2) radiological costs associated with terminating the site licenses for SONGS Units 2 and 3; (3) non-radiological costs, including the costs to excavate and dispose of all remaining structures, appurtenances, and foundations from the SONGS Units 2 and 3 onshore site, and to perform site restoration, as required under the current site lease contract(s) with the U.S. Department of the Navy, and to disposition the SONGS Units 2 and 3 offshore circulating water conduits as required under the current easement-lease granted by the California State Lands Commission. The CPUC approved the SONGS Units 2 and 3 decommissioning cost estimates on July 29, 2010.
- (3) SCE is submitting information with respect to its co-owners, SDG&E, Anaheim, and Riverside. SDG&E, Anaheim, and Riverside are each responsible for the completeness and accuracy of their information.

The \$742 Million Question:

Who should pay for the extra Decommissioning money, not yet collected?

Since the operators of San Onofre made the financial decision to shut it down prematurely, all decommissioning fees not already collected for Units 2 and 3 by 01/31/12, should be paid by the operators of San Onofre, not ratepayers!

Decommissioning Costs as of 1/1/2012	SONGS 1 \$ Million	SONGS 2 \$ Million	SONGS 3 \$ Million
Radiological Costs	183.3	1,273.6	1,262.4
Site Restoration	10.7	417.0	535.5
Fuel Storage (Including ISFSI Decommissioning)	11.2	385.3	368.3
Estimated Total Budget 2009 (See Note 2)	N/A	1,791	1,868
Total Collected 10/31/12 (See Note 1)	291.4	1,638.1	1,865.4
Total Projection 1/1/2012	205.2	2,079.5	2,166.2
Estimated Loss Due To Poor RSG Design/Operation	86.2 Previously Overbilled	441.4 Shortfall	300.8 Shortfall

- 1- SCE Letter to NRC (2012)
- 2- SCE Testimony to CPUC (2009)

Background

The purpose of the Nuclear Decommissioning Trust Funds is to mitigate for ratepayers the high cost of decommissioning nuclear power plants at the end of their lives by collecting reasonable fees over a long period of time. The CPUC directs the investor owned utilities to collect a regular Decommissioning fee on customers' monthly electric bills for Edison and SDG&E's San Onofre Plant (30 years old) and PG&E's Diablo Canyon Plant (28 years old). The expected life of a nuclear power plant is 40 years.

\$5.2 billion of ratepayer collection is currently invested with the Trust Funds.

At current liquidation value, combined Decommissioning Trust Funds are ~90% funded. The Trust Funds are currently invested in equities (60%) and investment grade fixed income securities (40%). D.87-05-062 established nuclear decommissioning trusts for funding future decommissioning of the utilities' nuclear units. Each nuclear plant has decommissioning trusts and a committee that oversees the trust fund; Under Public Utilities Code § 8326, SCE is required to provide a decommissioning cost estimate that includes, among other things,

- (1) an estimate of the costs of decommissioning, and
- (2) a description of changes in regulation, technology, and economics affecting the estimate of costs.

As SCE explains, and as TURN's witness Lacy acknowledges, the costs to decommission a nuclear facility include the costs to

- (1) store the spent fuel onsite or offsite until it is removed by the DOE;
- (2) remove residual radioactivity from the site, including from the spent fuel storage facility, to levels required to terminate the NRC license and to release the site for unrestricted use; and
- (3) remove non-radiological structures, systems, and components as required to leave the site in a safe condition, or as otherwise mandated by the state or the site owner.

The Utilities project that they will perform the actual decommissioning in three phases.

During Phase I, the Utilities will decontaminate, dismantle, and dispose of the units and the site common facilities. The Utilities will also continue to maintain the integrity and safety of the spent fuel while it remains on the SONGS site. The Utilities will maintain spent fuel in wet storage in spent fuel pools until it can be safely transferred to the SONGS 2 & 3 Independent Spent Fuel Storage Installation (ISFSI) or removed from the site by the U.S. Department of Energy (DOE). To safely store fuel in wet storage, the Utilities must maintain each plant system required for spent fuel pool operation until the fuel is removed. The Utilities will drain, de-energize, and secure all other plant systems. After the SONGS 2 & 3 spent fuel pools are empty, the Utilities will decommission the pools and their associated support structures and systems. The Utilities assume that by the time the SONGS 2 & 3 fuel has cooled sufficiently to be removed from the spent fuel pools, the DOE will have removed enough SONGS 2 & 3 fuel from the SONGS site that it will not be necessary to further expand the ISFSI pads or to construct additional Advanced Horizontal Storage Modules (ASHM) to accommodate that fuel.

During Phase II, the Utilities will monitor the ISFSI until the DOE removes the last spent fuel from the site, which is assumed to occur by 2051 based on studies developed from the DOE Acceptance Priority Ranking & Annual Capacity Report (DOE/RW-0567), dated July 2004.

During Phase III, the Utilities will dismantle and dispose of the ISFSI, all remaining site common facilities, and the remaining structural foundations; terminate the NRC licenses; and complete the final site restoration work.

Note: The Utilities do not own the site upon which the SONGS facility is located. Instead, they are authorized to use the site under several lease contracts and grants of easement from the U.S. Department of the Navy and the California State Lands Commission. To terminate these agreements, the Utilities are required to remove all improvements they installed or constructed on the site, except as agreed by the lessors/grantors, return the site to a condition satisfactory to the grantor, and return the site to the lessors/grantors.