

1.0 EXECUTIVE SUMMARY

This report presents the 2014 Decommissioning Cost Estimate (DCE) Study of the San Onofre Nuclear Generating Station (SONGS) Units 2 & 3, hereinafter referred to as the 2014 Cost Study. The San Onofre Nuclear Generating Station is operated by the Southern California Edison Company (SCE).

On June 7, 2013, SCE announced its intention to permanently cease power generation operations and shut down SONGS Units 2 & 3. Units 2 & 3 had not produced power since January 9, 2012 and January 31, 2012, respectively. SCE now has the responsibility to decommission the site. In January 2014 SCE contracted with *EnergySolutions* to evaluate decommissioning alternatives and assist in the development of a detailed project schedule and DCE to support the preparation and submittal of a Post Shutdown Decommissioning Activities Report (PSDAR) in accordance with 10 CFR 50.82(a)(4)(i), which requires that a PSDAR be submitted within two years following the permanent cessation of operations.

This study has been performed to furnish an estimate of the costs for: (1) decommissioning SONGS Units 2 & 3 to the extent required to terminate the plant's operating license pursuant to 10 CFR 50.75(c); (2) post-shutdown management of spent fuel until acceptance by the U.S. Department of Energy (DOE) pursuant to 10 CFR 50.54(bb); (3) clean demolition of structures and restoration of the site in accordance with the United States Department of Navy Grant of Easement (Ref. No. 14); and the California State Lands Commission easement (Ref No. 15); and (4) Independent Spent Fuel Storage Installation (ISFSI) decommissioning pursuant to 10 CFR 72.30. This study includes SCE's actual costs incurred in the transitional periods following cessation of permanent operations on June 7, 2013 until December 31, 2013. Costs presented herein commencing on January 1, 2014 are estimated.

Accordingly, the costs and schedules for all activities are segregated for regulatory purposes as follows: costs for "License Termination" (10 CFR 50.75(c)); costs for "Spent Fuel Management" (10 CFR 50.54(bb)); costs for "Site Restoration" (clean removal and site restoration) final site conditions; and costs for "ISFSI Decommissioning" (10 CFR 72.30). *EnergySolutions* has established a Work Breakdown Structure (WBS) and cost accounting system to differentiate between these project accounts.

This study analyzes the following technical approach to decommissioning as defined by SCE and the co-owners:

- DECON methodology.
- Permanent cessation of operations on June 7, 2013.
- Termination of spent fuel pool operation six years after permanent shutdown.
- Spent fuel will be stored in Multi-Purpose Canisters (MPCs) at an on-site Independent Spent Fuel Storage Installation (ISFSI).
- A dry transfer facility will not be necessary.
- DOE begins accepting spent fuel from the industry in 2024 and completes the removal of all SONGS spent fuel by 2049.
- Decommissioning will be performed by SCE and a Decommissioning General Contractor (DGC).
- Incorporation of Life-of-Plant (LOP) Disposal Rates for Class A Low-Level Radioactive Waste (LLRW).

- Incorporation of disposal rates for Class B and C LLRW based on recent quotes for disposal at the Waste Control Specialists LLC (WCS) site in Andrews County, Texas.

The cost estimate results are provided in Table 1-1. Table 1-1 gives License Termination costs (which correspond to 10 CFR 50.75 (c) requirements); Spent Fuel Management costs (which correspond to 10 CFR 50.54 (bb) requirements); and Site Restoration costs (which correspond to activities such as clean building demolition and site grading and end-state preparation as required under the Site Easement).

**Table 1-1
Decommissioning Cost Summary¹
(2014 Dollars in Thousands)**

Cost Account	Unit 2	Unit 3	Total
License Termination 50.75(c)	\$1,034,230	\$1,078,016	\$2,112,246
Spent Fuel Management 50.54(bb)	\$623,209	\$652,987	\$1,276,196
Site Restoration	\$423,297	\$599,507	\$1,022,804
Totals	\$2,080,735	\$2,330,511	\$4,411,246

The estimate is based on site-specific plant systems and buildings inventories. These inventories, and EnergySolutions' proprietary Unit Cost Factors (UCFs), were used to generate required man-hours, activity schedule hours and costs, and waste volume, weight, and classification. Based on the activity schedule hours and a decommissioning activities analysis, a Critical Path Method (CPM) analysis was performed to determine the decommissioning schedules. These schedules reflect the effects of sequenced activity-dependent or distributed decommissioning elements such as planning and preparations, major component removal, building decontamination, and spent fuel shipping. The schedules are divided into project phases (periods) and presented, as noted previously, by cost account "License Termination," "Spent Fuel Management," or "Site Restoration." The summary schedule is shown in Figure 1-1, and may also be found in Section 6.0 of this report.

¹ Rows and columns may not add correctly due to rounding.

Figure 1-1
Summary Schedule

DECON with Dry Storage, 2013 Shutdown and DOE Acceptance in 2024

