ENERGYSOLUTIONS

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2014 Decommissioning Cost Analysis of the San Onofre Nuclear Generating Station Units 2 & 3

Project No. 164001

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ACRONYMS AND ABBREVIATIONS

AHSM	Advanced Horizontal Storage Modules
AIF	Atomic Industrial Forum
ALARA	As Low As Reasonably Achievable
ARO	Asset Retirement Obligation
CFR	Code of Federal Regulations
CPM	Critical Path Method
DAW	Dry Active Waste
DGC	Decommissioning General Contractor
DOE	U.S. Department of Energy
DSC	Dry Storage Canister
ESS	Essential System
FEMA	Federal Emergency Management Agency
FSS	Final Status Survey
FTE	Full Time Equivalent
GSA	U.S. General Services Administration
GTCC	Greater Than Class C
HP	Health Physics
ISFSI	Independent Spent Fuel Storage Installation
LLRW	Low-Level Radioactive Waste
LLW	Low Level Waste
LLWPA	Low-Level Waste Policy Act
LOP	Life-of-Plant
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MPC	Multi-Purpose Canister
MWt	Megawatt thermal
NON	Non-Essential System
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
ORISE	Oak Ridge Institute for Science and Education
PCB	Polychlorinated Biphenyl
PGE	Pacific Gas & Electric
PSDAR	Post Shutdown Decommissioning Activities Report
PWR	Pressurized Water Reactor
RIF	Reduction In Force
SCE	Southern California Edison
SONGS	San Onofre Nuclear Generating Station
STRUCT	Structure
TCEQ	Texas Commission on Environmental Quality
WBS	Work Breakdown Structure
WCS	Waste Control Specialists LLC
UCF	Unit Cost Factor

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 Energy*Solutions* 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 schedule 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). Energy*Solutions* 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 Summary[1]
(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	**$2,080,736**	**$2,330,511**	**$4,411,246**

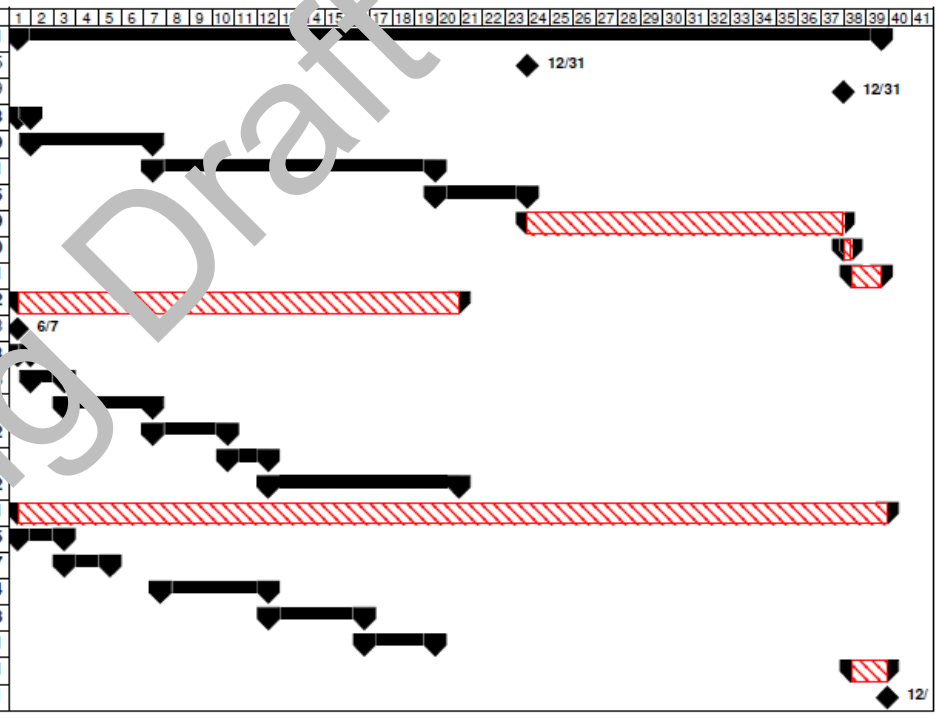
The estimate is based on site-specific plant systems and buildings inventories. These inventories, and Energy*Solutions*' proprietary Unit Cost Factors (UCFs), were used to generate required manhours, activity schedule hours and costs, and waste volume, weight, and classification. Based on the activity 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

Task Name	Start	Finish
Post-Shutdown Spent Fuel Management	06/07/2013	09/08/2051
Spent Fuel Shipping Complete - Unit 1	12/31/2035	12/31/2035
Spent Fuel Shipping Complete - Units 2 & 3	12/31/2049	12/31/2049
SNF Pd 1 - Spent Fuel Management Transition	06/07/2013	12/31/2013
SNF Pd 2 - Spent Fuel Transfer to Dry Storage	1/1/2014	06/01/2019
SNF Pd 3 - Dry Storage During Decommissioning - Units 1, 2 and 3	06/01/2019	12/05/2031
SNF Pd 4 - Dry Storage Only - Units 1, 2 and 3	12/05/2031	12/31/2035
SNF Pd 5 - Dry Storage Only - Units 2 and 3	12/31/2035	12/31/2049
SNF D&D Pd 1 - ISFSI D&D Planning	12/31/2049	05/06/2050
SNF D&D Pd 2 - ISFSI D&D	05/06/2050	09/08/2051
Part 50 License Termination	06/07/2013	12/24/2032
Announcement of Cessation of Operations (June 7, 2013)	06/07/2013	06/07/2013
Decon Pd 1 - Transition to Decommissioning	06/07/2013	12/31/2013
Decon Pd 2 - Decommissioning Planning and Site Modifications	1/1/2014	06/30/20
Decon Pd 3 - Decommissioning Preparations and Reactor Internals Segmentation	06/30/2015	06/01/20
Decon Pd 4 - Plant Systems and Large Component Removal	06/01/2019	0 22
Decon Pd 5 - Building Decontamination	09/24/2022	7/13/20
Decon Pd 6 - License Termination During Demolition	07/13/2024	24/2032
Site Restoration	06/07/201	12/ 2051
SR Pd 1 - Transition to Site Restoration	06/0 2013	/30/2015
SR Pd 2 - Building Demolition During Decommissioning	6/3 2015	07/11/2017
SR Pd 3 - Subsurface Demolition Engineering and Permitting	10/ 2019	07/13/2024
SR Pd 4 - Building Demolition to 3 Feet Below Grade	07/13/ 24	10/14/2028
SR Pd 5 - Subgrade Structure Removal Below -3 Feet	10/14/2028	12/05/2031
SR Pd 6 - Final Site Restoration and Lease Termination	06/2050	12/15/2051
Final Easement Termination	12/15/2051	12/15/2051



2.0 INTRODUCTION

2.1 Study Objective

This report presents the 2014 Decommissioning Cost Estimate 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 owned by the Southern California Edison Company (SCE), San Diego Gas & Electric Company, and the City of Riverside. A former owner, the City of Anaheim, also has liability for decommissioning. SCE has provided the following information regarding the liability by owner for SONGS decommissioning costs:

Cost Categories	**Owners**			
	SDG&E	**Riverside**	**Anaheim**	**SCE**
SONGS 1	20%	0%	0%	80%
SONGS 2	20%	1.79%	2.4737%	75.7363%
SONGS 3	20%	1.79%	2.4625%	75.7475%
Common Facilities	20%	1.79%	2.4681%	75.7419%
SONGS 1 Fuel	20%	0%	0%	80%
SONGS 2/3 Fuel	20%	1.79%	2.3398%	75.8702%
ISFSI Maintenance and D&D	20%	1.6066%	2.2686%	76.1248%

This study has been performed to support the development of a site-specific PSDAR and furnish an estimate of the costs for (1) decommissioning SONGS Units 2 & 3 to the extent required to terminate the plant's operating license, (2) post-shutdown management of spent fuel until acceptance by the U.S. Department of Energy (DOE), (3) clean demolition of structures and restoration of the site in accordance with the U.S. Department of Navy Grant of Easement (Ref. No. 14), and the California State Lands Commission easement, and (4) Independent Spent Fuel Storage Installation (ISFSI) decommissioning. This study also includes SCE's actual costs incurred in the transitional periods following cessation of permanent operations until December 31, 2013. Estimated costs begin on January 1, 2014.

The study methodology follows the basic approach originally presented in the Atomic Industrial Forum/National Environmental Studies Project Report AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," (Ref. No. 2). The report was prepared in accordance with Nuclear Regulatory Commission (NRC) Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors," (Ref. No. 3). The estimate is based on compliance with current regulatory requirements and proven decommissioning technologies.

NRC requirements, set forth in Title 10 of the Code of Federal Regulations (CFR), differentiate between the post-shutdown costs associated with the decommissioning of the nuclear plant

facility, those associated with storage of spent fuel on-site, and those associated with the decommissioning of the spent fuel storage facility. The Code of Federal Regulations, however, does not address the entire scope of the decommissioning liability for each nuclear facility. 10 CFR 50.75(c) requires funding by the licensee(s) of the facility for the decommissioning program, but specifically excludes the cost of removal and disposal of spent fuel and of clean structures. 10 CFR 50.75(c) also excludes the cost of site restoration activities that do not involve the removal of residual radioactivity necessary to terminate the NRC license(s). 10 CFR 50.54 (bb) requires funding by the licensee(s) "for the management of all irradiated fuel at the reactor upon expiration of the reactor operating license(s) until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository." 10 CFR 72.30 requires funding for decommissioning of the on-site spent fuel storage facility after the irradiated fuel is accepted by the DOE.

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 transportable 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).

In addition, this study includes the following assumptions:

- Incorporation of EnergySolutions' Life-of-Plant (LOP) Disposal Rates for Class A Low-Level Radioactive Waste (LLRW), (Ref. No. 7).
- 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.

2.2 Regulatory Framework

Provisions of current laws and regulations affecting decommissioning, waste management, and spent fuel management are as follows:

1. NRC regulations require a license for on-site storage of spent fuel. Wet storage in a spent fuel pool is authorized by a facility's 10 CFR Part 50 license. On-site dry storage of spent fuel at an Independent Spent Fuel Storage Installation (ISFSI) is licensed by either: (a) the general license set forth in 10 CFR 72.210, which requires that a Part 50 license be in place; or (b) a site-specific ISFSI license issued pursuant to 10 CFR Part 72.

2. 10 CFR 50.75(c) requires funding by the licensee(s) of the facility for decommissioning.

3. 10 CFR 50.54 (bb) requires the licensee(s), within two years following permanent cessation of operation of the reactor or five years before expiration of the operating license(s), whichever occurs first, to submit written notification to the NRC for its review and preliminary approval of the program by which the licensee intends to manage and provide funding "for the management of all irradiated fuel at the reactor upon expiration of the reactor operating license until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository."

4. 10 CFR 961 (Ref. No. 4), Appendix E, requires spent fuel to be cooled for at least five years before it can be accepted by DOE.

5. 10 CFR 72.30 requires funding by the licensee(s) for termination of the ISFSI license.

Decommissioning Alternatives

The three basic methods for decommissioning are DECON, SAFSTOR, and ENTOMB, which are summarized as follows:

1. DECON: The equipment, structures, and portions of the facility and site that contain radioactive contaminants are promptly removed or decontaminated to a level that permits termination of the license after cessation of operations.

2. SAFSTOR: The facility is placed in a safe, stable condition and maintained in that state (safe storage). The facility is decontaminated and dismantled at the end of the storage period to levels that permit license termination. NRC regulations require decommissioning to be completed within 60 years of cessation of operation.

3. ENTOMB: Radioactive structures, systems, and components are encased in a structurally long-lived substance, such as concrete. The entombed structure is appropriately maintained and monitored until radioactivity decays to a level that permits termination of the license. Since entombment will exceed the requirement for decommissioning to be completed within 60 years of cessation of operation, NRC handles entombment requests on a case-by-case basis.

Post-Shutdown Spent Fuel Management Alternatives

The options for long-term post-shutdown spent fuel management currently available to power plant operators are (1) wet storage consisting of continued maintenance and operation of the spent fuel pool, and (2) dry storage consisting of transfer of spent fuel from the fuel pool to on-site dry storage modules after a cooling period. Maintaining the spent fuel pool for an extended duration following cessation of operations prevents termination of the Part 50 license and typically has a higher annual maintenance and operating cost than the dry storage alternative. Transfer of spent fuel to an ISFSI requires additional expenditures for purchase and construction of the ISFSI and dismantlement and disposal of the ISFSI following completion of spent fuel transfer to DOE.

The spent fuel shipping schedules furnished by SCE for this study are based on projections that DOE will commence accepting spent fuel from domestic commercial nuclear power plants in 2024, and that the DOE will accept spent fuel at the rate published in DOE's July 2004 Acceptance Priority Ranking & Annual Capacity Report (DOE/RW-0567) (Ref. No. 12). These assumptions are in accordance with SCE testimony to the Public Utilities Commission of the State of California (Ref. No. 17).

3.0 STUDY METHODOLOGY

3.1 General Description

Energy*Solutions* maintains a proprietary decommissioning cost model based upon the fundamental technical approach established in AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," dated May 1986 (Ref. No. 2). The cost model has been updated frequently in accordance with regulatory requirements and industry experience. The cost model includes elements for estimating distributed and undistributed costs. Distributed costs are activity specific and include planning and preparation costs as well as the decontamination, packaging, disposal, and removal of major components and systems. For example, the segmentation, packaging, and disposal of the reactor internals is a distributed cost. Undistributed costs, sometimes referred to as collateral costs, are typically time dependent costs such as utility and decommissioning general contractor staff, property taxes, insurance, regulatory fees and permits, energy costs, and security staff.

The methodology for preparing cost estimates for a selected decommissioning alternative requires development of a site-specific detailed work activity sequence based upon the plant inventory. The activity sequence is used to define the labor, material, equipment, energy resources, and duration required for each activity. In the case of major components, individual work sequence activity analyses are performed based on the physical and radiological characteristics of the component, and the packaging, transportation, and disposal options available.

In the case of structures and small components and equipment such as piping, pumps, and tanks, the work durations and costs are calculated based on UCFs. UCFs are economic parameters developed to express costs per unit of work output, piece of equipment, or time. They are developed using decommissioning experience, information on the latest technology applicable to decommissioning, and engineering judgment. The total cost of a specific decommissioning activity can be determined by multiplying the total number of units associated with that activity by the UCF, expressed as $/unit for that activity. For example, the estimated demolition cost of a non-contaminated concrete structure can be obtained by multiplying the volume of concrete in the structure by the UCF for non-contaminated reinforced concrete demolition, expressed in $/unit volume. Each UCF has associated with it a man-hours/unit and schedule-hours/unit. From these values, total man-hours and total schedule-hours can be determined for a particular activity.

3.2 Schedule Analysis

After the work activity durations are calculated for all distributed activities, a critical path schedule analysis is performed using MS Project. The schedule accounts for constraints such as spent fuel cooling periods and regulatory reviews. The schedule is typically delineated into phases or time periods (hereinafter referred to as period or periods) that differentiate manpower requirements and undistributed costs.

In order to differentiate between License Termination, Spent Fuel, and Site Restoration elements of the entire decommissioning scope of work, Energy*Solutions* has established a Work Breakdown Structure (WBS) and cost accounting system to treat each element as a subproject. Accordingly, the overall project schedule is divided into interrelated periods with major

milestones defining the beginning and ending of each period. The major milestones also serve as the basis for integrating the periods of the four subprojects.

3.3 Decommissioning Staff

Energy*Solutions*' has assumed that the SONGS Units 2 and 3 decommissioning project will be performed in an efficiently planned and executed manner using project personnel experienced in decommissioning. This DCE assumes that the decommissioning will be performed by a highly experienced and qualified DGC, with oversight and management of the decommissioning operations performed by the Utility staff. It is also assumed that the Utility staff will be supplemented by a professional consulting engineering firm, particularly in the planning and preparation phase.

Energy*Solutions* analyzed the SONGS operational staff and developed a site-specific staffing plan. The SCE existing salary structure was then used as the basis for calculating Utility staff labor costs. Energy*Solutions* used industry data to develop DGC salary costs.

Staffing levels, for both staffing plans and for each project period are based on the Atomic Industrial Forum (AIF) guidelines and industry experience. The sizes of the staffs are varied in each period in accordance with the requirements of the work activities. Staffing has been organized into the following departments or functional groups:

- Decommissioning
- Engineering
- Maintenance and Work Control
- Operations
- Oversight and Nuclear Safety
- Radiation Protection and Chemistry
- Regulatory and Emergency Planning
- Safety and Human Performance
- Security Administration
- Security Guard Force
- Site Management and Administration
- Additional Staff for Spent Fuel Shipping
- DGC Staff

3.4 Waste Disposal

Waste management costs comprise a significant portion of the decommissioning cost estimate. Additionally, limited future access to disposal sites licensed for receipt of Class B and C wastes introduces a significant level of uncertainty with respect to the appropriateness of using existing rate structures to estimate disposal costs of these wastes. Energy*Solutions*' approach to estimating waste disposal costs is discussed in the following paragraphs.

Waste Classification

Regulations governing disposal of radioactive waste are stringent in order to ensure control of the waste and preclude adverse impact on public health and safety. At present, LLRW disposal is controlled by 10 CFR 61, which went into effect in December 1983. This regulation stipulates

the criteria for the establishment and operation of shallow-land LLRW burial facilities. Embodied within this new regulation are criteria and classifications for packaging LLRW such that it is acceptable for burial at licensed LLRW disposal sites.

For each waste classification, 10 CFR 61 stipulates specific criteria for physical and chemical properties that the LLRW must meet in order to be accepted at a licensed disposal site. The LLRW disposal criteria of 10 CFR 61 require that LLRW generators determine the proportional amount of a number of specific radioactive isotopes present in each container of disposable LLRW. This requirement for isotopic analysis of each container of disposable LLRW is met by employing a combination of analytical techniques such as computerized analyses based upon scaling factors, sample laboratory analyses, and direct assay methods. Having performed an isotopic analysis of each container of disposable LLRW, the waste must then be classified according to one of the classifications (Class A, B, C, or Greater Than Class C (GTCC)) as defined in 10 CFR 61.

Energy*Solutions*' classification of LLRW resulting from decommissioning activities is based on AIF/NESP-036 (Ref. No. 2), NUREG/CR-0130 (Ref. No. 5), NUREG/CR-0672 (Ref. No. 6), and recent industry experience. The estimated curie content of the reactor vessel and internals at shutdown is derived from NUREG/CR-0130 for Pressurized Water Reactors (PWRs) and NUREG/CR-0672 for Boiling Water Reactors (BWRs), and adjusted for the different mass of components and period of decay.

Packaging

Selection of the type and quantity of containers required for Class B and C wastes is based on the most restrictive of either curie content, dose-rate, container weight limit, or container volume limit. GTCC wastes from segmentation of the reactor vessel internals is packaged in spent fuel canisters. The selection of container type for Class A waste is based on the transportation mode (rail, truck, barge, etc.) and waste form. The quantity of Class A waste containers is determined by the most restrictive of either container weight limit or container volume limit. Large components, such as steam generators, pressurizers, and reactor recirculation pumps, are shipped as their own containers with additional shielding as required.

Container costs are obtained from manufacturers. Shielded transport cask and liner costs are obtained from the cask owners and operators.

Transportation

Transportation routes to processing and disposal facilities are determined based on available transportation modes (truck, rail, barge, or combinations). Transportation costs for the selected routes and modes are obtained from vendor quotes or published tariffs whenever possible.

Class A Disposal Options and Rates

In accordance with the existing Life-of-Plant Disposal Agreement (Ref. No. 7), all Class A waste that meets the Clive facility waste acceptance criteria is to be disposed of at Clive. All reported waste disposal costs include packaging, transportation, and any applicable surcharges.

Class B and C Disposal Options and Rates

Currently, within the United States, there are only three operational commercial disposal facilities licensed to accept Class B and C LLRW: the Barnwell facility, operated by Energy*Solutions* in Barnwell, South Carolina; the U.S. Ecology facility in Richland, Washington; and the recently licensed facility in Andrews County, Texas operated by Waste Control Specialists. Barnwell only accepts waste from states within the Atlantic Compact and U.S. Ecology only accepts waste from states within the Northwest and Rocky Mountain Compacts. However, the WCS facility will accept waste from the Texas Compact (comprised of Texas and Vermont) and from non-Compact generators. The Texas Compact Commission on March 23, 2012 approved amendments to rules allowing the import of non-compact generator LLRW for disposal at the Andrews County facility.

Greater Than Class C (GTCC)

Wastes identified as 10 CFR 61 Class A, B, and C may be disposed of at near-surface disposal facilities. Certain components are highly activated and may exceed the radionuclide concentration limitations for 10 CFR 61 Class C waste. In accordance with 10 CFR 61, these components cannot be disposed of in a near-surface LLRW disposal facility and must be transferred to a geologic repository or a similar site approved by the NRC.

Highly activated sections of the reactor vessel internals will result in GTCC waste. Presently, a facility does not exist for the disposal of waste exceeding 10 CFR 61 Class C limitations. Energy*Solutions* assumes that the DOE will accept this waste along with spent fuel. Although courts have held that DOE is obligated to accept and dispose of GTCC, issues regarding potential costs remain potentially unsettled. Therefore, Energy*Solutions* conservatively estimates a GTCC waste disposal cost. Energy*Solutions* assumes that the GTCC waste will be packaged in spent fuel canisters and will be shipped to a storage or disposal facility operated by DOE along with the spent fuel. Additionally, Energy*Solutions* assumes shipping costs for GTCC waste to be equivalent to the commercial cost of shipping a Type B licensed, shielded cask such as the CNS 8-120B cask, which is owned and operated by Energy*Solutions*.

LLRW Volume Reduction

Based on current Class A LLRW disposal rates, Energy*Solutions* does not assume on-site volume reduction techniques such as waste compaction or an aggressive decontamination, survey and release effort. These activities are not currently considered to be cost effective over disposal.

Non-Radioactive Non-Hazardous Waste Disposal

Energy*Solutions* assumes that recyclable, non-radioactive scrap metal resulting from the decommissioning program will be transported to a scrap metal dealer. However, no credit is assumed in the estimate for the value of the scrap metal. Clean concrete and demolition debris is assumed to be removed off site to an out of state Class III landfill consistent with the Governor of the State of California Executive Order D-62-02. This study includes the costs of installation and operation of Energy*Solutions*' GAmma Radiation Detection and In-container ANalysis or GARDIAN System. The GARDIAN System performs radiological assays of bulk shipping

containers. The GARDIAN System is a cost effective and efficient means to ensure all non-radiological waste and recyclable materials arising from the decommissioning and demolition of the SONGS' site comply with all applicable regulatory requirements.

Hazardous and Industrial Waste Disposal

Uncontaminated lead shielding remaining after shutdown was assumed to be removed from its installed locations and shipped offsite by entities having a need for the material. The entities will receive the lead at no charge in return for providing the removal and shipping services. Non-Radioactive contaminated surfaces coated with lead based paint will be removed as non-hazardous building demolition debris. All other chemicals and hazardous materials present at shutdown will be removed and properly disposed of during decommissioning.

3.5 Final Status Survey

The cost of performing a final status survey (FSS) is based on NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," (Ref. No. 8). Estimates of MARSSIM Class I, II, and III survey designations are based on radiological assumptions regarding contamination resulting from small and large component removal activities. The FSS activity cost calculation includes the in-place remote survey of underground metal and concrete pipe, soil, and groundwater sampling and analysis. Estimated costs for NRC and Oak Ridge Institute for Science and Education (ORISE) verification are also included, and the NRC review period is incorporated into the project schedule.

3.6 Contingency

Contingencies are applied to cost estimates primarily to allow for unknown or unplanned occurrences during the actual program, e.g., increased radioactive waste materials volumes over that expected; equipment breakdowns, weather delays, and labor strikes. This is consistent with the definition provided in the DOE Cost Estimating Guide, DOE G 430.1-1, 3-28-97 (DOE G) (Ref. No. 9). Contingency "covers costs that may result from incomplete design, unforeseen and unpredictable conditions or uncertainties within the defined project scope. The amount of contingency will depend on the status of design, procurement, and construction; and the complexity and uncertainties of the component parts of the project. Contingency is not to be used to avoid making an accurate assessment of expected costs." Energy*Solutions* determines site-specific contingency factors to be applied to each estimate based on industry practices.

The DOE has established a recommended range of contingencies as a function of completeness of program design, DOE G. The ranges are:

Type of Estimate	Contingency Range as a % of Total Estimate
Planning Phase Estimate	20-30
Budget Estimate	15-25
Title I (Preliminary Design Estimate)	10-20
Title II (Definitive Design Estimate)	5-15

Also, the Pacific Gas & Electric Company (PG&E) Technical Position Paper "Establishing an Appropriate Contingency Factor for Inclusion in the Decommissioning Revenue Requirements" (Ref. No. 13) was developed to review and determine a "conservative contingency factor" to be applied to decommissioning cost estimates. In that study it was determined that "based on an understanding of the level of project definition, and the extent and maturity of estimate input that information used to develop decommissioning cost estimates, the 25 percent contingency factor is within the range of industry recognized cost engineering practices."

The contingencies presented in this study are consistent with the values presented in DOE G 430.1-1 for a Planning Phase estimate (Ref. No. 9) and the PG&E study (Ref. No. 13). As directed by SCE, Energy*Solutions* has applied a 25% contingency to all costs in this study, with the exception of following:

2013 and 2014 Actual Expenditures	0%
Department of Navy Easement Payments	15%
Hazardous and Asbestos Wastes	50%
Site Characterization Surveys	15%
Temporary Facilities	15%
Backfill and Compaction	15%

A reactor decommissioning program will be conducted under an NRC-approved Quality Assurance Program which meets the requirements of 10 CFR 50, Appendix B. However, the development of the quality assurance program, the performance of work under that program, and the effort required to ensure compliance with the program, is already included in the detailed cost estimate. Therefore, Energy*Solutions* does not include quality assurance as an element of the contingency allowance. The same is true for contamination. Where radioactive contamination or activated materials are dealt with, the Energy*Solutions* UCFs and associated calculations fully reflect the cost impact of that material, and a separate contingency is not required specifically due to working with contamination.

3.7 Cost Reporting

Total project costs are aggregated from the distributed activity and undistributed costs into the following categories – Labor, Materials and Equipment, Waste Disposal, and Other costs. Other costs include property taxes, insurance, license fees, permits, and energy. Waste Disposal costs are the summation of packaging, transportation, base disposal rate, and any applicable surcharges. Health physics (HP) supplies and small tool costs are calculated as a component of each distributed activity cost and included in the category of Material and Equipment, with the exception that HP supplies for the Utility HP staff are calculated and reported as an undistributed line item. A line item specific contingency is then calculated for each activity cost element.

4.0 SITE SPECIFIC TECHNICAL APPROACH

4.1 Facility Description

The San Onofre Nuclear Generating Station Units 2 & 3 site is located in southern California on the shore of the Pacific Ocean, about 62 miles Southeast of Los Angeles and approximately 51 miles Northwest of San Diego. The station is located entirely within the Camp Pendleton Marine Corps Base. The current Grant of Easement for the site from the United States Department of the Navy will expire May 12, 2023 (Ref. No. 14). Units 2 & 3 occupy 52.8 acres of the 84 acre site. Approximately 16 acres are occupied by the North Industrial Area (formerly Unit 1), which is where the existing ISFSI is located.

The Nuclear Steam Supply System (NSSS) for both units are identical, with two independent loops, and utilizing pressurized light water cooled reactors (PWRs) supplied by Combustion Engineering, Inc. The construction permit was issued for an initial reactor power of 3,390 MWt with licensed Rated Thermal Power of 3,438 MWt.

The facility currently has an existing ISFSI containing spent fuel that was transferred into MPCs to maintain full core offload capability during operations and to facilitate decommissioning of Unit 1. This study also assumes that the MPCs will be licensed under a 10 CFR Part 72 general license, using the manufacturer's Certificate of Compliance. The 10 CFR Part 50 license will be maintained until decommissioning is complete and all spent fuel has been transferred to DOE.

Appendix A provides a list of the SONGS Units 2 & 3 systems and structures included in the material inventory for this study.

4.2 Decommissioning Periods

The project periods consist of six License Termination periods, seven Spent Fuel Management periods (two of which are ISFSI decontamination and demolition periods), and six Site Restoration periods. The project periods defined for this site-specific study and the major activities performed during each period are as follows:

License Termination Periods

Decon Pd 1 –Transition to Decommissioning

- Defuel Reactors
- Notification of Permanent Fuel Removal
- Disposition of LLRW Resins

Decon Pd 2 –Decommissioning Planning and Site Modifications

- Preparation of Decommissioning License Documents
- Preparation of NRC Deliverables
- Submit PSDAR to NRC
- Perform Historical Site Assessment and Site Characterization
- Planning, Design, and Implementation of Cold & Dark (Site Repowering)
- Design and Implement Spent Fuel Pool Support System Modifications, Control Room Relocation, and Spent Fuel Security System Modifications

- Select Decommissioning General Contractor (DGC)

Decon Pd 3 – Decommissioning Preparations and Reactor Internal Segmentation

- DGC Mobilization and Planning
- System Decontamination
- Reactor Internals Removal Preparations
- Reactor Internals Segmentation Planning and Implementation
- Purchase Dry Storage Modules for GTCC Waste
- Segment and Package Reactor Internals for Storage in the ISFSI

Decon Pd 4 – Plant Systems and Large Component Removal

- Upgrade Rail Spur
- Install Large Array Radiation Detection System
- Remove, Package, and Dispose of Non-Essential Systems
- Asbestos and Lead Abatement
- Fuel Pool Closure
- Remove Spent Fuel Racks, Spent Fuel Pool Island Equipment, and Bridge Cranes
- Remove and Dispose of Legacy Class B & C Wastes
- Remove, Package, and Dispose of Essential Systems
- Removal and Disposal of Spent Resins, Filter Media, and Tank Sludge
- Large Component Removal
- Prepare License Termination Plan

Decon Pd 5 – Building Decontamination

- Decon Containment Buildings – Units 2 & 3
- Decon Turbine Buildings – Units 2 & 3
- Decon Fuel Handling Buildings– Units 2 & 3
- Decon Auxiliary Radwaste Building
- Decon Auxiliary Control Building
- Decon Penetration Buildings– Units 2 & 3
- Decon Safety Equipment and Main Steam Isolation Valve Buildings– Units 2 & 3
- Radiological Survey of Structures During Decon

Decon Pd 6 – License Termination During Decommissioning

- Final Status Survey
- ORISE Verification and NRC Approval

Spent Fuel Management Periods

SNF Pd 1 – Spent Fuel Transfer Management Transition

- Implementation of Security Enhancements Required for Reductions in Staff
- Cyber Security Modifications
- Post Fukushima Modifications – Unit 2
- Design and Fabricate Spent Fuel Canisters

SNF Pd 2 – Spent Fuel Transfer to Dry Storage

- Prepare Irradiated Fuel Management Plan
- Select Dry Storage System Canister Design and Vendor
- Design and Construct ISFSI Expansion

- Purchase, Deliver and Load Spent Fuel Canisters and Transfer to ISFSI

SNF Pd 3 – Dry Storage During Decommissioning Units 1, 2, and 3

SNF Pd 4 – Dry Storage Only – Units 1, 2, and 3

SNF Pd 5 – Dry Storage Only – Units 2, and 3

SNF D&D Pd 1 – ISFSI License Termination
- Preparation and NRC Review of License Termination Plan

SNF D&D Pd 2 – ISFSI Demolition
- Verification Survey of Horizontal Storage Modules
- Clean Demolition of ISFSI AHSMs and Pads
- Clean Demolition of ISFSI Support Structures
- Restore ISFSI Site
- Preparation of Final Report on Decommissioning and NRC Review

Site Restoration Periods

SR Pd 1 –Transition to Site Restoration
- Severance Costs from Reduction in Staffing
- Phase I and II Environmental Assessment of the Mesa Site
- Disposition of Hazardous Waste at the Mesa Site
- Site Characterization of the Mesa Site

SR Pd 2 –Building Demolition During Decommissioning
- Demolish South Access for Decommissioning, South Yard Facility, and Mesa Structures
- Finish Grade and Re-vegetate Mesa Site
- Mesa Lease Termination

SR Pd 3 – Subsurface Demolition Engineering & Permitting
- Hydrogeologic Investigation and Outfall Conduit Survey
- Subsurface Structure Removal Analyses for Lease Termination Activities
- Final Site Grading and Shoreline Protection Engineering Planning and Design
- Obtain Permits and Approvals

SR Pd 4 – Building Demolition to 3 Feet Below Grade
- Demolition Preparations
- Detention and Remove Containment Building Tendons – Units 2 & 3
- Demolish Diesel Generator Buildings – Units 2 & 3
- Demolish Condensate Buildings and Transformer Pads – Units 2 & 3
- Demolish Full Flow Areas and Turbine Buildings – Units 2 & 3
- Demolish Auxiliary Radwaste Building
- Demolish Auxiliary Control Building
- Remove Systems and Demolish Make-up Demineralizer Structures
- Demolish Penetration Buildings – Units 2 & 3

- Demolish Safety Equipment and Main Steam Isolation Valve Buildings – Units 2 & 3
- Demolish Fuel Handling Buildings to 3 Feet Below Grade – Units 2 & 3
- Demolish Containment Buildings to 3 Feet Below Grade – Units 2 & 3
- Demolish Intake and Discharge Structures to 3 Feet Below Grade

SR Pd 5 – Subgrade Structure Removal Below – 3 Feet

- Install Sheet Piling and Excavation Shoring, Dewatering System, and Effluent Treatment and Discharge Controls
- Demolish and Backfill Unit 3 Subsurface Structures
- Demolish and Backfill Unit 2 Subsurface Structures
- Demolish and Backfill Common Subsurface Structures
- Demolish and Backfill Intake Structure Inside Seawall Below -3 Feet
- Remove Off Shore Intake and Outfall Conduits
- Remove Sheet Piling, Excavation Shoring, and Dewatering and Effluent Treatment
- Finish Grading and Re-vegetate Site

SR Pd 6 – Final Site Restoration and Easement Termination

- Obtain Required Permits and Approvals
- Install Dewatering System and Effluent Treatment and Discharge Controls
- Remove and Stockpile Existing Seawall Erosion Protection
- Remove Unit 2 and 3 Seawall and Pedestrian Walkway
- Remove Remaining Intake Structure Beneath Seawall
- Backfill and Compaction of Excavation
- Remove Dewatering System & Effluent Treatment
- Remove Railroad Tracks, Gunite Slope Protection, Access Road, and North Parking Lot
- Finish Grading and Re-vegetate Site

4.3 Decommissioning Staff

Energy*Solutions* developed staffing based on the assumption that decommissioning will be performed by an experienced and qualified DGC, with oversight and management of the decommissioning operations performed by the Utility staff. It is also assumed that the Utility staff will be supplemented by a professional consulting engineering firm, particularly in the planning and preparation phase. The sizes of the Utility and DGC staffs are varied in each period in accordance with the requirements of the work activities. Details on the staff levels, by functional group, during each period are provided in Section 6.0.

4.4 Spent Fuel Management Staff

The largest spent fuel staff is in place while the fuel pool is operational during the spent fuel cooling period and the fuel assemblies are being transferred to dry storage. After all spent fuel has been removed from the spent fuel pool, the staff is reduced. During spent fuel pool operations and the dry storage period, the full-time spent fuel management staff is supplemented with part-time staff to support fuel movements. Details on the staff levels, by functional group, during each period are provided in Section 6.0.

4.5 Spent Fuel Shipments

The spent fuel shipping schedules are based in part on the DOE's "Acceptance Priority Ranking & Annual Capacity Report," dated July 2004. (Ref. No. 12). The information regarding existing fuel inventory, planned transfers to dry storage and DOE's projected date of 2024 for acceptance of spent fuel is based on information provided by SCE. The spent fuel shipping schedule is provided in Appendix B. The spent fuel shipment schedule is based upon best current information and assumptions, as qualified and described elsewhere in this study, including in Section 2.2 above.

5.0 BASES OF ESTIMATE AND KEY ASSUMPTIONS

The bases of, and key assumptions for, this site-specific decommissioning estimate are presented below:

1. SCE's actual expenses incurred from the time of permanent cessation of operations on June 7, 2013 until December 31, 2013 are included in the estimate. All other cost data used in this study is current as of 2014. Totals and subtotals have been rounded to significant figures.

2. Energy*Solutions* developed a prompt dismantlement (DECON) project schedule based on a permanent shutdown date of June 7, 2013.

3. The decommissioning will be performed using currently available technologies.

4. DOE currently has no plans, program, or schedule in place for acceptance of utility spent fuel. However, for purposes of this decommissioning cost estimate, certain simplifying assumptions must be made regarding the schedule and rate of DOE performance. Therefore, while DOE's Standard Contract governing the acceptance of SCE's spent fuel allows for alternative removal schedules, including priority for shutdown reactors and exchanges of allocations, for purposes of this estimate DOE acceptance from the industry is assumed to commence in 2024 in accordance with SCE testimony to the Public Utilities Commission of the State of California (Ref. No. 17). The spent fuel shipment schedules are based upon the assumption that the DOE will accept spent fuel at the rate published in DOE's July 2004 Acceptance Priority Ranking & Annual Capacity Report (DOE/RW-0567) (Ref. No. 12).

5. This estimate is based on site-specific building inventories and plant systems, as provided by Energy*Solutions*.

6. All transformers on site following shutdown are assumed to be polychlorinated biphenyl (PCB) free, therefore, this study does not include costs for disposition of PCB contaminated transformers.

7. Cost for transportation of clean scrap metal to a recycler is included in the estimate; however, no credit is taken for the value of the scrap metal. Concrete debris and all other demolition debris is assumed to be removed from the site and disposed of at an out of state Class III landfill, consistent with the Governor of the State of California Executive Order D-62-02 (Ref. No. 16). The cost of installation and operation of Energy*Solutions*' GARDIAN system for bulk radiological assay of all wastes and recyclable materials leaving the SONGS site is included in the estimate. The purpose of the GARDIAN system is to ensure all materials not intended for disposal at a licensed facility meet all applicable requirements.

8. The estimate is based on final site restoration, in which all existing and proposed structures, with the exception of the switchyard, will be removed. Clean demolition costs are based on the assumption that all site improvements will be removed in their entirety. Clean backfill will be imported and placed to re-establish grade. The entire

disturbed area of the site is to be graded, to restore the natural grade to the extent possible, and seeded.

9. Uncontaminated lead shielding remaining is assumed to be removed from its installed locations and shipped offsite by entities having a need for the material. The entities receive the lead at no charge in return for providing the removal and shipping services.

10. Site-specific information regarding contaminated soil was used as a basis for calculation of current costs for their remediation. While no known radiological or chemical remediation is required at the switchyard or the Mesa, those areas will be addressed as part of the Baseline Characterization Survey and Historical Site Assessment.

11. Costs for hazardous waste disposal, as well as asbestos and lead abatement, are included in this study.

12. All Class A waste is assumed to be disposed of at Energy*Solutions*' facility in Clive, Utah, in accordance with the existing Life-of-Plant Disposal Agreement between Energy*Solutions* and Southern California Edison, dated January 18, 2014 (Ref. No. 7). The following 2014 disposal rates will be applied:

    Demolition Debris and Soil - $5[illegible]97/Cubic Foot plus 5% Utah taxes
    Oversized Debris - $111.31/Cubic Foot plus 5% Utah taxes
    Containerized Waste Facility - $21[illegible].50/Cubic Foot plus 12% Utah taxes
    Large Components - $289.87/Cubic Foot plus 5% Utah taxes
    Cask Shipment - $4[illegible].059/Cask plus 12% Utah taxes

    Class A waste includes Dry Active Waste (DAW) arising from the disposal of contaminated protective clothing and health physics supplies.

13. Class B, C, and GTCC waste disposal costs are based on recent quotes for disposal of activated hardware and resins at the WCS facility. All resins and filter waste is assumed to be Class B.

14. Shipping costs for the Class B and C waste are based on a distance of 1,079 miles one way from SONGS to the WCS site.

15. GTCC is not subject to the same storage and security requirements as spent fuel and therefore is not required to be stored on the ISFSI pad. But for purposes of this estimate and to facilitate decommissioning, GTCC waste generated from the segmentation of the reactor internals is assumed to be packaged in Dry Storage Canisters (DSCs) and placed in Advanced Horizontal Storage Modules (AHSMs) in the ISFSI to await final disposition at a DOE repository.

16. It is assumed that a total of six DSCs per unit will be required for GTCC waste.

17. Reactor vessel and internals curie estimates were derived from the values for the Reference PWR vessel and internals in NUREG/CR-0130 (Ref. No. 5). These values were adjusted for decay period.

18. The Energy*Solutions* site-specific classification of radioactive wastes for the SONGS Plant identified that the spent fuel assemblies and two components within the reactor vessel (the Core Shroud Assembly and the Lower Core Grid Plate) will exceed Class C limitations.

19. The spent fuel shipments are based upon best current information and assumptions, as qualified and described elsewhere in this study, including in Section 2.2. above.

20. Spent fuel will remain in the spent fuel pool for six years before being transferred to the ISFSI.

21. The costs for ISFSI construction and transfer of spent fuel from Units 2 & 3 to dry storage were developed by SCE and furnished to Energy*Solutions*. Following completion of spent fuel transfers to dry storage the cost of maintenance and operation of the ISFSI is distributed between Units 1, 2 and 3 based on the relative percentages of spent fuel assemblies in storage. The percentages are 10, 45, and 45 for Units 1, 2, and 3, respectively. The exception is that all property taxes are solely the liability of Units 2 & 3. Following completion of SNF and 4 – Dry Storage Only Units 1, 2, and 3, all ISFSI maintenance and operating costs are assigned to Units 2 & 3 until the ISFSI D&D. During ISFSI D&D costs are distributed to all three units in the same percentages of 10, 45, and 45.

22. DOE has not committed to accept SCE's canistered spent fuel, which DOE classifies as non-standard. But for purposes of this estimate, it is assumed that an SCE-funded dry storage facility will not be necessary.

23. Costs for ISFSI demolition are included in this estimate. SCE assumes that portions of the ASR-1 concrete will be activated.

24. Energy*Solutions* has assumed that the 10 CFR Part 50 license will be maintained until DOE has taken possession of the spent fuel.

25. SCE's annual ISFSI insurance premiums of $302,000 are assumed to be incurred until all fuel shipments have been completed and the structure is no longer in use.

26. SCE's Emergency Preparedness (FEMA) fees of $500,000 per year and California Office of Emergency Services fees of $2,800,000 per year are applied until the spent fuel pool is empty. These fees were supplied by SCE.

27. SCE's current annual property taxes are assumed to be reduced to a constant $1,500,000 per year. The property taxes are a license termination expense until the completion of decommissioning, and then a spent fuel management expense until completion of the ISFSI D&D.

28. Energy*Solutions* has included the annual NRC 10 CFR 171.15(c)(2) fees, for reactors in decommissioning of $231,000/yr per unit until decommissioning is completed as a license termination expense. Following completion of decommissioning, this expense is continued as a spent fuel management cost for maintenance of the 10 CFR Part 50 license.

29. Energy*Solutions* has included Environmental Permits and Fees of $1,900,000 per year as supplied by SCE.

30. Energy*Solutions* has included NRC inspection fees during each decommissioning period based on the type and level of activities being performed.

31. SONGS annual insurance premiums, in 2014 dollars as supplied by SCE, are as follows:

    Nuclear Property Primary - $4,878,099
    Nuclear Liability - $1,151,075
    Additional Liability, Non-Nuclear - $2,576,219
    Workers' Compensation - $180,335
    Property Insurance - $353,286

    The premium amounts have been adjusted by Energy*Solutions* in accordance with information furnished by SCE to meet the requirements of each period.

32. Site operating expenses expected to be incurred during decommissioning and spent fuel management are included in the estimate. These costs include materials and services, utilities (water, gas, phone), telecommunications equipment, non-process computers, personal computers and tools and equipment. These costs were calculated based on information provided by SCE and adjusted by Energy*Solutions* to match the requirements of each period, based on staffing levels.

33. Site Lease and Easement expenses of $2,300,000 per year until the Mesa lease is terminated are included in the estimate. Following termination of the Mesa lease the site lease and easement expenses are reduced to $299,920 per year. These costs are based on information provided by SCE.

34. Utility staff positions and average direct burdened salary data in 2014 dollars were supplied by SCE.

35. Severance costs for those employees terminated as a result of SONGS decommissioning, including those costs required under California law are included in the estimate. Severance costs for Reductions-in-Force (RIFs) that occurred immediately after shutdown, and during the course of spent fuel management and decommissioning are assumed to be a site restoration expense and are included in the estimate.

36. Severance costs per employee were provided by SCE.

37. DGC staff salaries, including overhead and profit, were determined by Energy*Solutions* and represent Energy*Solutions*' standard assumptions for these rates.

38. The professional personnel used for the planning and preparation activities, and DGC personnel, are assumed to be paid per diem at the rate of $204/day, based on per diem rates from U.S. General Services Administration (GSA) for Orange County, California.

39. Craft labor rates were taken from the CA Union Craft Rate Sheet, dated January 9, 2014. Craft labor rates for disciplines not provided in the rate sheet have been taken from the 2014 RS Means Labor Rates for the Construction Industry (Ref. No. 10), for Anaheim, CA. Since the skilled laborers are assumed to be supplied by the local union hall, they will not be paid per diem.

40. The security guard force included in this estimate has been sized in accordance with the current Design Basis Threat assessment.

41. This study follows the occupational exposure principle of As Low As Reasonably Achievable (ALARA) through the use of productivity loss factors that incorporate such items as the use of respiratory protection and personnel protective clothing. These factors increase the work duration and cost.

42. The costs of all required safety analyses and safety measures for the protection of the general public, the environment, and decommissioning workers are included in the cost estimates. This reflects the requirements of:

10 CFR 20	Standards for Protection Against Radiation
10 CFR 50	Domestic Licensing of Production and Utilization Facilities
10 CFR 61	Licensing Requirements for Land Disposal of Radioactive Waste
10 CFR 71	Packaging of Radioactive Material for Transport
10 CFR 72	Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste
29 CFR 1910	Occupational Safety and Health Standards
49 CFR 170-189	Department of Transportation Regulations Governing the Transport of Hazardous Materials
Reg. Guide 1.159	Assuring the Availability of Funds for Decommissioning Nuclear Reactors

43. Activity labor costs do not include any allowance for delays between activities, nor is there any cost allowance for craft labor retained on site while waiting for work to become available.

6.0 STUDY RESULTS

This study analyzes the following technical approach to decommissioning as defined by SCE:

- Prompt 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 MPCs at an on-site ISFSI.
- A dry transfer facility will not be necessary.
- Decommissioning will be performed by SCE and a DGC.
- LOP Disposal Rates are used for Class A LLRW.
- WCS Texas Disposal Rates are used for Class B and C LLRW.
- DOE begins accepting spent fuel from the industry in 2024.

Spent Fuel Shipping Schedule

The spent fuel shipping schedule is provided in Appendix B. Spent fuel shipments from the industry to DOE will begin in 2024. The spent fuel shipment schedules are based upon best current information and assumptions, as qualified and described elsewhere in this study, including in Section 2.2 above.

Cost and Schedule

Figure 6-1 is a summary project schedule. A detailed schedule is provided in Appendix C. Table 6-1 summarizes the period durations and total costs, including contingency, for License Termination, Spent Fuel, and Site Restoration activities. A detailed cost table is provided in Appendix D, and a table of annual expenditures is provided in Appendix E.

Project Staffing

This scenario is based on the assumption that decommissioning will be performed by an experienced and qualified DGC, with oversight and management of the decommissioning operations performed by the Utility staff. Utility staffing levels, by organizational department and function, for each period are provided in Table 6-2. The DGC staffing levels, by organizational department and function, for each period are provided in Table 6-3.

Waste Disposal Volumes

Waste disposal is a significant element of the decommissioning project. The estimated cubic feet of waste are summarized as follows:

Waste Class	Unit 2	Unit 3	Total
Class A	1,832,961	1,819,680	3,652,640
Class B	7,600	7,600	15,199
Class C	4,095	4,095	8,191
GTCC	941	941	1,882

Waste disposal volumes and costs, itemized by packaging, transportation, surcharges and disposal costs by waste class and facility, are provided in Table 6-4. The waste disposal costs provided in Table 6-4 do not include contingency.

Figure 6-1
Summary Schedule

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

Task Name	Start	Finish
Post-Shutdown Spent Fuel Management	06/07/2013	09/08/2051
Spent Fuel Shipping Complete - Unit 1	12/31/2035	12/31/2035
Spent Fuel Shipping Complete - Units 2 & 3	12/31/2049	12/31/2049
SNF Pd 1 - Spent Fuel Management Transition	06/07/2013	12/31/2013
SNF Pd 2 - Spent Fuel Transfer to Dry Storage	1/1/2014	06/01/2019
SNF Pd 3 - Dry Storage During Decommissioning - Units 1, 2 and 3	06/01/2019	12/05/2031
SNF Pd 4 - Dry Storage Only - Units 1, 2 and 3	12/05/2031	12/31/2035
SNF Pd 5 - Dry Storage Only - Units 2 and 3	12/31/2035	12/31/2049
SNF D&D Pd 1 - ISFSI D&D Planning	12/31/2049	05/06/2050
SNF D&D Pd 2 - ISFSI D&D	05/06/2050	09/08/2051
Part 50 License Termination	06/07/2013	12/24/2032
Announcement of Cessation of Operations (June 7, 2013)	06/07/2013	06/07/2013
Decon Pd 1 - Transition to Decommissioning	06/07/2013	12/31/2013
Decon Pd 2 - Decommissioning Planning and Site Modifications	1/1/2014	06/30/20
Decon Pd 3 - Decommissioning Preparations and Reactor Internals Segmentation	06/30/2015	06/01/20
Decon Pd 4 - Plant Systems and Large Component Removal	06/01/2019	0 22
Decon Pd 5 - Building Decontamination	09/24/2022	7/13/20
Decon Pd 6 - License Termination During Demolition	07/13/2024	24/2032
Site Restoration	06/07/201	12/ 2051
SR Pd 1 - Transition to Site Restoration	06/0 2013	/30/2015
SR Pd 2 - Building Demolition During Decommissioning	6/3 2015	07/11/2017
SR Pd 3 - Subsurface Demolition Engineering and Permitting	10/ 2019	07/13/2024
SR Pd 4 - Building Demolition to 3 Feet Below Grade	07/13/ 24	10/14/2028
SR Pd 5 - Subgrade Structure Removal Below -3 Feet	10/14/2028	12/05/2031
SR Pd 6 - Final Site Restoration and Lease Termination	06/2050	12/15/2051
Final Easement Termination	12/15/2051	12/15/2051

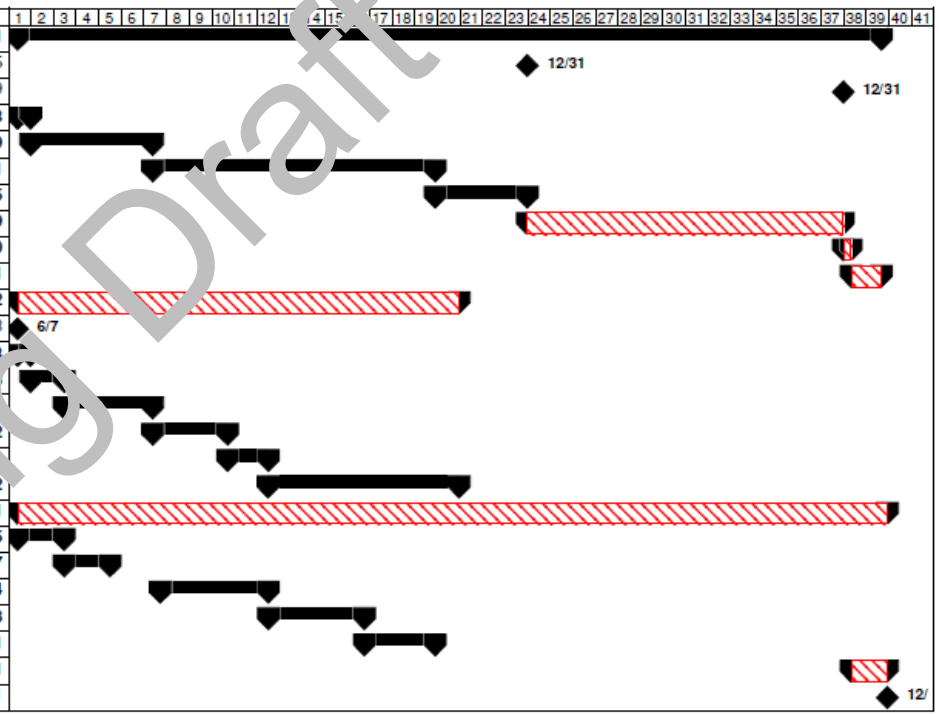


Table 6-1[2]
Cost and Schedule Summary
(2014 Dollars in Thousands)

Period No.	Period Description	Start	End	Years	Unit 2 Cost	Unit 3 Cost	Total Cost
License Termination (50.75(c))							
Decon Pd 1	Transition to Decommissioning	6/7/2013	12/31/2013	0.56	$25,749	$26,566	$52,315
Decon Pd 2	Decommissioning Planning and Site Modifications	1/1/2014	6/30/2015	1.49	$118,709	$122,430	$241,140
Decon Pd 3	Decommissioning Preparations and Reactor Internals Segmentation	6/30/2015	6/1/2019	3.92	$262,210	$276,799	$539,009
Decon Pd 4	Plant Systems and Large Component Removal	6/1/2019	9/24/2022	3.31	$39[illegible]029	$412,475	$804,504
Decon Pd 5	Building Decontamination	9/24/2022	7/13/2024	1.80	$[illegible]2,447	$216,659	$429,106
Decon Pd 6	License Termination During Demolition	7/13/2024	12/24/2032	8.44	$23,[illegible]85	$23,085	$46,171
Account Total				**[illegible]52**	**$1,034,230**	**$1,078,016**	**$2,112,246**
Spent Fuel (50.54(bb))							
SNF Pd 1	Spent Fuel Management Transition	6/7/2013	12/31/2013	0.56	$63,891	$66,105	$129,997
SNF Pd 2	Spent Fuel Transfer to Dry Storage	1/1/2014	6/[illegible]2019	5.41	$344,629	$372,193	$716,822
SNF Pd 3	Dry Storage During Decommissioning - Units 1, 2 and 3	6/1/2019	12/[illegible]2031	12.51	$61,425	$61,425	$122,849
SNF Pd 4	Dry Storage Only - Units 1, 2 and 3	12/5/[illegible]031	12/31/2035	4.07	$29,383	$29,383	$58,765
SNF Pd 5	Dry Storage Only - Units 2 and 3	2/[illegible]/2035	12/31/2049	14.00	$107,326	$107,326	$214,653
SNF D&D Pd 1	ISFSI License Termination	12/31/2049	5/6/2050	0.34	$1,260	$1,260	$2,520
SNF D&D Pd 2	ISFSI Demolition	5/6/2050	9/8/2051	1.34	$15,295	$15,295	$30,590
Account Total				**38.23**	**$623,209**	**$652,987**	**$1,276,196**
Site Restoration							
SR Pd 1	Transition to Site Restoration	6/7/2013	6/30/2015	2.06	$64,280	$66,210	$130,489
SR Pd 2	Building Demolition During Decommissioning	6/30/2015	7/11/2017	2.03	$13,003	$37,242	$50,245
SR Pd 3	Subsurface Demolition Engineering and Permitting	10/1/2019	7/13/2024	4.78	$15,593	$22,319	$37,912
SR Pd 4	Building Demolition to 3 Feet Below Grade	7/13/2024	10/14/2028	4.25	$124,953	$134,113	$259,066
SR Pd 5	Subgrade Structure Removal Below - 3 Feet	10/14/2028	12/5/2031	3.14	$171,987	$269,560	$441,547
SR Pd 6	Final Site Restoration and Lease Termination	5/6/2050	12/15/2051	1.60	$33,482	$70,064	$103,545
Account Total				**17.86**	**$423,297**	**$599,507**	**$1,022,804**
Grand Total					**$2,080,735**	**$2,330,511**	**$4,411,246**

[2] Rows and columns may not add correctly due to rounding.

Table 6-2
Utility Staff Levels

License Termination – 50.75(c) Utility Staff

Department	Decon Pd 1	Decon Pd 2	Decon Pd 3	Decon Pd 4	Decon Pd 5	Decon Pd 6
Decommissioning	0	21	21	25	18	0
Engineering	0	49	14	14	12	0
Maintenance and Work Control	0	38	10	10	3	0
Operations	0	15	7	7	0	0
Oversight and Nuclear Safety	0	7	2	2	1	0
Radiation Protection and Chemistry	0	27	26	31	26	0
Regulatory and Emergency Planning	0	10	4	4	[illegible]	0.5
Safety and Human Performance	0	13	7	[illegible]	7	0
Security Admin	0	6	6	6	6	0
Security Guard Force	0	12	12	12	12	0
Site Management and Administration	0	13	[illegible]	13	9	1
Period Totals	**0**	**211**	**122**	**131**	**98**	**1.5**

Spent Fuel - 50.54(bb) Utility Staff

Department	SNF Pd 1	SNF Pd 2	SNF Pd 3	SNF Pd 4	SNF Pd 5	SNF D&D Pd 1	SNF D&D Pd 2
Spent Fuel Shipping	0	0	0	2	2	0	0
Decommissioning	0	[illegible]	0	0	0	1	1
Engineering	0	[illegible]	1	1	1	0	1
Maintenance and Work Control	0	31	0	0	0	0	0
Operations	0	4[illegible]	1	1	1	0	0
Oversight and Nuclear Safety	0	1	0.25	0.25	0.25	0	0
Radiation Protection and Chemistry	0	6	4	4	4	1	2
Regulatory and Emergency Planning	0	0	0	0	0	1	1
Security Admin	0	14	10	8	8	1	1
Security Guard Force	0	178	35	35	35	5	5
Site Management and Administration	0	0	0	0	0	1	1
Period Total	**0**	**276**	**51.25**	**54.25**	**54.25**	**10**	**12**

Site Restoration - Utility Staff

Department	SR Pd 1	SR Pd 2	SR Pd 3	SR Pd 4	SR Pd 5	SR Pd 6
Decommissioning	0	2	0	5	4	2
Engineering	0	1	0	2	1	0
Maintenance and Work Control	0	1	0	2	2	2
Regulatory and Emergency Planning	0	1	0	0	0	0
Safety and Human Performance	0	1	0	2	1	1
Security Admin	0	0	0	1	1	0
Security Guard Force	0	0	0	5	5	0
Site Management and Administration	0	0	0	4	3	3
Period Totals	**0**	**6**	**0**	**21**	**17**	**8**

Table 6-3
DGC Staff Levels

License Termination – 50.75(c) DGC Staff

Department	Decon Pd 3	Decon Pd 4	Decon Pd 5	Decon Pd 6
Administration	9	17	17	0
Engineering	15	29	14	0
Health Physics	16	73	73	2
Management	3	3	3	0
Quality Assurance	2	5	4	0
Waste Operations	7	16	16	0
Period Totals	**52**	**143**	**127**	**2**

Spent Fuel - 50.54(bb) - DGC Staff

Department	SNF D&D Pd 2
Administration	1
Engineering	2
Health Physics	3
Management	1
Quality Assurance	1
Waste Operations	4
Period Totals	**12**

Site Restoration DGC Staff

Department	SR Pd 1	SR Pd 2	SR Pd 3	SR Pd 4	SR Pd 5	SR Pd 6
Administration	0	0	0	10	5	4
Engineering	0	0	0	13	11	5
Health Physics	0	0	0	3	0	0
Management	0	0	0	2	2	1
Quality Assurance	0	0	0	2	1	0
Waste Operations	0	0	0	11	7	7
Period Totals	**0**	**0**	**0**	**41**	**26**	**17**

Table 6-4
Waste Disposal Volumes
(Cost Excludes Contingency - 2014 Dollars)

Facility and Waste Class	Waste Weight (LBs)	Waste Volume (CF)	Burial Volume (CF)	Packaging Cost	Transportation Cost	Base Burial Cost	Total Disposal Cost
Class B and C Facility							
Class B	1,132,323	6,696	15,199	$1,[illegible]08[illegible]	$6,127,237	$69,176,733	$76,446,052
Class C	407,380	1,546	8,191	$1,966,[illegible]08	$25,434,293	$37,278,924	$64,679,225
GTCC	92,861	190	1,882	$186,9[illegible]1	$1,600,000	$36,929,505	$38,716,445
	1,632,564	**8,431**	**25,272**	**$3,[illegible],031**	**$33,161,530**	**$143,385,162**	**$179,841,722**
Energy*Solutions*							
Class A – Debris	200,625,034	3,233,685	3,3[illegible]2,229	$3,627,158	$13,139,593	$201,610,494	$218,377,245
Class A – Oversize	9,967,521	146,943	18[illegible]730	$178,394	$746,938	$21,590,425	$22,515,757
Class A – Containerized Waste	1,053,914	12,287	[illegible]6,303	$378,240	$346,973	$3,916,551	$4,641,763
Class A – Large Component	11,480,200	108,80[illegible]	136,373	$6,012,922	$66,307,299	$41,507,108	$113,827,330
Class A – Mixed Waste	62,643	3,012	3,012	$64,654	$11,856	$763,072	$839,582
	223,189,312	**3,[illegible]**	**3,652,648**	**$10,261,367**	**$80,552,658**	**$269,387,651**	**$360,201,676**
Other							
Out of State Class III Landfill	1,916,779,290	2[illegible]216,569	29,488,912	$0	$139,358,542	$42,190,516	$181,549,058
Scrap Metal Recycler	2,121,[illegible]72,5[illegible]0	[illegible]2,928,042	32,645,732	$0	$9,973,271	$0	$9,973,271
	4,038,7[illegible]1,80[illegible]	**[illegible]3,144,611**	**62,134,644**	**$0**	**$149,331,813**	**$42,190,516**	**$191,522,329**
Grand Total	**4,2[illegible]3,573,[illegible]6**	**41,657,836**	**65,812,564**	**$13,556,398**	**$263,046,001**	**$454,963,328**	**$731,565,727**

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Appendix A

List of Systems and Structures

SONGS Plant System and Structure List

Common

Type	System Name or Description
Non	Not Used
Struct	Administration Building (K-40/50)
Struct	AWS Building
Struct	Building L-50
Struct	Gunite Slope Protection
Struct	High Flow Make-Up Demineralizer Area
Struct	ISFSI Support Structures
Struct	Maintenance Building 1 (B-43/B-44)
Struct	Maintenance Building 2 (B-49/B-50)
Struct	Maintenance Building 4 (B-64/B-65)
Struct	Maintenance Building 5 (B-62/B-63)
Struct	Mesa Buildings
Struct	Not Used
Struct	Outage Control Center Building
Struct	REMS Staging Pad
Struct	Seawall - Units 2 & 3
Struct	Security Access Building (A-80, 81, 82)
Struct	Service Building (K-10, 20, 30)
Struct	South Security Processing Facility (K-70)
Struct	South Yard Facility Buildings (T-10, 20, [illegible] and Haz Mat.)
Struct	Staging Warehouse Building
Ess	Auxilary Control Systems - Unit 2
Ess	Fuel Handling Building Systems - Unit 2
Ess	Radwaste Systems - Unit 2
Non	Condenstate Storage System - Unit 2
Non	Containment Building Systems - Unit 2
Non	Diesel Generator Systems - Unit 2
Non	Full Flow Area Systems - Unit 2
Non	Intake Systems - Unit 2
Non	Penetration Building Systems - Unit 2
Non	Safety Equipment Building Systems - Unit 2
Non	Turbine Bldg Equip to 9 ft - Unit 2
Struct	Condensate Storage Area - Unit 2
Struct	Containment Building - Unit 2
Struct	Control Building - Unit 2
Struct	Diesel Generator Building - Unit 2
Struct	Fuel Handling Building - Unit 2
Struct	Full Flow Building - Unit 2
Struct	Intake Structure - Unit 2
Struct	Penetration Building - Unit 2
Struct	Radwaste Building - Unit 2
Struct	Safety Equipment Building - Unit 2
Struct	Tunnels - Unit 2
Struct	Turbine Building - Unit 2
Ess	Auxilary Control Systems - Unit 3
Ess	Fuel Handling Building Systems - Unit 3

SONGS Plant System and Structure List

Unit 3

Type	System Name or Description
Ess	Radwaste Systems - Unit 3
Non	Condenstate Storage Systems - Unit 3
Non	Containment Building Systems - Unit 3
Non	Diesel Generator Systems - Unit 3
Non	Full Flow Areas Systems - Unit 3
Non	Intake Systems - Unit 3
Non	Penetration Building Systems - Unit 3
Non	Safety Equipment Building Systems - Unit 3
Non	Turbine Bldg Equip to 9 ft - Unit 3
Non	Turbine Generator to 63 ft - Unit 3
Struct	Condensate Storage Tank Area - Unit 3
Struct	Containment Building - Unit 3
Struct	Control Building - Unit 3
Struct	Diesel Generator Building - Unit 3
Struct	Fuel Handling Building - Unit 3
Struct	Full Flow Building - Unit 3
Struct	Intake Structure - Unit 3
Struct	Penetration Building - Unit 3
Struct	Radwaste Building - Unit 3
Struct	Safety Equipment Building - Unit 3
Struct	Tunnels - Unit 3
Struct	Turbine Building - Unit 3

Appendix B

Spent Fuel Shipping Schedule

SONGS Unit 2 & Unit 3
Spent Fuel Shipping Schedule
2024 DOE Acceptance

	On-Site Inventory (Beginning of Year)				On-Site Transfers (During Year)		Off-Site Transfers (During Year)			
Year	Units 2 & 3 Fuel Assemblies in Wet Storage	Units 2 & 3 Fuel Assemblies in Dry Storage	Units 2 & 3 Fuel Assemblies in On-Site Storage	Units 2 & 3 Canisters in ISFSI	Unit 2 & 3 Fuel Assemblies Transferred to ISFSI	Unit 2 & 3 Fuel Canisters Transferred to ISFSI	Unit 2 Assemblies Transferred to DOE	Unit 3 Assemblies Transferred to DOE	Units 2 & 3 Assemblies Transferred to DOE	Units 2 & 3 Canisters Transferred to DOE
2014	2668	792	3460	33	0	0	0	0	0	0
2015	2668	792	3460	33	0	0	0	0	0	0
2016	2668	792	3460	33	0	0	0	0	0	0
2017	2668	792	3460	33	768	24	0	0	0	0
2018	1900	1560	3460	57	1,536	48	0		0	0
2019	364	3096	3460	105	364	13	0	0	0	0
2020	0	3460	3460	118	0	0	0	0	0	0
2021	0	3460	3460	118	0	0	0		0	0
2022	0	3460	3460	118	0	0	0	0	0	0
2023	0	3460	3460	118	0	0		0	0	0
2024	0	3460	3460	118	0	0	0	0	0	0
2025	0	3460	3460	118	0	0		0	0	0
2026	0	3460	3460	118	0	0	0	0	0	0
2027	0	3460	3460	118	0	0		0	0	0
2028	0	3460	3460	118	0	0	0	0	0	0
2029	0	3460	3460	118	0	0	0	0	0	0
2030	0	3460	3460	118	0		48	48	96	4
2031	0	3364	3364	114	0	0	192	96	288	12
2032	0	3076	3076	102	0		120	120	240	10
2033	0	2836	2836	92		0	0	96	96	4
2034	0	2740	2740	88		0	112	120	232	8
2035	0	2508	2508	80	0	0	96	96	192	6
2036	0	2316	2316			0	128	96	224	7
2037	0	2092	2092	67	0	0	0	0	0	0
2038	0	2092	2092	67	0	0	96	128	224	7
2039	0	1868	1868	60	0	0	96	96	192	6
2040	0	1676	1676	54	0	0	96	96	192	6
2041	0	1484	1484	48	0	0	0	0	0	0
2042	0	1484	1484	48	0	0	96	96	192	6
2043	0	1292	1292	42	0	0	96	96	192	6
2044	0	1100	1100	36	0	0	96	96	192	6
2045	0	908	908	30	0	0	128	96	224	7
2046	0	684	684	23	0	0	96	128	224	7
2047	0	460	460	16	0	0	96	230	326	11
2048	0	134	134	5	0	0	0	0	0	0
2049	0	134	134	5	0	0	134	0	134	5
2050	0	0	0	0	0	0	0	0	0	0

Appendix C

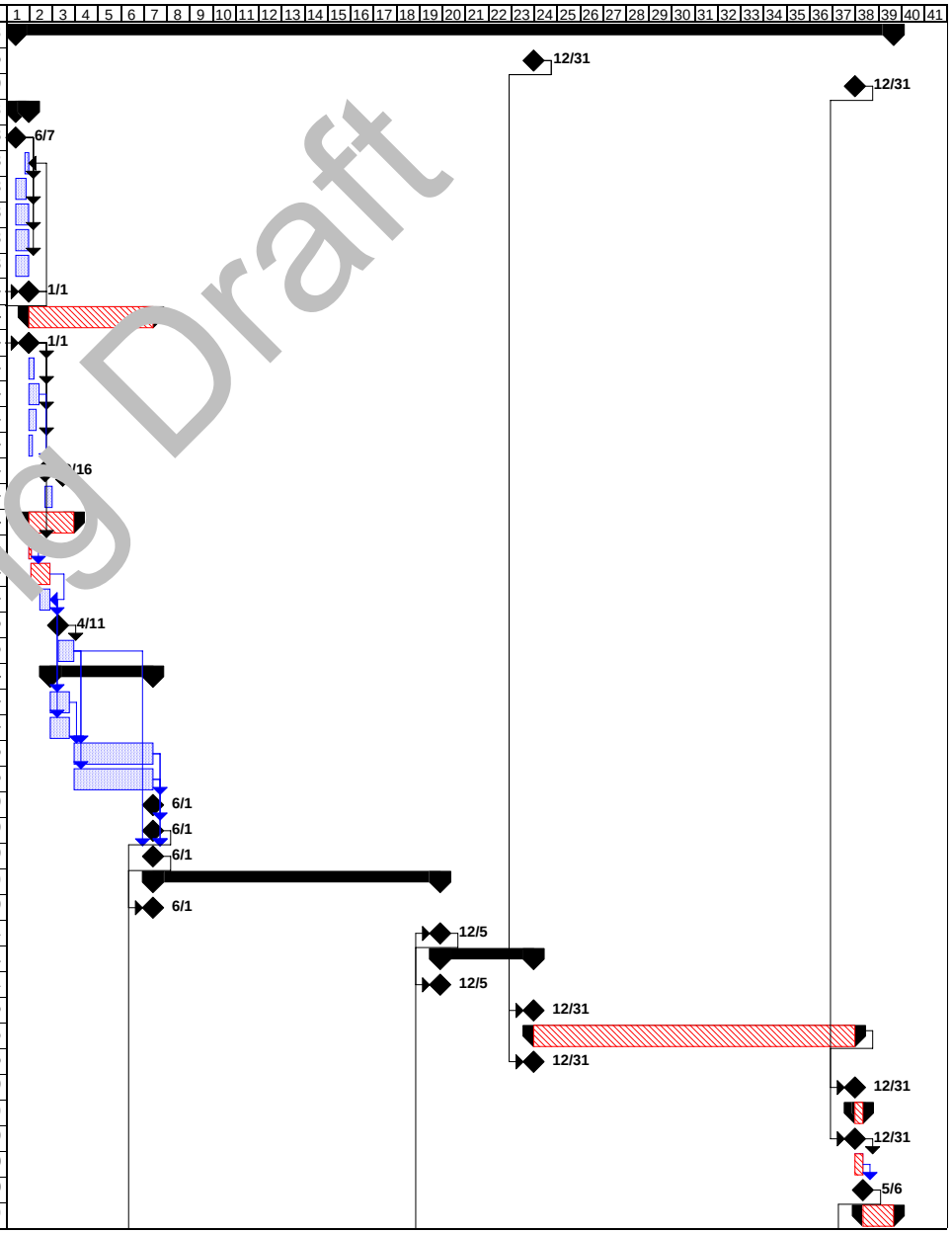
Detailed Project Schedule

SONGS 2 & 3

Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
1	**Post-Shutdown Spent Fuel Management**	**9982 days**	**06/07/2013**
2	Spent Fuel Shipping Complete - Unit 1	0 days	12/31/2035
3	Spent Fuel Shipping Complete - Units 2 & 3	0 days	12/31/2049
4	**SNF Pd 1 - Spent Fuel Management Transition**	**149 days**	**06/07/2013**
5	SNF Pd 1 Begins	0 days	06/07/2013
6	Security Enhancements	45 days	10/31/2013
7	Design and Fabricate Spent Fuel Canisters	120 days	06/07/2013
8	Post Fukushima Modifications - Unit 2	148 days	06/07/2013
9	Post Fukushima Modifications - Unit 3	148 days	06/07/2013
10	Cyber Security Modifications	148 days	06/07/2013
11	SNF Pd 1 Ends	0 days	01/01/2014
12	**SNF Pd 2 - Spent Fuel Transfer to Dry Storage**	**1413 days**	**1/1/2014**
13	SNF Pd 2 Begins	0 days	01/01/2014
14	Security Enhancements	60 days	01/02/2014
15	Prepare Irradiated Fuel Management Plan	118 days	01/02/2014
16	Decay Heat Analysis	85 days	01/02/2014
17	Zirconium Fire and Shine Analysis	42 days	01/02/2014
18	Issue Irradiated Fuel Management Plan	0 days	09/16/2014
19	NRC Review of Irradiated Fuel Management Plan	82 days	09/17/2014
20	**ISFSI Expansion**	**513 days**	**01/02/2014**
21	Select Dry Storage System Canister Design and Vendor	30 days	01/0
22	ISFSI Pad Study	220 days	02 3/2014
23	Design ISFSI Expansion	120 days	06 2014
24	ISFSI Permit Approved By California Coastal Commission	0 days	04/11/ 15
25	Construct ISFSI Expansion	180 d s	0 4/2015
26	**Canister Purchase, Fabrication and Fuel Tranfer**	**1 d**	**12/0 /2014**
27	Purchase Spent Fuel Canisters and AHSMs - Unit 2	220 s	12/09/2014
28	Purchase Spent Fuel Canisters and AHSMs - Unit 3	220 da	12/09/2014
29	Load Spent Fuel Canisters and Transfer to ISFSI - Unit 2	00 days	12/22/2015
30	Load Spent Fuel Canisters and Transfer to ISFSI - Unit 3	90 days	12/22/2015
31	Unit 2 Spent Fuel Pool Empty	0 days	06/01/2019
32	Unit 3 Spent Fuel Pool Empty	0 days	06/01/2019
33	SNF Pd 2 Ends	0 days	06/01/2019
34	**SNF Pd 3 - Dry Storage During Decommissioning - Units 1, 2 nd 3**	**3265 days**	**06/01/2019**
35	SNF Pd 3 Begins	0 days	06/01/2019
36	SNF Pd 3 Ends	0 days	12/05/2031
37	**SNF Pd 4 - Dry Storage Only - Units 1, 2 and 3**	**1061 days**	**12/05/2031**
38	SNF Pd 4 Begins	0 days	12/05/2031
39	SNF Pd 4 Ends	0 days	12/31/2035
40	**SNF Pd 5 - Dry Storage Only - Units 2 and 3**	**3654 days**	**12/31/2035**
41	SNF Pd 5 Begins	0 days	12/31/2035
42	SNF Pd 5 Ends	0 days	12/31/2049
43	**SNF D&D Pd 1 - ISFSI D&D Planning**	**90 days**	**12/31/2049**
44	SNF D&D Pd 1 Begins	0 days	12/31/2049
45	Preparation and NRC Review of License Termination Plan	90 days	01/01/2050
46	SNF D&D Pd 1 Ends	0 days	05/06/2050
47	**SNF D&D Pd 2 - ISFSI D&D**	**350 days**	**05/06/2050**

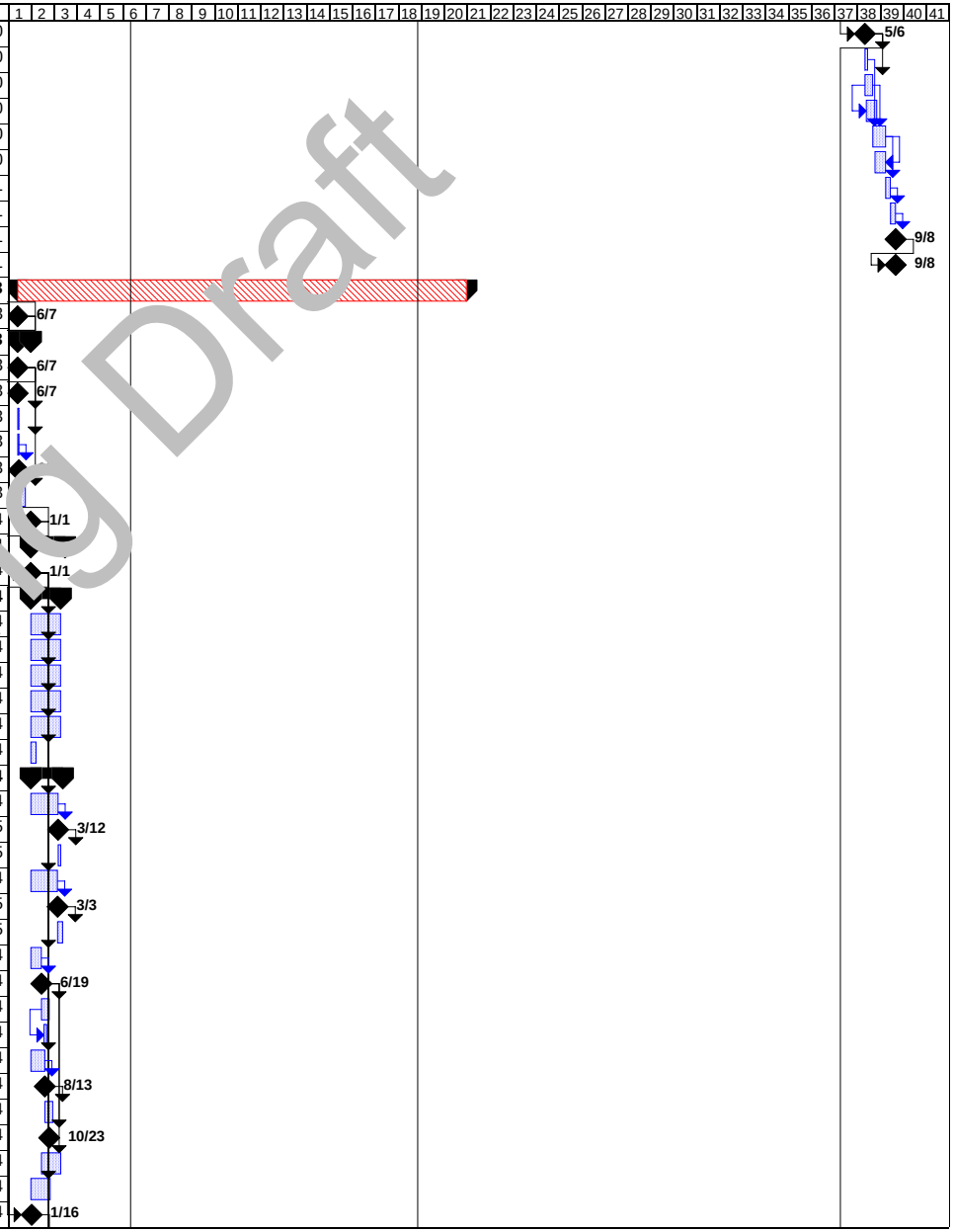


SONGS 2 & 3

Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
48	SNF D&D Pd 2 Begins	0 days	05/06/2050
49	Install GARDIAN Bulk Assay System	30 days	05/07/2050
50	Decon AHSMs	90 days	05/07/2050
51	Final Status Survey of ISFSI	120 days	05/28/2050
52	Clean Demolition of ISFSI AHSMs and Pad	145 days	09/10/2050
53	Clean Demolition of ISFSI Support Structures	120 days	10/15/2050
54	Restore ISFSI Site	55 days	04/01/2051
55	Preparation of Final Report on Decommissioning and NRC Review	60 days	06/17/2051
56	SNF D&D Pd 2 Ends - License Termination Complete	0 days	09/08/2051
57	Post-Shutdown Spent Fuel Management Complete	0 days	09/08/2051
58	**Part 50 License Termination**	**5102 days**	**06/07/2013**
59	Announcement of Cessation of Operations (June 7, 2013)	0 days	06/07/2013
60	**Decon Pd 1 - Transition to Decommissioning**	**149 days**	**06/07/2013**
61	Decon Pd 1 Begins	0 days	06/07/2013
62	Certification of Permanent Cessation Submitted to NRC (June 12, 2013)	0 days	06/07/2013
63	Defuel Unit 3 Reactor	15 days	06/07/2013
64	Defuel Unit 2 Reactor	15 days	06/07/2013
65	Notification of Permanent Fuel Removal (July 23, 2013)	0 days	06/27/2013
66	Disposition of Legacy Wastes	60 days	07/19/2013
67	Decon Pd 1 Ends	0 days	01/01/2014
68	**Decon Pd 2 - Decommissioning Planning and Site Modifications**	**389 days**	**1/**
69	Decon Pd 2 Begins	0 wks	01/ 1/2014
70	**Preparation of Decommissioning License Documents**	**340 days**	**01/ /2014**
71	Develop Certified Fuel Handler Program	340 days	01/02/ 14
72	Prepare Post-Shutdown QA Plan	340 d ys	01/ 2/2014
73	Prepare Post-Shutdown Security Plan	0 d ys	01/0 /2014
74	Prepare Post-Shutdown Fire Protection Plan	340 ys	01/02/2014
75	Prepare Defueled Radiation Protection Manual	340 da	01/02/2014
76	Prepare Preliminary Defueled Technical Specifications	63 days	01/02/2014
77	**NRC Deliverables**	**36 days**	**01/02/2014**
78	Prepare Defueled Safety Analysis Report (DSAR)	311 days	01/02/2014
79	Submit DSAR to NRC	0 days	03/12/2015
80	Implement Technical Specification Modifications	30 days	03/13/2015
81	Prepare Post-Shutdown Emergency Preparedness Plan	304 days	01/02/2014
82	Submit Emergency Plan to NRC	0 days	03/03/2015
83	NRC Review of Emergency Plan	60 days	03/04/2015
84	Prepare Post-Shutdown Decommissioning Activities Repor DAR)	121 days	01/02/2014
85	Submit PSDAR to NRC	0 days	06/19/2014
86	NRC Review of PSDAR	90 days	06/20/2014
87	Public Meeting on PSDAR	30 days	08/01/2014
88	Prepare Decommissioning Cost Estimate (DCE)	160 days	01/02/2014
89	Submit DCE to NRC	0 days	08/13/2014
90	NRC Review of Decommissioning Cost Estimate	90 days	08/14/2014
91	Commencement of Major Decommisisoning Activities Allowable	0 days	10/23/2014
92	Respond to NRC quesitons on PSDAR	220 days	06/20/2014
93	Disposition of Legacy Wastes	220 days	01/02/2014
94	Contract Award for Historic Site Assessment and Site Characterization	0 wks	01/16/2014

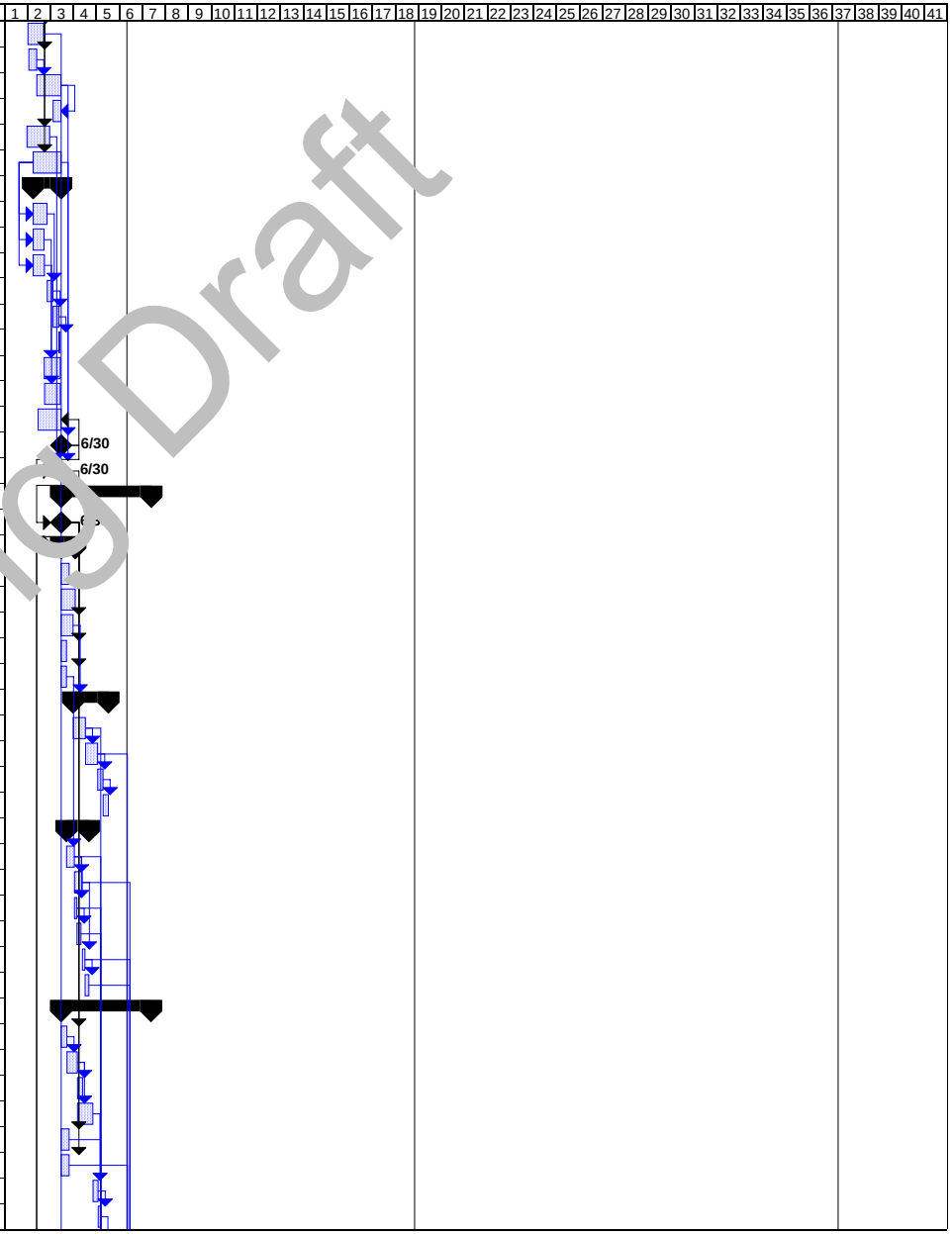


SONGS 2 & 3

Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
95	Perform Historic Site Assessment and Site Characterization	180 days	01/17/2014
96	Planning and Design For Cold and Dark	90 days	02/01/2014
97	Implement Cold and Dark (Repower Site)	275 days	06/07/2014
98	Install 12kV Service Line to Power Temporary Power Ring	90 days	02/21/2015
99	Drain and De-Energize Non-Essential Systems (DEC Process)	260 days	01/02/2014
100	Select Decommissioning General Contractor (DGC)	318 days	04/11/2014
101	**Spent Fuel Pool Isolation**	**318 days**	**04/11/2014**
102	Design Spent Fuel Pool Support System Modifications	160 days	04/11/2014
103	Design Control Room Relocation	125 days	04/11/2014
104	Design Spent Fuel Security System Modifications	130 days	04/11/2014
105	Install Spent Fuel Pool System Modifications - Unit 2	66 days	11/21/2014
106	Install Spent Fuel Pool System Modifications - Unit 3	66 days	02/21/2015
107	Spent Fuel Pool Island System Training	10 days	05/26/2015
108	Implement Control Room Modifications	185 days	10/03/2014
109	Implement Spent Fuel Pool Security Modifications	180 days	10/10/2014
110	Transition Project Modifictations	262 days	06/28/2014
111	DGC Contract Award	0 days	06/30/2015
112	Decon Pd 2 Ends	0 wks	06/30/2015
113	**Decon Pd 3 - Decommissioning Preparations and Reactor Internals Segmentati**	**1024 days**	**06/30/2015**
114	Decon Pd 3 Begins	0 days	06/30/2015
115	**DGC Mobilization and Planning**	**160 days**	**07/**
116	Prepare Integrated Work Sequence and Schedule for Decommissioning	90 days	07/ 1/2015
117	Prepare Detailed Work Procedures for Decommissioning	160 days	07/ /2015
118	Planning and Design of Primary System Decontamination	135 days	07/01/ 15
119	Planning and Design of Infrastructure Improvements	60 d ys	0 /2015
120	Design Containment Access Modifications	0 d	07/0 /2015
121	**System Decon**	**400 ys**	**01/06/2016**
122	Perform Primary System Decon- Unit 2	140 da	01/06/2016
123	Perform Primary System Decon- Unit 3	40 days	07/20/2016
124	Hot Spot Decontamination - Unit 2	days	02/01/2017
125	Hot Spot Decontamination - Unit 3	60 days	04/26/2017
126	**Rx Internals Removal Preparations**	**255 days**	**09/23/2015**
127	Modify Containment Access- Unit 2	90 days	09/23/2015
128	Modify Containment Access- Unit 3	90 days	01/27/2016
129	Remove and Dispose of Missle Shields - Unit 2	30 days	01/27/2016
130	Remove and Dispose of Reactor Head - Unit 2	45 days	03/09/2016
131	Remove and Dispose of Missle Shields - Unit 3	30 days	06/01/2016
132	Remove and Dispose of Reactor Head - Unit 3	45 days	07/13/2016
133	**Reactor Internals Segmentation Planning and Implementation**	**1020 days**	**07/01/2015**
134	Finalize Residual Radiation Inventory (Rx Vessel & Internals)	65 days	07/01/2015
135	Prepare Activity Specification for Rx Vessel and Internals Segmentation	120 days	09/30/2015
136	Select Shipping Casks and Obtain Shipping Permits	60 days	03/16/2016
137	Design, Specify, and Procure Special Items and Materials	175 days	03/16/2016
138	Purchase Dry Storage Modules for GTCC Waste - Unit 2	90 days	07/01/2015
139	Purchase Dry Storage Modules for GTCC Waste - Unit 3	90 days	07/01/2015
140	Test Special Cutting and Handling Equipment and Train Operators	60 days	11/16/2016
141	Finalize Internals and Vessel Segmenting Details - Unit 2	30 days	02/08/2017



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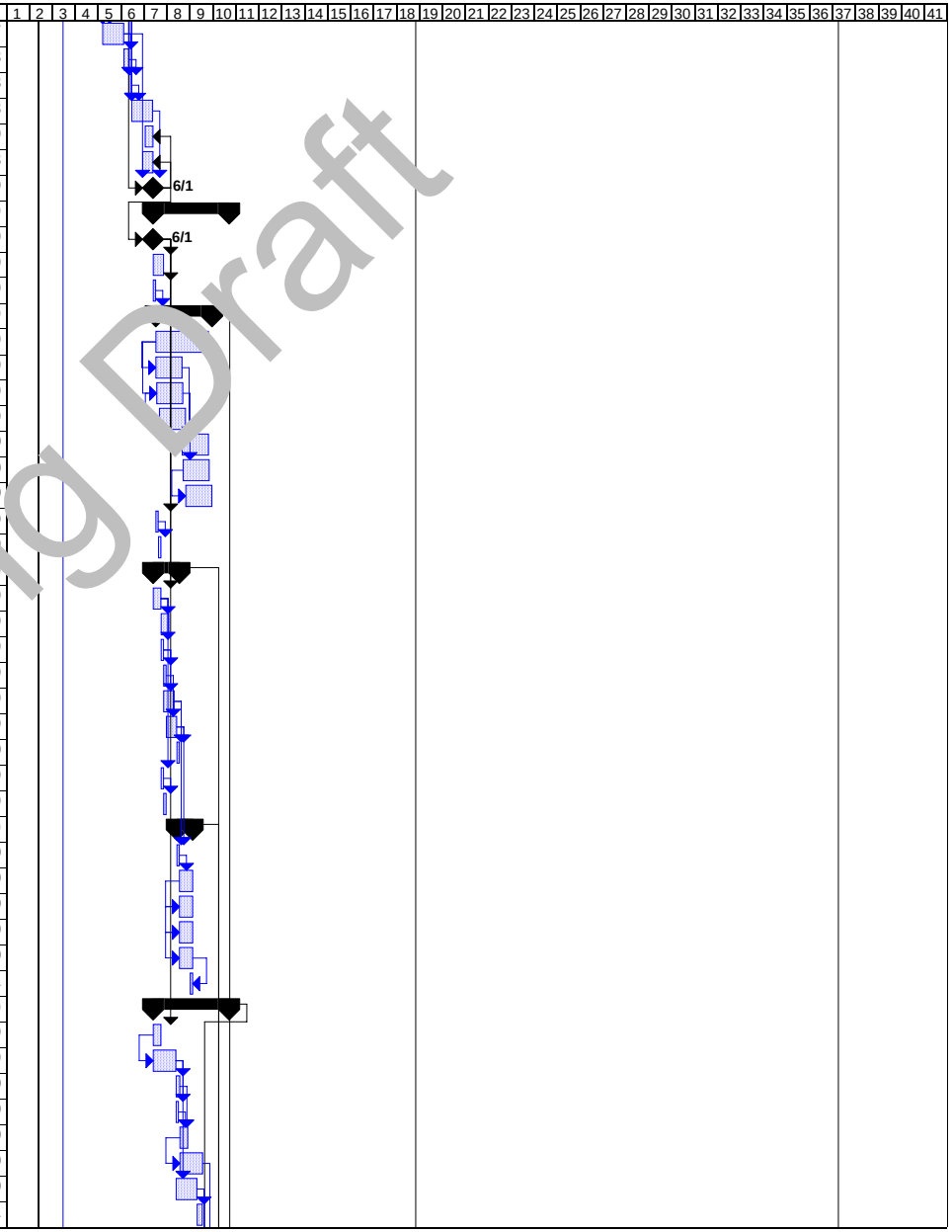
Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
142	Segment, Package and Dispose of Reactor Internals - Unit 2	240 days	03/22/2017
143	Transfer Internals Segmentation Equipment to Unit 3	60 days	02/21/2018
144	Finalize Internals and Vessel Segmenting Details - Unit 3	30 days	05/16/2018
145	Segment, Package and Dispose of Reactor Internals - Unit 3	240 days	06/27/2018
146	Construct new change rooms, hot laundry, in-plant laydown areas	90 days	01/29/2019
147	Procure Non-Engineered Standard Equipment	120 days	12/18/2018
148	Decon Pd 3 Ends	0 wks	06/01/2019
149	**Decon Pd 4 - Plant Systems and Large Component Removal**	**865 days**	**06/01/2019**
150	Decon Pd 4 Begins	0 days	06/01/2019
151	Upgrade Rail Spur	120 days	06/04/2019
152	Install GARDIAN Bulk Assay System	30 days	06/04/2019
153	**Non Essential System Removal**	**640 days**	**07/16/2019**
154	Scaffolding for Non-Essential System Removal	120 wks	07/16/2019
155	Asbestos Abatement for Non-Essential Systems Removal - Unit 2	60 wks	07/16/2019
156	Lead Abatement for Non-Essential Systems Removal - Unit 2	60 wks	07/30/2019
157	Remove, Package and Dispose of Non-Essential Systems - Unit 2	60 wks	09/10/2019
158	Asbestos Abatement for Non-Essential Systems - Unit 3	60 wks	09/08/2020
159	Lead Abatement for Non-Essential Systems - Unit 3	60 wks	09/22/2020
160	Remove, Package and Dispose of Non-Essential Systems - Unit 3	60 wks	11/03/2020
161	Remove Underground Diesel Tank - Unit 2	30 days	07/16/2019
162	Remove Underground Diesel Tank - Unit 3	30 days	08/2[illegible]
163	**Fuel Pool Closure**	**300 days**	**[illegible]4/2019**
164	Remove and Dispose of Spent Fuel Storage Racks - Unit 2	90 days	06/[illegible]2019
165	Remove and Dispose of Spent Fuel Storage Racks - Unit 3	90 days	10/08/[illegible]19
166	Remove and Dispose of Legacy Class B and C Waste - Unit 2	30 d[illegible]s	1[illegible]8/2019
167	Remove and Dispose of Legacy Class B and C Waste - Unit 3	[illegible]	11/1[illegible]2019
168	Drain Spent Fuel Pool and Process Liquid Waste - Unit 2	2[illegible]ks	11/19/2019
169	Drain Spent Fuel Pool and Process Liquid Waste - Unit 3	24 w[illegible]	12/31/2019
170	Segment, Package and Dispose of Spent Fuel Pool Island Equipment	30 days	06/16/2020
171	Segment and Dispose of Fuel Pool Bridge Crane - Unit 2	[illegible] days	10/08/2019
172	Segment and Dispose of Fuel Pool Bridge Crane - Unit 3	30 days	11/19/2019
173	**Essential Systems Removal**	**180 days**	**06/16/2020**
174	Flush and Drain Essential Systems Following Fuel Po[illegible]ure	30 days	06/16/2020
175	Scaffolding for Essential System Removal	30 wks	07/28/2020
176	Asbestos Abatement for Essential Systems	30 wks	07/28/2020
177	Lead Abatement for Essential Systems Removal	30 wks	07/28/2020
178	Remove, Package and Dispose of Essential Systems	30 wks	07/28/2020
179	Removal and Disposal of Spent Resins, Filter Media and Tank Sludge	30 days	01/12/2021
180	**Large Component Removal**	**865 days**	**06/04/2019**
181	Reactor Vessel Insulation Removal and Disposal - Unit 2	90 days	06/04/2019
182	Segment, Package and Dispose of Reactor Pressure Vessel - Unit 2	260 days	06/04/2019
183	Transfer Rx Vessel Segmentation Equipment to Unit 3	45 days	06/02/2020
184	Procure Replacement Non-Engineered Standard Equipment	30 days	06/02/2020
185	Reactor Vessel Insulation Removal and Disposal - Unit 3	90 days	08/04/2020
186	Segment, Package and Dispose of Reactor Pressure Vessel - Unit 3	260 days	08/04/2020
187	Remove and Dispose of Steam Generators - Unit 2	240 days	06/02/2020
188	Remove and Dispose of Pressurizer - Unit 2	60 days	05/04/2021



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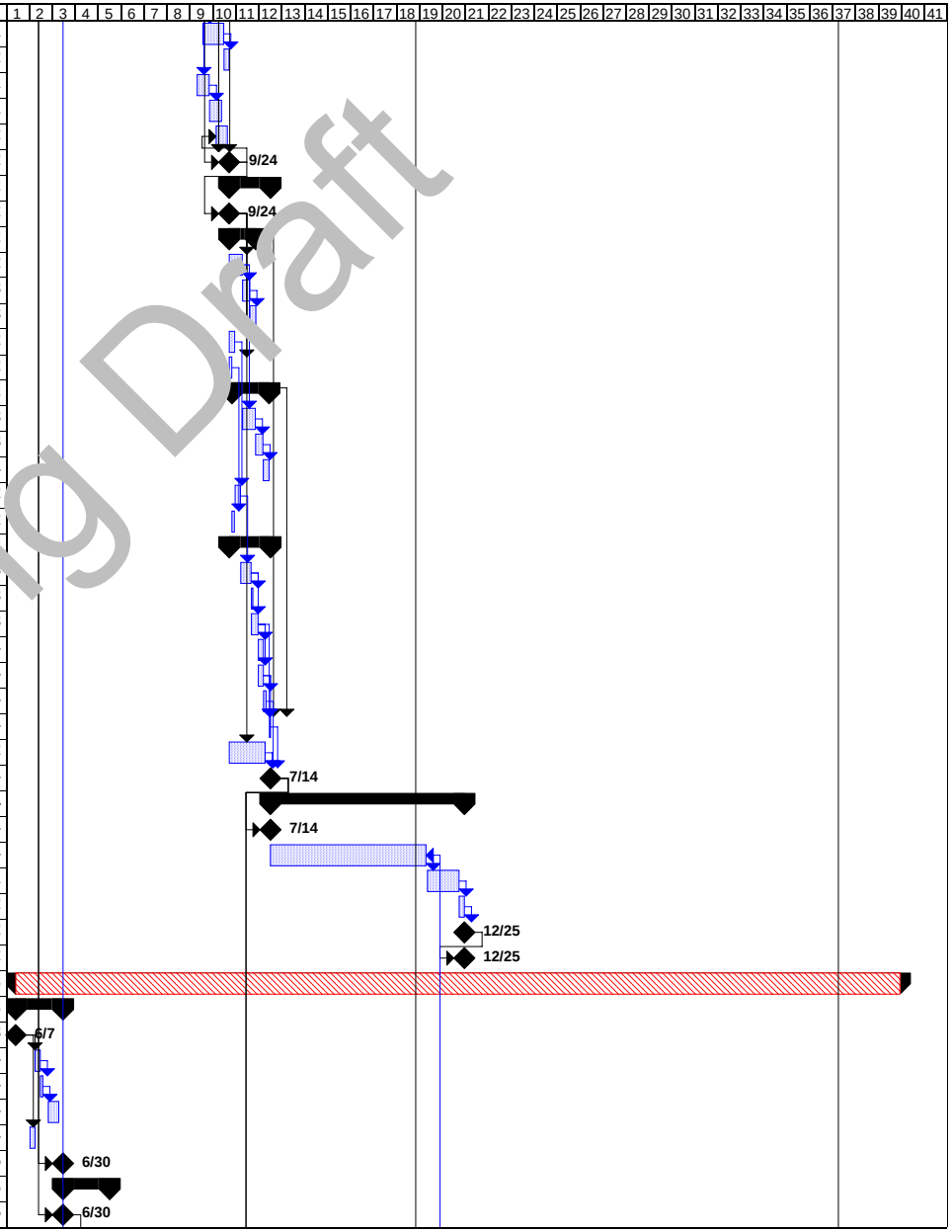
Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
189	Remove and Dispose of Steam Generators - Unit 3	240 days	08/03/2021
190	Remove and Dispose of Pressurizer - Unit 3	60 days	07/05/2022
191	Remove and Dispose of Turbine Gantry Crane - Unit 2	140 days	05/04/2021
192	Remove and Dispose of Turbine Gantry Crane - Unit 3	140 days	11/16/2021
193	Prepare License Termination Plan	26 wks	03/01/2022
194	Decon Pd 4 Ends	0 days	09/24/2022
195	**Decon Pd 5 - Building Decontamination**	**470 days**	**09/24/2022**
196	Decon Pd 5 Begins	0 days	09/24/2022
197	**Unit 3**	**305 days**	**09/27/2022**
198	Decon Containment Building - Unit 3	150 days	09/27/2022
199	Decon Penetration Building - Unit 3	85 days	04/25/2023
200	Decon Safety Equipment and MSIV Building - Unit 3	70 days	08/22/2023
201	Decon Fuel Handling Building - Unit 3	65 days	09/27/2022
202	Decon Turbine Building - Unit 3	30 days	09/27/2022
203	**Unit 2**	**425 days**	**11/08/2022**
204	Decon Containment Building - Unit 2	150 days	04/25/2023
205	Decon Penetration Building - Unit 2	85 days	11/21/2023
206	Decon Safety Equipment and MSIV Building - Unit 2	70 days	03/19/2024
207	Decon Fuel Handling Building - Unit 2	65 days	12/27/2022
208	Decon Turbine Building - Unit 2	30 days	11/08/2022
209	**Common**	**470 days**	**09/2**
210	Decon Auxiliary Radwaste Building - Common	120 days	03/ 8/2023
211	Decon Auxiliary Control Building - Common	20 days	09/ /2023
212	Decon Condensate Area and Tunnels - Units 2 and 3	80 days	09/12/ 23
213	Excavate, Remove and Dispose of Yard Area Drains	60 d ys	0 /2/2024
214	Remove and Dispose of Contaminated Sumps, Trenches and Pavement	0 d	01/0 /2024
215	Remove and Dispose of Radiologically Contaminated Soil	30 ys	03/26/2024
216	Dispose of Contaminated Decon Equipment and Tooling	15 da	06/25/2024
217	Radiological Survey of Structures During Decon	10 days	09/27/2022
218	Decon Pd 5 Ends	days	07/13/2024
219	**Decon Pd 6 - License Termination During Demolition**	**2206 days**	**07/13/2024**
220	Decon Pd 6 Begins	0 days	07/13/2024
221	Final Status Survey	1771 days	07/13/2024
222	ORISE Verification and NRC Approval	18 mons	05/17/2031
223	Prepare Final Report of Dismantling Program	60 days	10/02/2032
224	Decon Complete - Partial License Termination	0 days	12/24/2032
225	Decon Pd 6 Ends	0 days	12/24/2032
226	**Site Restoration**	**10052 days**	**06/07/2013**
227	**SR Pd 1 - Transition to Site Restoration**	**538 days**	**06/07/2013**
228	SR Pd 1 Begins	0 days	06/07/2013
229	Mesa Site Phase I and II Site Assessment	60 days	04/11/2014
230	Disposition Hazardous Waste from Mesa Site	30 days	07/04/2014
231	Mesa Site Characterization Survey	120 days	11/07/2014
232	Fuel Cancellation Expense	60 days	01/21/2014
233	SR Pd 1 Ends	0 days	06/30/2015
234	**SR Pd 2 - Building Demolition During Decommissioning**	**530 days**	**06/30/2015**
235	SR Pd 2 Begins	0 days	06/30/2015



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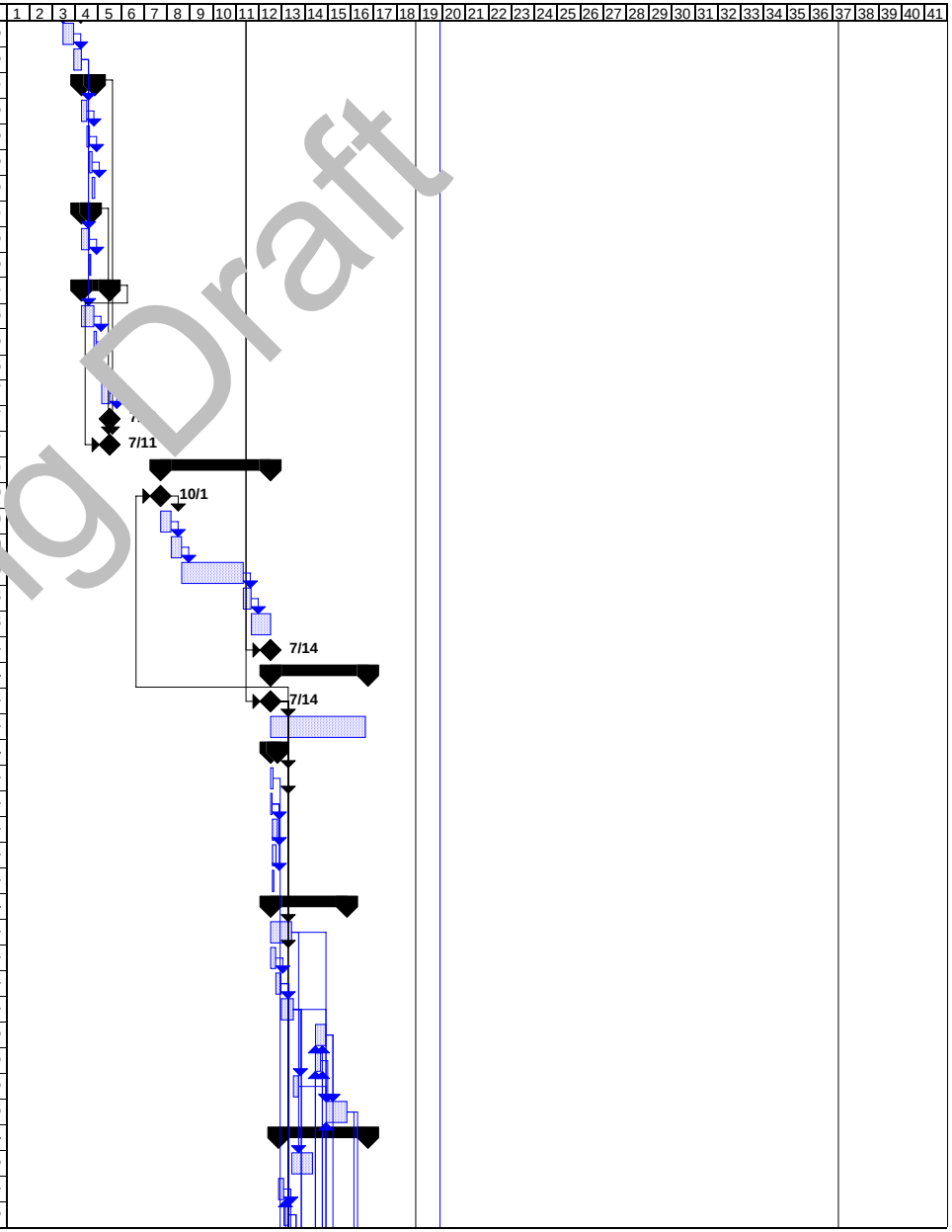
Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
236	Prepare Site Restoration Demolition Plan and Schedule	120 days	07/01/2015
237	Obtain Required Permits For Mesa, South Access and South Yard	90 days	12/16/2015
238	**South Access for Decommissioning**	**150 days**	**04/20/2016**
239	Demolish Service Building (K-10, 20, 30)	60 days	04/20/2016
240	Demolish South Security Processing Facility (K-70)	30 days	07/13/2016
241	Demolish Staging Warehouse	30 days	08/24/2016
242	Demolish Administration Building (K-40/50)	30 days	10/05/2016
243	**South Yard Facility**	**105 days**	**04/20/2016**
244	Demolish South Yard Area Buildings T-10, 20, 60 and Haz Mat.	90 days	04/20/2016
245	Demolish REMS Staging Pad	15 days	08/24/2016
246	**Mesa**	**320 days**	**04/20/2016**
247	Demolish Mesa Buildings	140 days	04/20/2016
248	Remove Underground Fuel Storage Tanks	30 days	11/02/2016
249	Demolish Mesa Roads and Parking Lots	60 days	12/14/2016
250	Finish Grading and Re-vegetate Mesa Site	90 days	03/08/2017
251	Mesa Area Cleared for Easement Termination	0 days	07/11/2017
252	SR Pd 2 Ends	0 days	07/11/2017
253	**SR Pd 3 - Subsurface Demolition Engineering and Permitting**	**1250 days**	**10/01/2019**
254	SR Pd 3 Begins	0 days	10/01/2019
255	Hydrogeologic Investigation and Outfall Conduit Survey	120 days	10/01/2019
256	Subsurface Structure Removal Engineering Planning and Design	120 days	03/1
257	Environmental Impacts Analyses for Lease Termination Activities	700 days	09/1/2020
258	Final Site Grading and Shoreline Protection Engineering Planning and Design	90 days	05/ /2023
259	Obtain Required Permits and Approvals	220 days	09/12/ 23
260	SR Pd 3 Ends	0 d ys	0 /3/2024
261	**SR Pd 4 - Building Demolition to 3 Feet Below Grade**	**1 d**	**07/13/2024**
262	SR Pd 4 Begins	0 ys	07/13/2024
263	Procure Building Demolition Equipment	1080 da	07/16/2024
264	**Demolition Preparations**	**30 days**	**07/16/2024**
265	Install Temporary Structures	days	07/16/2024
266	Install Erosion and Sediment Controls	20 days	07/16/2024
267	Remove Cathodic Protection Trench	60 days	08/13/2024
268	Remove Protected Area Security Fencing	45 days	08/13/2024
269	Remove Protected Area Pavement	20 days	08/13/2024
270	**Unit 3**	**870 days**	**07/16/2024**
271	Detension and Remove Unit 3 Containment Builidng Tendons	240 days	07/16/2024
272	Demolish Diesel Generator Building - Unit 3	60 days	07/16/2024
273	Demolish Condensate Building and Transformer Pads - Unit 3	60 days	10/08/2024
274	Demolish Full Flow Area and Turbine Building - Unit 3	140 days	12/31/2024
275	Demolish Unit 3 Fuel Handling Building to 3-Feet Below Grade	120 days	06/30/2026
276	Demolish Penetration Building - Unit 3	60 days	06/30/2026
277	Demolish Safety Equipmentand MSIV Building - Unit 3	60 days	07/15/2025
278	Demolish Unit 3 Containment Building to 3-Feet Below Grade	240 days	12/15/2026
279	**Unit 2**	**1020 days**	**11/19/2024**
280	Detension and Remove Unit 2 Containment Builidng Tendons	240 days	06/17/2025
281	Demolish Diesel Generator Building - Unit 2	60 days	11/19/2024
282	Demolish Condensate Building and Transformer Pads - Unit 2	60 days	02/11/2025



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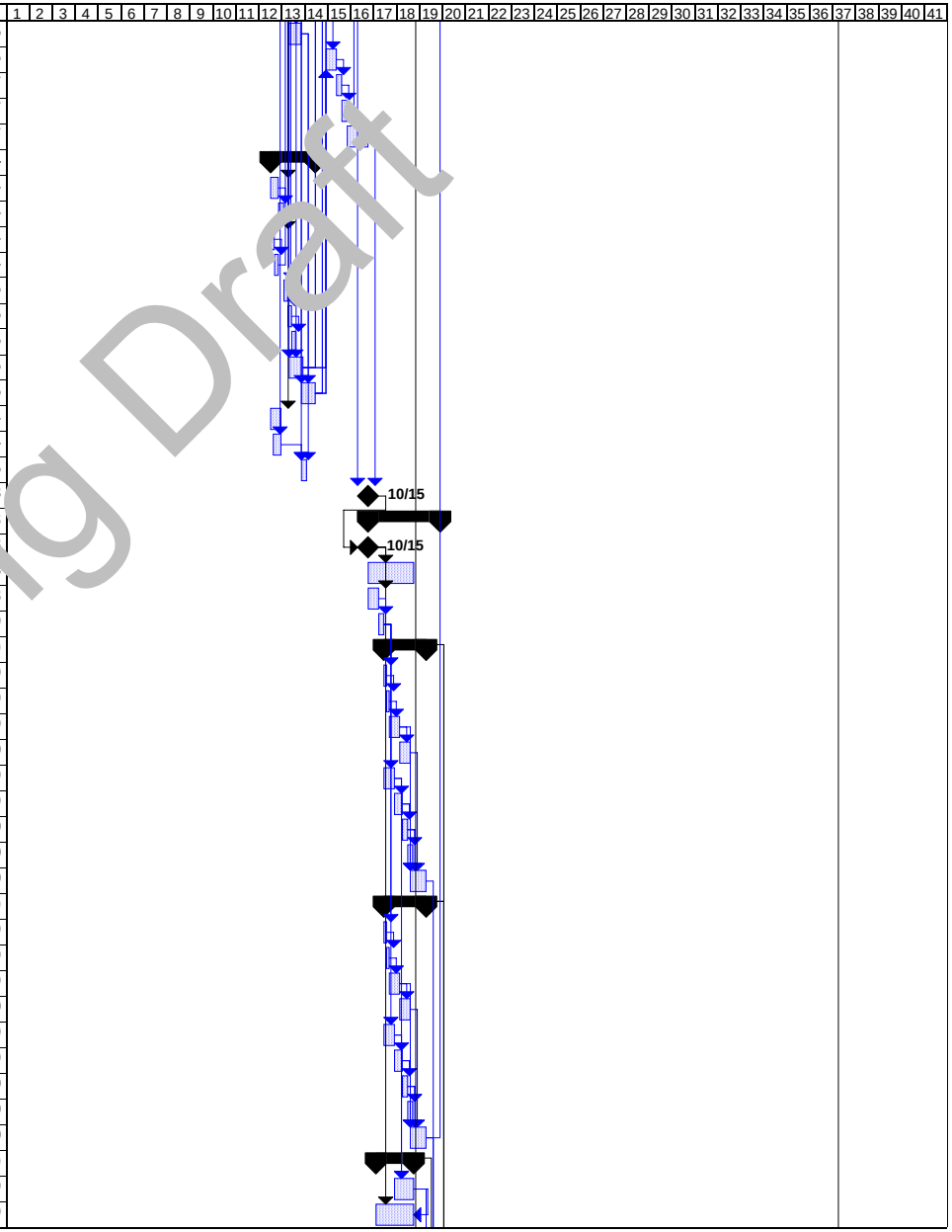
Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
283	Demolish Full Flow Area and Turbine Building - Unit 2	140 days	05/06/2025
284	Demolish Unit 2 Fuel Handling Building to 3-Feet Below Grade	120 days	12/15/2026
285	Demolish Penetration Building - Unit 2	60 days	06/01/2027
286	Demolish Safety Equipment and MSIV Building - Unit 2	60 days	08/24/2027
287	Demolish Unit 2 Containment Building to 3-Feet Below Grade	240 days	11/16/2027
288	**Common**	**510 days**	**07/16/2024**
289	Demolish AWS Building	90 days	07/16/2024
290	Demolish Building L-50	60 days	11/19/2024
291	Demolish Building B-64/B-65	45 days	07/16/2024
292	Demolish Building B-62/B-63	45 days	09/17/2024
293	Demolish Outage Control Center	45 days	02/11/2025
294	Demolish Building B-49/B-50	45 days	04/15/2025
295	Demolish Building B-43/B-44	45 days	06/17/2025
296	Demolish Auxiliary Radwaste Building - Common	160 days	05/06/2025
297	Demolish Auxiliary Control Building - Common	160 days	11/18/2025
298	Remove Systems and Demolish Make-Up Demineralizer Structures	120 days	07/16/2024
299	Install Concrete Plugs in Intake and Discharge Structures	90 days	08/27/2024
300	Demolish Intake and Discharge Structures to 3-Feet Below Grade	60 days	11/18/2025
301	SR Pd 4 Ends	0 days	10/14/2028
302	**SR Pd 5 - Subgrade Structure Removal Below -3 Feet**	**820 days**	**10/14/2028**
303	SR Pd 5 Begins	0 days	10/1[illegible]
304	Procure Subsurface Structure Demolition Equipment	520 days	1[illegible]7/2028
305	Install Sheet Piling and Excavation Shoring	120 days	10/[illegible]2028
306	Install Dewatering System and Effluent Treatment and Discharge Controls	60 days	04/01/[illegible]29
307	**Unit 3 Subsurface Structures**	**480 d[illegible]s**	**0[illegible]3/2029**
308	Demolish and Backfill Unit 3 Condensate Storage Area Below -3 Feet	[illegible]	06/2[illegible]2029
309	Demolish and Backfill Unit 3 Diesel Generator Builidng Below -3 Feet	30[illegible]s	08/04/2029
310	Demolish and Backfill Unit 3 Fuel Handling Building Below -3 Feet	120 da[illegible]	09/15/2029
311	Demolish and Backfill Unit 3 Radwaste Building Below -3 Feet	[illegible]20 days	03/02/2030
312	Demolish and Backfill Unit 3 Turbine Building Structure Below 9 Ft Ele[illegible]tion	12[illegible] days	06/23/2029
313	Demolish and Backfill Unit 3 Safety Equipment Building Below[illegible] Feet	90 days	12/08/2029
314	Demolish and Backfill Unit 3 Penetration Area Below -3 Feet	60 days	04/13/2030
315	Demolish and Backfill Unit 3 Full Flow Building Below [illegible]	60 days	07/06/2030
316	Demolish and Backfill Unit 3 Containment Building Below[illegible]3 Fe[illegible]	180 days	08/17/2030
317	**Unit 2 Subsurface Structures**	**480 days**	**06/23/2029**
318	Demolish and Backfill Unit 2 Condensate Storage Are[illegible]elo[illegible]-3 Feet	30 days	06/23/2029
319	Demolish and Backfill Unit 2 Diesel Generator Builidng Bel[illegible] Feet	30 days	08/04/2029
320	Demolish and Backfill Unit 2 Fuel Handling Building Below -3 Feet	120 days	09/15/2029
321	Demolish and Backfill Unit 2 Radwaste Building Below -3 Feet	120 days	03/02/2030
322	Demolish and Backfill Unit 2 Turbine Building Structure Below 9 Ft Elevation	120 days	06/23/2029
323	Demolish and Backfill Unit 2 Safety Equipment Building Below -3 Feet	90 days	12/08/2029
324	Demolish and Backfill Unit 2 Penetration Area Below -3 Feet	60 days	04/13/2030
325	Demolish and Backfill Unit 2 Full Flow Building Below -3 Feet	60 days	07/06/2030
326	Demolish and Backfill Unit 2 Containment Building Below -3 Feet	180 days	08/17/2030
327	**Common Subgrade Structures**	**432 days**	**02/16/2029**
328	Demolish and Backfill Intake Structure Inside Seawall Below -3 Feet	220 days	12/08/2029
329	Remove Off Shore Intake and Outfall Conduits	432 days	02/16/2029



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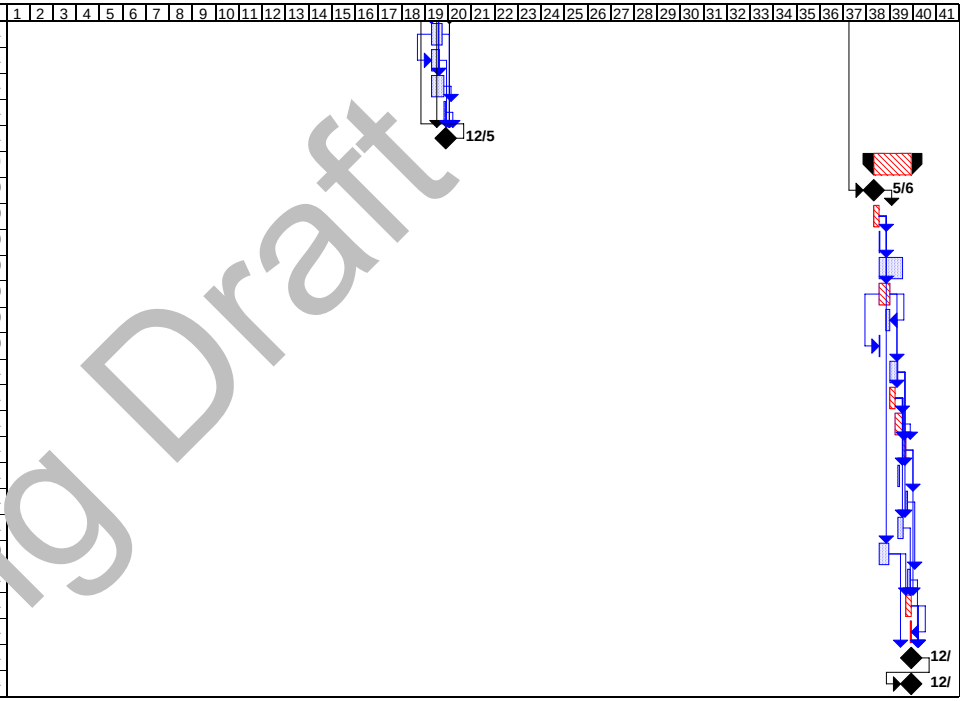
Detailed Project Schedule

Prompt DECON, DOE Repository Opens 2024

ID	Task Name	Duration	Start
330	Remove Sheet Piling and Excavation Shoring	120 days	04/26/2031
331	Remove Dewatering System and Effluent Treatment	90 days	04/26/2031
332	Finish Grading and Re-Vegetate Site	140 days	04/26/2031
333	Remove Temporary Structures	20 days	11/08/2031
334	SR Pd 5 Ends	0 days	12/05/2031
335	**SR Pd 6 - Final Site Restoration and Lease Termination**	**420 days**	**05/06/2050**
336	SR Pd 6 Begins	0 days	05/06/2050
337	Obtain Required Permits and Approvals	60 days	05/07/2050
338	Install Temporary Structures	10 days	07/30/2050
339	Procure Site Restoration Equipment	265 days	07/30/2050
340	Install Temporary Seawall or Coffer Dam	120 days	07/30/2050
341	Install Dewatering System and Effluent Treatment and Discharge Controls	45 days	11/12/2050
342	Remove and Stockpile Existing Seawall Erosion Protection	10 days	07/30/2050
343	Remove Unit 2 and 3 Seawall and Pedestrian Walkway	90 days	01/14/2051
344	Remove Remaining Intake and Outfall Box Culvert	60 days	01/14/2051
345	Remove Temporary Seawall or Coffer Dam	90 days	04/08/2051
346	Backfill and Compaction of Excavation	30 days	08/12/2051
347	Remove Dewatering System and Effluent Treatment	20 days	05/20/2051
348	Install Shoreline Erosion Control and Restoration Features	20 days	09/23/2051
349	Remove Railroad Tracks, Rails and Ballast	60 days	05/20/2051
350	Remove Gunite Slope Protection	110 days	07/3
351	Remove Access Roads and Parking Lots	30 days	1 1/2051
352	Finish Grading and Re-Vegetate Site	60 days	09 /2051
353	Remove Temporary Structures	10 days	12/02/ 51
354	SR Pd 6 Ends	0 d ys	12 5/2051
355	Final Easement Termination	0 d	12/1 /2051



Appendix D

Detailed Cost Table

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
A. License Termination							
Decon Pd 1	**Transition to Decommissioning**						
Distributed							
1.05	Disposition of Legacy Wastes	$0	$0	$9,153	$735	$0	$9,888
Distributed	**Subtotal**	**$0**	**$0**	**$9,153**	**$735**	**$0**	**$9,888**
Undistributed							
1.01	Utility Staff	$30,049	$0	$0	$0	$0	$30,049
1.05	Insurance	$0	$0	$0	$5,352	$0	$5,352
1.07	NRC Decommissioning Fees	$0	$0	$0	$1,349	$0	$1,349
1.08	Materials and Services	$0	$0	$0	$1,007	$0	$1,007
1.10	Energy	$0	$0	$0	$2,422	$0	$2,422
1.17	Association Fees and Expenses	$0	$0	$0	$315	$0	$315
1.18	Utilities (Water, gas, phone)	$0	$0	$0	$840	$0	$840
1.20	Non-Process Computers	$0	$0	$0	$224	$0	$224
1.21	Telecommunications	$0	$0	$0	$41	$0	$41
1.22	Personal Computers	$0	$0	$0	$9	$0	$9
1.24	Environmental Permits and Fees	$0	$0	$0	$818	$0	$818
Undistributed	**Subtotal**	**$30,049**	**$0**	**$0**	**$12,378**	**$0**	**$42,426**
Decon Pd 1	**Subtotal**	**$30,049**	**$0**	**$9,153**	**$13,113**	**$0**	**$52,315**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Decon Pd 2	**Decommissioning Planning and Site Modifications**						
Distributed							
2.01	Develop Certified Fuel Handler Program	$143	$1	$0	$0	$36	$180
2.02	Prepare Post-Shutdown QA Plan	$427	$1	$0	$0	$107	$535
2.03	Prepare Post-Shutdown Security Plan	$427	$1	$0	$0	$107	$535
2.04	Prepare Post-Shutdown Fire Protection Plan	$427	$1	$0	$0	$107	$535
2.05	Prepare Defueled Radiation Protection Manual	$427	$1	$0	$0	$107	$535
2.06	Prepare Preliminary Defueled Technical Specifications	$0	$0	$0	$135	$34	$169
2.07	Prepare Defueled Safety Analysis Report (DSAR)	$1,279	$3	$0	$0	$321	$1,605
2.08	Implement Technical Specification Modifications	$1,332	$5	$0	$0	$334	$1,671
2.09	Prepare Post-Shutdown Emergency Preparedness Plan	$634	$1	$0	$0	$159	$793
2.10	NRC Review of Emergency Preparedness Plan	$0	$0	$0	$105	$26	$131
2.11	Prepare Post-Shutdown Decommissioning Activities Report (PSDAR)	$550	$1	$0	$0	$138	$688
2.12	NRC Review of Post-Shutdown Decommissioning Activities Report (PSDAR)	$0	$0	$0	$105	$26	$131
2.13	Respond to NRC quesitons on PSDAR	$34	$1	$0	$0	$9	$43
2.14	Prepare Decommissioning Cost Estimate (DCE)	$1,429	$4	$0	$0	$358	$1,791
2.15	NRC Review of Decommissioning Cost Estimate	$0	$0	$0	$105	$26	$131
2.16	Disposition of Legacy Wastes	$0	$0	$16,457	$0	$4,114	$20,571
2.17	Perform Historic Site Assessment and Site Characterization	$6,784	$838	$0	$0	$1,143	$8,765
2.18	Planning and Design For Cold and Dark	$9,716	$90	$0	$0	$2,451	$12,257
2.19	Implement Cold and Dark (Repower Site)	$16,141	$17,860	$0	$0	$8,500	$42,501
2.20	Install 12kV Service Line to Power Temporary Power Kit	$0	$0	$0	$5,250	$1,313	$6,563
2.21	Drain and De-Energize Non-Essential Systems (DEC Process)	$822	$183	$1,485	$0	$623	$3,114
2.22	Select Decommissioning General Contractor	$645	$8	$0	$0	$163	$817
2.23	Design Spent Fuel Pool Support System Modifications	$622	$8	$0	$0	$157	$787
2.24	Design Control Room Relocation	$601	$7	$0	$0	$152	$760
2.25	Design Spent Fuel Security System Modifications	$459	$5	$0	$0	$116	$580
2.26	Install Spent Fuel Pool System Modifications - Unit 2	$1,863	$4,101	$0	$0	$1,491	$7,456
2.27	Install Spent Fuel Pool System Modifications - Unit 3	$1,863	$4,101	$0	$0	$1,491	$7,456
2.28	Spent Fuel Pool System Modification Training	$0	$0	$0	$273	$68	$341
2.29	Implement Control Room Modifications	$1,004	$1,519	$0	$0	$631	$3,153
2.30	Implement Spent Fuel Pool Security Modifications	$525	$795	$0	$0	$330	$1,650
2.31	Transition Project Modifications	$0	$0	$0	$105	$26	$131

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Distributed	**Subtotal**	**$48,154**	**$29,538**	**$7,942**	**$6,077**	**$24,665**	**$126,376**
Undistributed							
1.01	Utility Staff	$56,478	$0	$0	$0	$14,119	$70,597
1.02	Utility Staff HP Supplies	$0	$1,781	$0	$0	$445	$2,226
1.03	Security Guard Force	$2,087	$0	$0	$0	$522	$2,609
1.04	Security Related Expenses	$77	$0	$0	$0	$19	$96
1.05	Insurance	$0	$0	$0	$4,446	$1,111	$5,557
1.06	Site Lease and Easement Expenses	$0	$0	$0	$470	$70	$540
1.07	NRC Decommissioning Fees	$0	$0	$0	$2,390	$598	$2,988
1.08	Materials and Services	$0	$3,208	$0	$0	$802	$4,010
1.09	DAW Disposal	$0	$0	$295	$0	$74	$369
1.10	Energy	$0	$0	$0	$6,338	$1,584	$7,922
1.13	Craft Worker Training	$234	$0	$0	$0	$58	$292
1.14	Workers Compensation Insurance	$0	$0	$0	$283	$71	$353
1.15	Community Outreach	$1,638	$0	$0	$1,830	$867	$4,335
1.16	Property Tax	$0	$0	$0	$2,350	$588	$2,938
1.17	Association Fees and Expenses	$0	$2,350	$0	$0	$588	$2,938
1.18	Utilities (Water, gas, phone)	$0	$738	$0	$0	$185	$923
1.20	Non-Process Computers	$0	$157	$0	$0	$39	$196
1.21	Telecommunications	$0	$157	$0	$0	$39	$196
1.24	Environmental Permits and Fees	$0	$0	$0	$2,977	$744	$3,721
1.25	Decommissioning Advisor	$0	$0	$0	$1,567	$392	$1,958
Undistributed	**Subtotal**	**$60,513**	**$8,391**	**$295**	**$22,650**	**$22,915**	**$114,764**
Decon Pd 2	**Subtotal**	**$108,667**	**$37,928**	**$18,237**	**$28,727**	**$47,581**	**$241,140**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Decon Pd 3	**Decommissioning Preparations and Reactor Internals Segmentation**						
Distributed							
3.01	Prepare Integrated Work Sequence and Schedule for Decommissioning	$952	$0	$0	$0	$238	$1,190
3.02	Prepare Detailed Work Procedures and Activity Specifications for Decommissioning	$14,920	$70	$0	$0	$3,748	$18,738
3.03	Planning and Design of Primary System Decontamination	$516	$4	$0	$0	$130	$649
3.04	Planning and Design Site Infrastructure Improvements	$341	$4	$0	$0	$86	$431
3.05	Design Containment Access Modifications	$557	$	$0	$0	$141	$705
3.06	Primary System Decontamination - Unit 2	$1,447	$1,857	$2,228	$0	$1,383	$6,914
3.07	Primary System Decontamination - Unit 3	$1,447	$1,8	$2,228	$0	$1,383	$6,914
3.08	Hot Spot Decontamination - Unit 2	$580	$887	$743	$0	$552	$2,761
3.09	Hot Spot Decontamination - Unit 3	$5 0	$913	$743	$0	$559	$2,794
3.10	Modify Containment Access- Unit 2	$3 5	$611	$0	$0	$231	$1,157
3.11	Modify Containment Access- Unit 3	$ 15	$611	$0	$0	$231	$1,157
3.12	Remove and Dispose of Missle Shields - Unit 2	$20	$30	$81	$0	$79	$395
3.13	Remove and Dispose of Reactor Head - Unit 2	$879	$453	$2,463	$0	$949	$4,744
3.14	Remove and Dispose of Missile Shields - Unit 3	$437	$178	$3,375	$0	$997	$4,987
3.15	Remove and Dispose of Reactor Head - Unit 3	$879	$453	$2,463	$0	$949	$4,744
3.16	Finalize Residual Radiation Inventory	$125	$0	$0	$287	$103	$516
3.17	Prepare Activity Specifications	$7,328	$696	$0	$0	$2,006	$10,031
3.18	Select Shipping Casks and Obtain Shipping Permits	$49	$0	$0	$0	$12	$62
3.19	Design, Specify, and Procure Special Items and Materials	$972	$5,379	$0	$0	$1,588	$7,938
3.22	Test Special Cutting and Handling Equipment and Tra erators	$1,157	$148	$0	$0	$326	$1,631
3.23	Finalize Internals and Vessel Segmenting Detai - Unit	$212	$16	$0	$0	$57	$284
3.24	Segment, Package and Dispose of Reactor Internals Unit 2	$5,669	$2,036	$62,661	$0	$17,591	$87,957
3.25	Transfer Internals Segmentation Equipment to Unit 3	$131	$19	$0	$0	$37	$187
3.26	Finalize Internals and Vessel Segmenting Details - Unit 3	$212	$16	$0	$0	$57	$284
3.27	Segment, Package and Dispose of Reactor Internals - Unit 3	$5,669	$2,036	$62,661	$0	$17,591	$87,957
3.28	Construct New Change Rooms, Hot Laundry, In-Plant Laydown Areas	$0	$1,290	$0	$0	$194	$1,484
3.29	Procure Non-Engineered Standard Equipment	$0	$5,454	$0	$0	$1,364	$6,818
Distributed	**Subtotal**	**$45,893**	**$25,024**	**$139,643**	**$287**	**$52,583**	**$263,431**
Undistributed							
1.01	Utility Staff	$79,350	$0	$0	$0	$19,837	$99,187

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
1.02	Utility Staff HP Supplies	$0	$2,693	$	$0	$673	$3,366
1.03	Security Guard Force	$5,484	$0	$0	$0	$1,371	$6,855
1.04	Security Related Expenses	$326	$0	$	$0	$82	$408
1.05	Insurance	$0	$0	$0	$8,000	$2,000	$10,000
1.06	Site Lease and Easement Expenses	$0	$	$0	$1,235	$185	$1,420
1.07	NRC Decommissioning Fees	$0	$	$0	$6,281	$1,570	$7,851
1.08	Materials and Services	$0	$4,58	$0	$0	$1,145	$5,727
1.09	DAW Disposal	$0	$	$424	$0	$106	$529
1.10	Energy	$0	$	$0	$10,226	$2,556	$12,782
1.11	Decommissioning General Contractor Staff	$62,219	$0	$0	$0	$15,555	$77,773
1.12	DGC HP Supplies	$	$1,558	$0	$0	$389	$1,947
1.13	Craft Worker Training	$1,8	$0	$0	$0	$460	$2,302
1.14	Workers Compensation Insurance	$0	$0	$0	$742	$186	$928
1.15	Community Outreach	$4,30	$0	$0	$4,808	$2,278	$11,390
1.16	Property Tax	$0	$0	$0	$6,175	$1,544	$7,719
1.17	Association Fees and Expenses	$0	$6,175	$0	$0	$1,544	$7,719
1.18	Utilities (Water, gas, phone)	$0	$1,106	$0	$0	$277	$1,383
1.19	Tools and Equipment	$0	$182	$0	$0	$45	$227
1.20	Non-Process Computers	$0	$412	$0	$0	$103	$515
1.21	Telecommunications	$0	$412	$0	$0	$103	$515
1.22	Personal Computers	$0	$0	$0	$89	$22	$111
1.24	Environmental Permits and Fees	$0	$0	$0	$7,822	$1,955	$9,777
1.25	Decommissioning Advisor	$0	$0	$0	$4,117	$1,029	$5,146
Undistributed	**Subtotal**	**$153,524**	**$17,119**	**$424**	**$49,495**	**$55,017**	**$275,579**
Decon Pd 3	**Subtotal**	**$199,417**	**$42,144**	**$140,067**	**$49,782**	**$107,600**	**$539,009**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Decon Pd 4	**Plant Systems and Large Component Removal**						
Distributed							
4.01	Upgrade Rail Spur	$0	$0	$0	$3,277	$819	$4,096
4.02	Install GARDIAN System	$0	$0	$0	$525	$131	$656
4.03	Scaffolding for Non-Essential System Removal	$3,516	$1,144	$200	$0	$1,215	$6,075
4.04	Asbestos Abatement and Hazardous Waste Disposal for Non-Essential Systems - Unit	$0	$0	$0	$1,050	$525	$1,575
4.05	Lead Abatement for Non-Essential Systems Removal - Unit 2	$2,287	$2	$411	$0	$1,361	$4,082
4.06	Remove, Package and Dispose of Non-Essential Systems - Unit 2	$33,512	$5,597	$31,969	$0	$17,769	$88,847
4.07	Asbestos Abatement and Hazardous Waste Disposal for Non-Essential Systems - Unit	$0	$0	$0	$1,050	$525	$1,575
4.08	Lead Abatement for Non-Essential Systems - Unit 3	$2,287	$399	$411	$0	$1,549	$4,647
4.09	Remove, Package and Dispose of Non-Essential Systems - Unit 3	$36,8 1	$6,313	$36,610	$0	$19,944	$99,718
4.10	Remove Underground Diesel Tank - Unit 2	$1 1	$45	$0	$41	$49	$247
4.11	Remove Underground Diesel Tank - Unit 3	$ 11	$45	$0	$41	$49	$247
4.12	Remove and Dispose of Spent Fuel Storage Racks - Unit 2	$4	$36	$4,922	$0	$1,250	$6,250
4.13	Remove and Dispose of Spent Fuel Storage Racks - Unit 3	$42	$36	$4,922	$0	$1,250	$6,250
4.14	Remove and Dispose of Legacy Class B and C Waste - Unit 2	$0	$0	$500	$0	$125	$625
4.15	Remove and Dispose of Legacy Class B and C Waste - Unit 3	$0	$0	$500	$0	$125	$625
4.16	Drain Spent Fuel Pool and Process Liquid Waste - Unit 2	$557	$703	$0	$0	$315	$1,575
4.17	Drain Spent Fuel Pool and Process Liquid Waste - Unit 3	$557	$703	$0	$0	$315	$1,575
4.18	Segment, Package and Dispose of Spent Fuel Pool Island E ipm nt	$11	$2	$107	$0	$30	$150
4.19	Segment and Dispose of Fuel Pool Bridge Crane - Unit 2	$85	$12	$168	$0	$66	$332
4.20	Segment and Dispose of Fuel Pool Bridge Crane - Un 3	$85	$12	$168	$0	$66	$332
4.21	Flush and Drain Essential Systems Following F l Pool Closur	$226	$181	$2,970	$0	$844	$4,221
4.22	Scaffolding for Essential System Removal	$989	$322	$56	$0	$342	$1,708
4.23	Asbestos Abatement and Hazardous Waste Disposal for E ntial Systems	$0	$0	$0	$788	$394	$1,181
4.24	Lead Abatement for Essential Systems Removal	$332	$58	$59	$0	$225	$674
4.25	Remove, Package and Dispose of Essential Systems	$33,774	$5,869	$17,264	$0	$14,227	$71,134
4.26	Removal and Disposal of Spent Resins, Filter Media and Tank Sludge	$90	$40	$7,425	$0	$1,889	$9,445
4.27	Reactor Vessel Insulation Removal and Disposal - Unit 2	$105	$12	$147	$0	$66	$331
4.28	Segment, Package and Dispose of Reactor Pressure Vessel - Unit 2	$1,044	$2,834	$29,313	$0	$8,298	$41,489
4.29	Transfer Rx Vessel Segmentation Equipment to Unit 3	$122	$18	$0	$0	$35	$175
4.30	Procure Replacement Non-Engineered Standard Equipment	$0	$454	$0	$0	$114	$568
4.31	Reactor Vessel Insulation Removal and Disposal - Unit 3	$105	$12	$147	$0	$66	$331

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

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Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
4.32	Segment, Package and Dispose of Reactor Pressure Vessel - Unit 3	$1,044	$2,834	$[illegible],31	$0	$8,298	$41,489
4.33	Remove and Dispose of Steam Generators - Unit 2	$2,789	$1,288	$1[illegible]154	$0	$5,558	$27,788
4.34	Remove and Dispose of Pressurizer - Unit 2	$462	$70	$2,62[illegible]	$0	$788	$3,940
4.35	Remove and Dispose of Steam Generators - Unit 3	$2,789	$1,288	$1[illegible]154	$0	$5,558	$27,788
4.36	Remove and Dispose of Pressurizer - Unit 3	$462	$7[illegible]	[illegible]2,620	$0	$788	$3,940
4.37	Remove and Dispose of Turbine Gantry Crane - Unit 2	$445	$[illegible]29	$0	$4	$170	$848
4.38	Remove and Dispose of Turbine Gantry Crane - Unit 3	$445	$22[illegible]	$0	$4	$170	$848
4.39	Prepare License Termination Plan	$1,646	$149	$0	$0	$449	$2,244
Distributed	**Subtotal**	**$126,926**	**$[illegible]29**	**$209,131**	**$6,779**	**$95,755**	**$469,620**
Undistributed							
1.01	Utility Staff	$71,[illegible]6	$0	$0	$0	$17,989	$89,945
1.02	Utility Staff HP Supplies	$[illegible]	$2,715	$0	$0	$679	$3,394
1.03	Security Guard Force	$4,[illegible]8	$0	$0	$0	$1,159	$5,797
1.04	Security Related Expenses	$1,007	$0	$0	$0	$252	$1,259
1.05	Insurance	$0	$0	$0	$3,653	$913	$4,566
1.06	Site Lease and Easement Expenses	$0	$0	$0	$1,044	$157	$1,201
1.07	NRC Decommissioning Fees	$0	$0	$0	$5,312	$1,328	$6,639
1.08	Materials and Services	$0	$4,204	$0	$0	$1,051	$5,255
1.09	DAW Disposal	$0	$0	$1,568	$0	$392	$1,960
1.10	Energy	$0	$0	$0	$7,568	$1,892	$9,460
1.11	Decommissioning General Contractor Staff	$125,798	$0	$0	$0	$31,449	$157,247
1.12	DGC HP Supplies	$0	$5,834	$0	$0	$1,458	$7,292
1.13	Craft Worker Training	$7,788	$0	$0	$0	$1,947	$9,735
1.14	Workers Compensation Insurance	$0	$0	$0	$628	$157	$785
1.15	Community Outreach	$3,639	$0	$0	$4,066	$1,926	$9,632
1.16	Property Tax	$0	$0	$0	$5,222	$1,306	$6,528
1.18	Utilities (Water, gas, phone)	$0	$1,007	$0	$0	$252	$1,258
1.19	Tools and Equipment	$0	$423	$0	$0	$106	$529
1.20	Non-Process Computers	$0	$348	$0	$0	$87	$435
1.21	Telecommunications	$0	$348	$0	$0	$87	$435
1.24	Environmental Permits and Fees	$0	$0	$0	$6,615	$1,654	$8,268
1.25	Decommissioning Advisor	$0	$0	$0	$2,611	$653	$3,264

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

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Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Undistributed	**Subtotal**	**$214,826**	**$14,879**	**$54,56[illegible]**	**$36,718**	**$66,893**	**$334,884**
Decon Pd 4	**Subtotal**	**$341,752**	**$45,908**	**$210,[illegible]99**	**$43,497**	**$162,649**	**$804,504**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

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Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Decon Pd 5	**Building Decontamination**						
Distributed							
5.01	Decon Containment Building - Unit 3	$6,056	$3,318	$54,8[illegible]	$0	$16,050	$80,249
5.02	Decon Penetration Building - Unit 3	$1,065	$351	[illegible]933	$0	$1,087	$5,437
5.03	Decon Safety Equipment and MSIV Building - Unit 3	$905	$390	[illegible]5,562	$0	$1,715	$8,573
5.04	Decon Fuel Handling Building - Unit 3	$1,275	[illegible]77	$16,101	$0	$4,488	$22,442
5.05	Decon Turbine Building - Unit 3	$100	$9[illegible]	$3,925	$0	$1,030	$5,150
5.06	Decon Containment Building - Unit 2	$6,056	$3,318	$54,825	$0	$16,050	$80,249
5.07	Decon Penetration Building - Unit 2	$1,065	$3[illegible]	$2,933	$0	$1,087	$5,437
5.08	Decon Safety Equipment and MSIV Building - Unit 2	$911	$396	$5,777	$0	$1,771	$8,854
5.09	Decon Fuel Handling Building - Unit 2	$1,2[illegible]5	$577	$16,101	$0	$4,488	$22,442
5.10	Decon Turbine Building - Unit 2	$1[illegible]0	$95	$3,925	$0	$1,030	$5,150
5.11	Decon Auxiliary Radwaste Building - Common	[illegible]043	$691	$17,999	$0	$4,908	$24,541
5.12	Decon Auxiliary Control Building - Common	$19[illegible]	$163	$38	$0	$100	$499
5.13	Decon Condensate Area and Tunnels - Units 2 & 3	$375	$316	$403	$0	$274	$1,368
5.14	Excavate, Remove and Dispose of Yard Area Drains	$1,159	$128	$240	$0	$382	$1,908
5.15	Remove and Dispose of Contaminated Sumps, Trenches and Pavement	$185	$21	$746	$0	$238	$1,191
5.16	Remove and Dispose of Radiologically Contaminated Soil	$192	$216	$1,158	$0	$392	$1,958
5.17	Segment, Package and Dispose of Contaminated Decon Equipment [illegible] Tool[illegible]g	$38	$6	$92	$0	$34	$170
5.18	Radiological Survey of Structures During Decon	$4,702	$3,666	$0	$0	$1,255	$9,623
Distributed	**Subtotal**	**$26,600**	**$14,676**	**$187,585**	**$0**	**$56,379**	**$285,240**
Undistributed							
1.01	Utility Staff	$29,516	$0	$0	$0	$7,379	$36,895
1.02	Utility Staff HP Supplies	$0	$997	$0	$0	$249	$1,247
1.03	Security Guard Force	$2,520	$0	$0	$0	$630	$3,150
1.04	Security Related Expenses	$560	$0	$0	$0	$140	$701
1.05	Insurance	$0	$0	$0	$1,985	$496	$2,481
1.06	Site Lease and Easement Expenses	$0	$0	$0	$567	$85	$652
1.07	NRC Decommissioning Fees	$0	$0	$0	$2,886	$722	$3,608
1.08	Materials and Services	$0	$1,668	$0	$0	$417	$2,086
1.09	DAW Disposal	$0	$0	$464	$0	$116	$580
1.10	Energy	$0	$0	$0	$2,336	$584	$2,920

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
1.11	Decommissioning General Contractor Staff	$56,286	$0	$	$0	$14,071	$70,357
1.12	DGC HP Supplies	$0	$3,170	$0	$0	$792	$3,962
1.13	Craft Worker Training	$1,693	$0	$	$0	$423	$2,116
1.14	Workers Compensation Insurance	$0	$0	$0	$341	$85	$426
1.15	Community Outreach	$862	$	$0	$964	$457	$2,283
1.16	Property Tax	$0	$	$0	$2,837	$709	$3,547
1.18	Utilities (Water, gas, phone)	$0	$41	$0	$0	$103	$517
1.19	Tools and Equipment	$0	$204	$0	$0	$51	$255
1.20	Non-Process Computers	$0	$1	$0	$0	$47	$236
1.21	Telecommunications	$0	$189	$0	$0	$47	$236
1.22	Personal Computers	$	$0	$0	$71	$18	$88
1.24	Environmental Permits and Fees	$	$0	$0	$3,594	$899	$4,493
1.25	Decommissioning Advisor	$0	$0	$0	$825	$206	$1,031
Undistributed	**Subtotal**	**$91,437**	**$6,832**	**$464**	**$16,406**	**$28,728**	**$143,866**
Decon Pd 5	**Subtotal**	**$118,037**	**$21,508**	**$188,049**	**$16,406**	**$85,106**	**$429,106**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
Decon Pd 6	**License Termination During Demolition**						
Distributed							
6.01	Final Status Survey	$9,613	$3,088	$0	$2,360	$2,259	$17,320
6.02	Prepare Final Report of Dismantling Program	$164	$4	$0	$0	$42	$210
Distributed	**Subtotal**	**$9,777**	**$3,091**	**$0**	**$2,360**	**$2,301**	**$17,530**
Undistributed							
1.01	Utility Staff	$1,378	$0	$0	$0	$345	$1,723
1.04	Security Related Expenses	$4	$0	$0	$0	$1	$5
1.07	NRC Decommissioning Fees	$0	$0	$0	$13,535	$3,384	$16,919
1.08	Materials and Services	$0	$47	$0	$0	$12	$58
1.09	DAW Disposal	$0	$0	$62	$0	$16	$78
1.10	Energy	$0	$0	$0	$1,872	$468	$2,340
1.11	Decommissioning General Contractor Staff	$3,251	$0	$0	$0	$163	$814
1.12	DGC HP Supplies	$0	$301	$0	$0	$75	$376
1.15	Community Outreach	$1,386	$0	$0	$2,666	$1,263	$6,315
1.18	Utilities (Water, gas, phone)	$0	$10	$0	$0	$3	$13
Undistributed	**Subtotal**	**$4,420**	**$357**	**$62**	**$18,074**	**$5,728**	**$28,641**
Decon Pd 6	**Subtotal**	**$14,197**	**$3,449**	**$62**	**$20,434**	**$8,029**	**$46,171**
A. License Termination	**Subtotal**	**$812,119**	**$150,936**	**$566,266**	**$171,959**	**$410,965**	**$2,112,246**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
B. Spent Fuel							
SNF Pd 1	**Spent Fuel Management Transition**						
Distributed							
7.01	Security Shut Down Strategy	$0	$0	$0	$8,388	$0	$8,388
7.02	Design and Fabricate Spent Fuel Canisters	$0	$0	$0	$8,842	$0	$8,842
7.03	Post Fukushima Modifications - Unit 2	$0	$0	$0	$126	$0	$126
7.05	Cyber Security Modifications	$0	$0	$0	$1,901	$0	$1,901
Distributed	**Subtotal**	**$0**	**$0**	**$0**	**$19,258**	**$0**	**$19,258**
Undistributed							
2.01	Utility Spent Fuel Staff	$38,478	$0	$0	$0	$0	$38,478
2.04	Security Guard Force	$69,889	$0	$0	$0	$0	$69,889
2.09	Emergency Preparedness Fees	$0	$0	$0	$2,340	$0	$2,340
2.10	Spent Fuel Maintenance	$0	$0	$0	$32	$0	$32
Undistributed	**Subtotal**	**$108,367**	**$0**	**$0**	**$2,372**	**$0**	**$110,739**
SNF Pd 1	**Subtotal**	**$108,367**	**$0**	**$0**	**$21,630**	**$0**	**$129,997**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF Pd 2	**Spent Fuel Transfer to Dry Storage**						
Distributed							
8.01	Security Shut Down Strategy	$0	$0	$0	$2,855	$714	$3,569
8.02	Decay Heat Analysis	$0	$0	$0	$105	$26	$131
8.03	Zirconium Fire/ Shine Analysis	$0	$0	$0	$105	$26	$131
8.05	NRC Review of Irradiated Fuel Management Plan	$0	$0	$0	$105	$26	$131
8.07	ISFSI Pad Study	$0	$0	$0	$103	$26	$129
8.08	Design ISFSI Expansion	$0	$0	$0	$3,150	$788	$3,938
8.09	Construct ISFSI Expansion	$0	$0	$0	$33,600	$8,400	$42,000
8.10	Purchase and Fabrication of Spent Fuel Canisters and AHSMs - Unit 2	$0	$49,613	$0	$0	$12,403	$62,016
8.11	Purchase and Fabrication Spent Fuel Canisters and AHSMs - Unit 3	$0	$50,794	$0	$0	$12,698	$63,492
8.12	Deliver and Load Spent Fuel Canisters and Transfer to ISFSI - Unit 2	$71,3[illegible]	$17,478	$0	$0	$22,204	$111,021
8.13	Deliver and Load Spent Fuel Canisters and Transfer to ISFSI - Unit 3	$7[illegible]37	$17,894	$0	$0	$22,733	$113,664
Distributed	**Subtotal**	**$144,375**	**$135,779**	**$0**	**$40,023**	**$80,044**	**$400,221**
Undistributed							
2.01	Utility Spent Fuel Staff	$90,824	$0	$0	$0	$22,706	$113,530
2.02	Utility Staff HP Supplies	$0	$6,590	$0	$0	$1,647	$8,237
2.04	Security Guard Force	$112,313	$0	$0	$0	$28,078	$140,391
2.05	Security Related Expenses	$1,334	$0	$0	$0	$333	$1,667
2.06	Insurance	$0	$0	$0	$4,408	$1,102	$5,510
2.08	NRC Spent Fuel Fees	$0	$0	$0	$1,107	$277	$1,383
2.09	Emergency Preparedness Fees	$0	$0	$0	$18,756	$4,689	$23,445
2.10	Spent Fuel Maintenance	$0	$0	$0	$2,131	$533	$2,664
2.11	Materials and Services	$0	$5,848	$0	$0	$1,462	$7,310
2.12	DAW Disposal	$0	$0	$275	$0	$69	$343
2.13	Energy	$0	$0	$0	$3,991	$998	$4,989
2.15	Craft Worker Training	$2,119	$0	$0	$0	$530	$2,649
2.18	Utilities (Water, gas, phone)	$0	$3,572	$0	$0	$893	$4,465
2.22	Personal Computers	$0	$0	$0	$14	$3	$17
Undistributed	**Subtotal**	**$206,590**	**$16,010**	**$275**	**$30,406**	**$63,320**	**$316,601**
SNF Pd 2	**Subtotal**	**$350,965**	**$151,789**	**$275**	**$70,429**	**$143,364**	**$716,822**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF Pd 3	**Dry Storage During Decommissioning - Units 1, 2 and 3**						
Undistributed							
2.01	Utility Spent Fuel Staff	$39,894	$0	$0	$0	$9,973	$49,867
2.02	Utility Staff HP Supplies	$0	$1,487	$0	$0	$372	$1,859
2.04	Security Guard Force	$45,944	$0	$0	$0	$11,486	$57,430
2.05	Security Related Expenses	$2,556	$0	$0	$0	$639	$3,195
2.08	NRC Spent Fuel Fees	$0	$0	$0	$2,302	$576	$2,878
2.10	Spent Fuel Maintenance	$0	$0	$0	$1,478	$370	$1,848
2.11	Materials and Services	$0	$2,0[illegible]	$0	$0	$504	$2,522
2.13	Energy	$0	$0	$0	$1,209	$302	$1,511
2.18	Utilities (Water, gas, phone)	$0	$1,380	$0	$0	$345	$1,725
2.22	Personal Computers	$0	$0	$0	$12	$3	$15
Undistributed	**Subtotal**	**$88,393**	**$4,884**	**$0**	**$5,001**	**$24,570**	**$122,849**
SNF Pd 3	**Subtotal**	**$88,393**	**$4,884**	**$0**	**$5,001**	**$24,570**	**$122,849**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF Pd 4	**Dry Storage Only - Units 1, 2 and 3**						
Undistributed							
2.01	Utility Spent Fuel Staff	$12,687	$0	$0	$0	$3,172	$15,859
2.02	Utility Staff HP Supplies	$0	$882	$0	$0	$220	$1,102
2.03	Additional Staff for Spent Fuel Shipping	$1,119	$0	$0	$0	$280	$1,398
2.04	Security Guard Force	$14,949	$0	$0	$0	$3,737	$18,687
2.05	Security Related Expenses	$2,506	$0	$0	$0	$626	$3,132
2.06	Insurance	$0	$0	$0	$2,538	$634	$3,172
2.07	Site Lease and Easement Expenses	$0	$0	$0	$1,154	$173	$1,327
2.08	NRC Spent Fuel Fees	$0	$0	$0	$1,638	$409	$2,047
2.10	Spent Fuel Maintenance	$0	$0	$0	$481	$120	$601
2.11	Materials and Services	$0	$778	$0	$0	$194	$972
2.13	Energy	$0	$0	$0	$393	$98	$492
2.16	Workers Compensation Insurance	$0	$0	$0	$694	$173	$867
2.17	Property Tax	$0	$0	$0	$6,412	$1,603	$8,015
2.18	Utilities (Water, gas, phone)	$0	$475	$0	$0	$119	$594
2.20	Non-Process Computers	$0	$192	$0	$0	$48	$240
2.21	Telecommunications	$0	$192	$0	$0	$48	$240
2.22	Personal Computers	$0	$0	$0	$15	$4	$18
Undistributed	**Subtotal**	**$31,261**	**$2,519**	**$0**	**$13,325**	**$11,661**	**$58,765**
SNF Pd 4	**Subtotal**	**$31,261**	**$2,519**	**$0**	**$13,325**	**$11,661**	**$58,765**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF Pd 5	**Dry Storage Only - Units 2 and 3**						
Undistributed							
2.01	Utility Spent Fuel Staff	$48,480	$0	$0	$0	$12,120	$60,601
2.02	Utility Staff HP Supplies	$0	$3,369	$0	$0	$842	$4,211
2.03	Additional Staff for Spent Fuel Shipping	$4,275	$0	$0	$0	$1,069	$5,344
2.04	Security Guard Force	$57,126	$0	$0	$0	$14,281	$71,407
2.05	Security Related Expenses	$4,124	$0	$0	$0	$1,031	$5,155
2.06	Insurance	$0	$0	$0	$9,698	$2,425	$12,123
2.07	Site Lease and Easement Expenses	$0	$0	$0	$4,409	$661	$5,071
2.08	NRC Spent Fuel Fees	$0	$0	$0	$6,259	$1,565	$7,823
2.10	Spent Fuel Maintenance	$0	$0	$0	$1,838	$459	$2,297
2.11	Materials and Services	$0	$2,972	$0	$0	$743	$3,715
2.13	Energy	$0	$0	$0	$1,503	$376	$1,879
2.16	Workers Compensation Insurance	$0	$0	$0	$2,651	$663	$3,314
2.17	Property Tax	$0	$0	$0	$22,053	$5,513	$27,566
2.18	Utilities (Water, gas, phone)	$0	$1,816	$0	$0	$454	$2,270
2.20	Non-Process Computers	$0	$735	$0	$0	$184	$919
2.21	Telecommunications	$0	$735	$0	$0	$184	$919
2.22	Personal Computers	$0	$0	$0	$32	$8	$40
Undistributed	**Subtotal**	**$114,005**	**$9,627**	**$0**	**$48,443**	**$42,578**	**$214,653**
SNF Pd 5	**Subtotal**	**$114,005**	**$9,627**	**$0**	**$48,443**	**$42,578**	**$214,653**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF D&D Pd 1	**ISFSI License Termination**						
Distributed							
12.01	Preparation and NRC Review of License Termination Plan	$116	$0	$0	$163	$70	$349
Distributed	**Subtotal**	**$116**	**$0**	**$0**	**$163**	**$70**	**$349**
Undistributed							
2.01	Utility Spent Fuel Staff	$366	$0	$0	$0	$91	$457
2.02	Utility Staff HP Supplies	$0	$11	$0	$0	$3	$14
2.04	Security Guard Force	$181	$0	$0	$0	$45	$226
2.05	Security Related Expenses	$70	$0	$0	$0	$18	$88
2.06	Insurance	$0	$0	$0	$215	$54	$269
2.07	Site Lease and Easement Expenses	$0	$0	$0	$98	$15	$112
2.08	NRC Spent Fuel Fees	$0	$0	$0	$75	$19	$94
2.11	Materials and Services	$0	$17	$0	$0	$4	$21
2.13	Energy	$0	$0	$0	$102	$26	$128
2.16	Workers Compensation Insurance	$0	$0	$0	$59	$15	$73
2.17	Property Tax	$0	$0	$0	$543	$136	$679
2.18	Utilities (Water, gas, phone)	$0	$7	$0	$0	$2	$9
Undistributed	**Subtotal**	**$617**	**$36**	**$0**	**$1,092**	**$426**	**$2,172**
SNF D&D Pd 1	**Subtotal**	**$733**	**$36**	**$0**	**$1,255**	**$496**	**$2,520**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SNF D&D Pd 2	**ISFSI Demolition**						
Distributed							
13.01	Install GARDIAN Bulk Assay System	$0	$0	$0	$525	$131	$656
13.02	Decon AHSMs	$339	$147	$443	$0	$232	$1,161
13.03	Final Status Survey of ISFSI	$1,589	$256	$0	$0	$277	$2,122
13.04	Clean Demolition of ISFSI AHSMs and Pad	$4,094	$290	$3,333	$0	$2,504	$12,521
13.05	Clean Demolition of ISFSI Support Structures	$1,126	$45	$1,372	$0	$739	$3,696
13.06	Restore ISFSI Site	$246	$161	$0	$0	$102	$509
13.07	Preparation of Final Report on Decommissioning and NRC Review	$52	$0	$0	$0	$13	$65
Distributed	**Subtotal**	**$7,446**	**$3,612**	**$5,148**	**$525**	**$3,998**	**$20,729**
Undistributed							
2.01	Utility Spent Fuel Staff	$1,80	$0	$0	$0	$450	$2,251
2.02	Utility Staff HP Supplies	$0	$72	$0	$0	$18	$90
2.04	Security Guard Force	$704	$0	$0	$0	$176	$880
2.05	Security Related Expenses	$37	$0	$0	$0	$9	$46
2.11	Materials and Services	$0	$93	$0	$0	$23	$116
2.12	DAW Disposal	$0	$0	$7	$0	$2	$8
2.13	Energy	$0	$0	$0	$268	$67	$334
2.14	Decommissioning General Contractor Staff	$4,525	$0	$0	$0	$1,131	$5,656
2.15	Craft Worker Training	$189	$0	$0	$0	$47	$236
2.18	Utilities (Water, gas, phone)	$0	$35	$0	$0	$9	$43
2.24	DGC HP Supplies	$0	$159	$0	$0	$40	$199
Undistributed	**Subtotal**	**$7,255**	**$359**	**$7**	**$268**	**$1,972**	**$9,861**
SNF D&D Pd 2	**Subtotal**	**$14,701**	**$3,972**	**$5,154**	**$793**	**$5,970**	**$30,590**
B. Spent Fuel	**Subtotal**	**$708,425**	**$172,826**	**$5,429**	**$160,876**	**$228,639**	**$1,276,196**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
C. Site Restoration							
SR Pd 1	**Transition to Site Restoration**						
Distributed							
14.01	Mesa Site Phase I and II Site Assessment	$0	$0	$0	$42	$11	$53
14.02	Disposition Hazardous Waste from Mesa Site	$0	$0	$0	$211	$106	$317
14.03	Mesa Site Characterization Survey	$988	$261	$0	$0	$312	$1,561
14.04	Fuel Cancellation Expense	$0	$0	$0	$17,679	$0	$17,679
Distributed	**Subtotal**	**$988**	**$261**	**$0**	**$17,932**	**$428**	**$19,610**
Undistributed							
3.05	Site Lease and Easement Expenses	$0	$0	$0	$1,030	$0	$1,030
3.11	Severance	$0	$0	$0	$109,850	$0	$109,850
Undistributed	**Subtotal**	**$0**	**$0**	**$0**	**$110,880**	**$0**	**$110,880**
SR Pd 1	**Subtotal**	**$988**	**$261**	**$0**	**$128,812**	**$428**	**$130,489**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SR Pd 2	**Building Demolition During Decommissioning**						
Distributed							
15.01	Prepare Site Restoration Demolition Plan and Schedule	$684	$10	[illegible]	$0	$173	$866
15.02	Obtain Required Permits For Mesa, South Access and South Yard	$209	$4	$0	$0	$53	$266
15.03	Demolish Service Building (K-10, 20, 30)	$250	$189	$481	$0	$230	$1,150
15.04	Demolish South Security Processing Facility (K-70)	$46	[illegible]44	$122	$0	$53	$264
15.05	Demolish Staging Warehouse	$67	$5[illegible]	$126	$0	$62	$311
15.06	Demolish Administration Building (K-40/50)	$367	$258	$565	$0	$297	$1,487
15.07	Demolish South Yard Area Buildings T-10, 20, 60 and Haz Mat.	$670	$5[illegible]	$1,370	$0	$658	$3,288
15.08	Demolish REMS Staging Pad	$98	$184	$549	$0	$208	$1,038
15.09	Demolish Mesa Buildings	$2,7[illegible]8	$1,879	$6,006	$0	$2,668	$13,341
15.10	Remove Underground Fuel Storage Tanks	$[illegible]6	$22	$0	$21	$25	$123
15.11	Demolish Mesa Roads and Parking Lots	$[illegible]82	$400	$0	$0	$245	$1,227
15.12	Finish Grading and Re-vegetate Mesa Site	$29[illegible]	$404	$0	$0	$176	$878
Distributed	**Subtotal**	**$[illegible],114**	**$4,038**	**$9,219**	**$21**	**$4,848**	**$24,239**
Undistributed							
3.01	Utility Staff	$2,563	$0	$0	$0	$641	$3,204
3.03	Security Related Expenses	$898	$0	$0	$0	$224	$1,122
3.05	Site Lease and Easement Expenses	$0	$0	$0	$4,266	$640	$4,906
3.06	Materials and Services	$0	$134	$0	$0	$34	$168
3.08	Decommissioning General Contractor Staff	$4,248	$0	$0	$0	$1,062	$5,310
3.09	Craft Worker Training	$318	$0	$0	$0	$80	$398
3.11	Severance	$0	$0	$0	$8,688	$2,172	$10,860
3.13	Utilities (Water, gas, phone)	$0	$29	$0	$0	$7	$36
Undistributed	**Subtotal**	**$8,027**	**$164**	**$0**	**$12,955**	**$4,860**	**$26,005**
SR Pd 2	**Subtotal**	**$14,141**	**$4,201**	**$9,219**	**$12,975**	**$9,708**	**$50,245**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SR Pd 3	**Subsurface Demolition Engineering and Permitting**						
Distributed							
16.01	Hydrogeologic Investigation and Outfall Conduit Survey	$297	$131	$0	$105	$133	$667
16.02	Subsurface Structure Removal Engineering Planning and Design	$1,264	$33	$0	$0	$324	$1,621
16.03	Environmental Impacts Analyses for Lease Termination Activities	$581	$50	$0	$525	$289	$1,445
16.04	Final Site Grading and Shoreline Protection Engineering Planning and Design	$242	$13	$0	$0	$64	$319
16.05	Obtain Required Permits and Approvals	$1,856	$2	$0	$263	$535	$2,673
Distributed	**Subtotal**	**$4,240**	**$248**	**$0**	**$893**	**$1,345**	**$6,726**
Undistributed							
3.03	Security Related Expenses	$275	$0	$0	$0	$69	$344
3.11	Severance	$0	$0	$0	$24,674	$6,168	$30,842
Undistributed	**Subtotal**	$27	**$0**	**$0**	**$24,674**	**$6,237**	**$31,186**
SR Pd 3	**Subtotal**	**$4,5**	**$248**	**$0**	**$25,566**	**$7,582**	**$37,912**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SR Pd 4	**Building Demolition to 3 Feet Below Grade**						
Distributed							
17.01	Procure Clean Building Demolition Equipment	$0	$10,691	$0	$0	$2,673	$13,363
17.02	Install Temporary Structures	$11	$190	$0	$0	$30	$230
17.03	Install Erosion and Sediment Controls	$123	$14	$0	$0	$34	$172
17.04	Remove Cathodic Protection Trench	$1,813	$1,327	$22	$0	$840	$4,201
17.05	Remove Protected Area Security Fencing	$57	$1	$0	$0	$19	$95
17.06	Remove Protected Area Pavement	$139	$97	$755	$0	$248	$1,239
17.07	Detension and Remove Unit 3 Containment Builidng Tendons	$0	$0	$0	$4,200	$1,050	$5,250
17.08	Demolish Diesel Generator Building - Unit 3	$618	$245	$794	$0	$414	$2,072
17.09	Demolish Condensate Building and Transformer Pads - Unit 3	$972	$1,688	$3,344	$0	$1,501	$7,505
17.10	Demolish Full Flow Area and Turbine Building - Unit 3	$3,241	$1,149	$3,444	$0	$1,953	$9,767
17.11	Demolish Unit 3 Fuel Handling Building to 3-Feet Below Grade	$269	$328	$1,534	$0	$533	$2,663
17.12	Demolish Penetration Building - Unit 3	$291	$167	$642	$0	$275	$1,377
17.13	Demolish Safety Equipment and MSIV Building - Unit 3	$336	$403	$1,858	$0	$649	$3,246
17.14	Demolish Unit 3 Containment Building to 3-Feet Below Grade	$2,418	$1,351	$6,198	$0	$2,492	$12,459
17.15	Detension and Remove Unit 2 Containment Builidng Tendons	$0	$0	$0	$4,200	$1,050	$5,250
17.16	Demolish Diesel Generator Building - Unit 2	$128	$168	$787	$0	$271	$1,353
17.17	Demolish Condensate Building and Transformer Pads - Unit 2	$972	$1,688	$3,344	$0	$1,501	$7,505
17.18	Demolish Full Flow Area and Turbine Building - Unit 2	$3,734	$1,186	$3,447	$0	$2,092	$10,458
17.19	Demolish Unit 2 Fuel Handling Building to 3-Feet Below Grade	$269	$328	$1,534	$0	$533	$2,663
17.20	Demolish Penetration Building - Unit 2	$99	$136	$639	$0	$219	$1,093
17.21	Demolish Safety and MSIV Equipment Building - Unit 2	$336	$403	$1,859	$0	$649	$3,247
17.22	Demolish Unit 2 Containment Building to 3-Feet Below Grade	$2,418	$1,351	$6,198	$0	$2,492	$12,459
17.23	Demolish AWS Building	$1,108	$1,050	$2,925	$0	$1,271	$6,354
17.24	Demolish Building L-50	$59	$33	$67	$0	$40	$198
17.25	Demolish Maintenance Building 4 (B-64/B-65)	$24	$13	$25	$0	$16	$78
17.26	Demolish Maintenance Building 5 (B-62/B-63)	$35	$20	$37	$0	$23	$115
17.27	Demolish Outage Control Center	$98	$57	$148	$0	$76	$378
17.28	Demolish Maintenance Building 2 (B-49/B-50)	$49	$32	$82	$0	$41	$205
17.29	Demolish Maintenance Building 1 (B-43/B-44)	$163	$196	$857	$0	$304	$1,520
17.30	Demolish Auxilary Radwaste Building - Common	$1,521	$1,984	$9,214	$0	$3,180	$15,898
17.31	Demolish Auxilary Control Building - Common	$1,491	$811	$3,219	$0	$1,380	$6,901

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
17.32	Remove Systems and Demolish Make-Up Demineralizer Structures	$737	$122	$47	$0	$332	$1,662
17.33	Install Concrete Plugs in Intake and Discharge Structures	$272	$1,614	$0	$0	$472	$2,358
17.34	Demolish Intake and Discharge Structures to 3-Feet Below Grade	$82	$114	$5	$0	$183	$914
Distributed	**Subtotal**	**$23,866**	**$29,172**	**$5,978**	**$8,400**	**$28,834**	**$144,249**
Undistributed							
3.01	Utility Staff	$12,553	$0	$0	$0	$3,138	$15,691
3.02	Security Guard Force	$2,480	$0	$0	$0	$620	$3,100
3.03	Security Related Expenses	$1,158	$0	$0	$0	$290	$1,448
3.04	Insurance	$0	$0	$0	$3,995	$999	$4,993
3.05	Site Lease and Easement Expenses	$0	$0	$0	$1,340	$201	$1,541
3.06	Materials and Services	$0	$751	$0	$0	$188	$938
3.07	Energy	$0	$0	$0	$1,184	$296	$1,480
3.08	Decommissioning General Contractor Staff	$50,906	$0	$0	$0	$12,727	$63,633
3.09	Craft Worker Training	$1,999	$0	$0	$0	$500	$2,498
3.10	Workers Compensation Insurance	$0	$0	$0	$806	$201	$1,007
3.11	Severance	$0	$0	$0	$7,273	$1,818	$9,091
3.12	Property Tax	$0	$0	$0	$6,701	$1,675	$8,377
3.13	Utilities (Water, gas, phone)	$0	$214	$0	$0	$53	$267
3.14	Tools and Equipment	$0	$156	$0	$0	$39	$195
3.15	Non-Process Computers	$0	$223	$0	$0	$56	$279
3.16	Telecommunications	$0	$223	$0	$0	$56	$279
Undistributed	**Subtotal**	**$69,096**	**$1,567**	**$0**	**$21,298**	**$22,856**	**$114,817**
SR Pd 4	**Subtotal**	**$92,962**	**$30,738**	**$53,978**	**$29,698**	**$51,690**	**$259,066**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SR Pd 5	**Subgrade Structure Removal Below - 3 Feet**						
Distributed							
18.01	Procure Subsurface Structure Demolition Equipment	$0	$6,630	$0	$0	$1,658	$8,288
18.02	Install Sheet Piling and Excavation Shoring	$8,468	$17,219	$0	$0	$6,422	$32,109
18.03	Install Dewatering System and Effluent Treatment and Discharge Controls	$0	$0	$0	$9,651	$2,413	$12,064
18.04	Demolish and Backfill Unit 3 Condensate Storage Area Below -3 Feet	$162	$293	$942	$0	$349	$1,746
18.05	Demolish and Backfill Unit 3 Diesel Generator Builidng Below -3 Feet	$104	$155	$486	$0	$186	$932
18.06	Demolish and Backfill Unit 3 Fuel Handling Building Below -3 Feet	$271	$696	$1,170	$0	$534	$2,671
18.07	Demolish and Backfill Unit 3 Radwaste and Control Building Below -3 Feet	$1,268	$3,1[illegible]	$5,419	$0	$2,471	$12,355
18.08	Demolish and Backfill Unit 3 Turbine Building Structure Below 9 Ft Elevation	$3,404	$8,885	$13,496	$0	$6,446	$32,231
18.09	Demolish and Backfill Unit 3 Safety Equipment Building Below -3 Feet	$7[illegible]4	$1,873	$2,736	$0	$1,328	$6,641
18.10	Demolish and Backfill Unit 3 Penetration Area Below -3 Feet	$2[illegible]2	$570	$1,322	$0	$541	$2,706
18.11	Demolish and Backfill Unit 3 Full Flow Building Below -3 Feet	$153	$517	$436	$0	$276	$1,382
18.12	Demolish and Backfill Unit 3 Containment Building Below -3 Feet	$94[illegible]	$2,027	$5,088	$0	$2,015	$10,077
18.13	Demolish and Backfill Unit 2 Condensate Storage Area Below -3 Feet	$162	$293	$942	$0	$349	$1,746
18.14	Demolish and Backfill Unit 2 Diesel Generator Builidng Below -3 Feet	$104	$155	$486	$0	$186	$932
18.15	Demolish and Backfill Unit 2 Fuel Handling Building Below -3 Feet	$271	$696	$1,170	$0	$534	$2,671
18.16	Demolish and Backfill Unit 2 Radwaste and Control Building Below -3 [illegible]t	$1,273	$3,208	$5,491	$0	$2,493	$12,466
18.17	Demolish and Backfill Unit 2 Turbine Building Structure Below 9 F[illegible]vati[illegible]	$3,406	$8,886	$13,496	$0	$6,447	$32,234
18.18	Demolish and Backfill Unit 2 Safety Equipment Building B[illegible]low [illegible] Feet	$704	$1,873	$2,736	$0	$1,328	$6,641
18.19	Demolish and Backfill Unit 2 Penetration Area Below -3 Fee[illegible]	$272	$570	$1,322	$0	$541	$2,706
18.20	Demolish and Backfill Unit 2 Full Flow Building Belo[illegible] Fee[illegible]	$153	$517	$436	$0	$276	$1,382
18.21	Demolish and Backfill Unit 2 Containment Buil[illegible]ing Be[illegible]w -3 F[illegible]	$946	$2,027	$5,088	$0	$2,015	$10,077
18.22	Demolish and Backfill Intake Structure Below -3 Fe[illegible]	$6,664	$12,970	$36,706	$0	$14,085	$70,426
18.23	Remove Off Shore Intake and Outfall Conduits	$12,406	$44,308	$19,580	$0	$19,073	$95,367
18.24	Remove Sheet Piling and Excavation Shoring	$11,776	$0	$0	$0	$2,944	$14,721
18.25	Remove Dewatering System and Effluent Treatment	$0	$0	$0	$2,308	$577	$2,885
18.26	Finish Grading and Re-Vegetate Site	$945	$813	$0	$0	$440	$2,198
18.27	Remove Temporary Structures	$58	$48	$0	$0	$16	$122
Distributed	**Subtotal**	**$54,891**	**$118,428**	**$118,547**	**$11,959**	**$75,946**	**$379,772**
Undistributed							
3.01	Utility Staff	$7,082	$0	$0	$0	$1,771	$8,853

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
3.02	Security Guard Force	$1,830	$0	$	$0	$458	$2,288
3.03	Security Related Expenses	$139	$0	$0	$0	$35	$173
3.04	Insurance	$0	$0	$	$2,948	$737	$3,685
3.05	Site Lease and Easement Expenses	$0	$0	$0	$989	$148	$1,137
3.06	Materials and Services	$0	$41	$0	$0	$104	$519
3.07	Energy	$0	$	$0	$814	$204	$1,018
3.08	Decommissioning General Contractor Staff	$26,176	$	$0	$0	$6,544	$32,720
3.09	Craft Worker Training	$983	$	$0	$0	$246	$1,229
3.10	Workers Compensation Insurance	$0	$	$0	$595	$149	$743
3.11	Severance	$0	$0	$0	$2,050	$513	$2,563
3.12	Property Tax	$	$0	$0	$4,946	$1,237	$6,183
3.13	Utilities (Water, gas, phone)	$	$128	$0	$0	$32	$160
3.14	Tools and Equipment	$0	$73	$0	$0	$18	$91
3.15	Non-Process Computers	$	$165	$0	$0	$41	$206
3.16	Telecommunications	$0	$165	$0	$0	$41	$206
Undistributed	**Subtotal**	**$36,211**	**$946**	**$0**	**$12,343**	**$12,276**	**$61,775**
SR Pd 5	**Subtotal**	**$91,102**	**$119,373**	**$118,547**	**$24,302**	**$88,222**	**$441,547**

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
SR Pd 6	**Final Site Restoration and Lease Termination**						
Distributed							
19.01	Obtain Required Permits and Approvals	$404	$20	[illegible]	$131	$139	$693
19.02	Install Temporary Structures	$6	$35	$0	$0	$6	$48
19.03	Procure Site Restoration Equipment	$0	$404	$0	$0	$101	$505
19.04	Install Temporary Seawall or Coffer Dam	$8,551	[illegible]	$0	$0	$6,544	$32,718
19.05	Install Dewatering System and Effluent Treatment and Discharge Controls	$0	[illegible]	$0	$1,427	$357	$1,784
19.06	Remove and Stockpile Existing Seawall Erosion Protection	$6	$11	$0	$0	$4	$21
19.07	Remove Unit 2 and 3 Seawall and Pedestrian Walkway	$1,005	[illegible]	$8,319	$0	$2,706	$13,530
19.08	Remove Remaining Intake and Outfall Box Culvert	$336	[illegible]	$2,188	$0	$748	$3,739
19.09	Remove Temporary Seawall or Coffer Dam	$11,[illegible]	$143	$0	$0	$2,983	$14,917
19.10	Backfill and Compaction of Excavation	$[illegible]	$1,480	$1,828	$0	$556	$4,265
19.11	Remove Dewatering System and Effluent Treatment	$0	$0	$0	$592	$148	$740
19.12	Install Shoreline Erosion Control and Restoration Features	$[illegible]	$144	$0	$0	$38	$192
19.13	Remove Railroad Tracks, Rails and Ballast	$63	$35	$0	$0	$24	$122
19.14	Remove Gunite Slope Protection	$262	$366	$1,710	$0	$585	$2,923
19.15	Remove Access Roads and Parking Lots	$240	$181	$0	$0	$105	$527
19.16	Finish Grading and Re-Vegetate Site	$27	$28	$0	$0	$14	$68
19.17	Remove Temporary Structures	$8	$7	$0	$0	$2	$18
Distributed	**Subtotal**	**$23,109**	**$22,445**	**$14,045**	**$2,151**	**$15,061**	**$76,810**
Undistributed							
3.01	Utility Staff	$2,219	$0	$0	$0	$555	$2,773
3.04	Insurance	$0	$0	$0	$605	$151	$756
3.05	Site Lease and Easement Expenses	$0	$0	$0	$507	$76	$583
3.06	Materials and Services	$0	$142	$0	$0	$35	$177
3.07	Energy	$0	$0	$0	$418	$104	$522
3.08	Decommissioning General Contractor Staff	$8,062	$0	$0	$0	$2,016	$10,078
3.09	Craft Worker Training	$504	$0	$0	$0	$126	$630
3.10	Workers Compensation Insurance	$0	$0	$0	$305	$76	$381
3.11	Severance	$0	$0	$0	$6,077	$1,519	$7,596
3.12	Property Tax	$0	$0	$0	$2,536	$634	$3,169
3.13	Utilities (Water, gas, phone)	$0	$31	$0	$0	$8	$38

Table 1
SONGS Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

		License Status	POL	Unit 2 Shut Down:	6/7/2013
Decommissioning Alternative	DECON	Fuel Pool Systems	Modified	Unit 3 Shut Down:	6/7/2013
Spent Fuel Alternative	Dry	Repository Opening Date:	1/1/2024		

2014 Dollars in Thousands

No	Item Description	Labor	Equipment	Disposal	Other	Contingency	Total
3.14	Tools and Equipment	$0	$24	$	$0	$6	$31
Undistributed	**Subtotal**	**$10,785**	**$197**	**$0**	**$10,446**	**$5,307**	**$26,735**
SR Pd 6	**Subtotal**	**$33,894**	**$22,642**	**$4,045**	**$12,597**	**$20,367**	**$103,545**
C. Site Restoration	**Subtotal**	**$237,603**	**$177,463**	**$165,790**	**$233,951**	**$177,997**	**$1,022,804**
	Total	**$1,758,148**	**$501,2**	**$767,485**	**$566,786**	**$817,601**	**$4,411,246**

Appendix E

Annual Cash Flow Table

SONGS Annual Cost By Account

Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

Unit No: Unit 2

2014 Dollars in Thousands

Year	License Termination	Spent Fuel	Site Restoration	Total
2013	$25,749	$63,891	$49,067	$138,706
2014	$79,799	$35,719	$15,089	$130,607
2015	$69,196	$106,308	$7,439	$182,943
2016	$54,541	$59,308	$3,730	$117,579
2017	$111,903	$59,308	$1,957	$173,168
2018	$47,520	$59,308	[illegible]	$106,828
2019	$108,328	$27,554	$13,539	$149,420
2020	$185,482	$4,908	[illegible]	$190,426
2021	$79,081	$4,908	$3[illegible]	$84,026
2022	$54,785	$4,908	$1,927	$61,621
2023	$158,207	$4,908	$36	$163,151
2024	$37,930	$4,908	$16,848	$59,687
2025	$2,922	$4,908	$44,621	$52,451
2026	$2,922	$4,908	$19,412	$27,243
2027	$2,922	$4,908	$22,469	$30,299
2028	$2,922	$4,908	$31,688	$39,518
2029	$2,922	$4,908	$66,873	$74,704
2030	$2,922	$4,908	$71,867	$79,697
2031	$2,055	$5,089	$23,181	$30,325
2032	$2,12[illegible]	$7,214	$0	$9,336
2033	$0	$7,214	$0	$7,214
2034	$0	$7,214	$0	$7,214
2035	$0	$7,228	$0	$7,228
2036	$0	$7,665	$0	$7,665
2037	$0	$7,665	$0	$7,665
2038	$0	$7,665	$0	$7,665
2039	$0	$7,665	$0	$7,665
2040	$0	$7,665	$0	$7,665
2041	$0	$7,665	$0	$7,665
2042	$0	$7,665	$0	$7,665
2043	$0	$7,665	$0	$7,665
2044	$0	$7,665	$0	$7,665
2045	$0	$7,665	$0	$7,665
2046	$0	$7,665	$0	$7,665
2047	$0	$7,665	$0	$7,665
2048	$0	$7,665	$0	$7,665

SONGS Annual Cost By Account

Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

Unit No: Unit 2

2014 Dollars in Thousands

Year	License Termination	Spent Fuel	Site Restoration	Total
2049	$0	$7,667	$0	$7,667
2050	$0	$9,974	$20,177	$30,151
2051	$0	$6,573	$11,928	$18,500
2052	$0	$0	$1,377	$1,377
Total	$1,034,230	$623,209	$423,297	$2,080,735

SONGS Annual Cost By Account

Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

Unit No: Unit 3

2014 Dollars in Thousands

Year	License Termination	Spent Fuel	Site Restoration	Total
2013	$26,566	$66,105	$49,067	$141,739
2014	$78,964	$40,156	$15,969	$135,089
2015	$74,096	$112,024	$9,390	$195,509
2016	$61,451	$64,405	$25,227	$151,083
2017	$40,631	$64,405	$3,799	$108,835
2018	$86,348	$64,405	[illegible]	$150,753
2019	$96,521	$29,675	$13,908	$140,104
2020	$120,873	$4,908	[illegible]	$127,916
2021	$194,090	$4,908	[illegible]	$199,574
2022	$135,313	$4,908	$2,467	$142,688
2023	$114,581	$4,908	$1,511	$121,000
2024	$26,874	$4,908	$36,778	$68,560
2025	$2,922	$4,908	$40,655	$48,485
2026	$2,922	[illegible]	$21,676	$29,507
2027	$2,922	[illegible]	$25,848	$33,678
2028	$2,922	[illegible]	$20,945	$28,776
2029	$2,922	[illegible]	$117,321	$125,151
2030	$2,922	$4,908	$116,672	$124,503
2031	$2,055	$5,089	$25,501	$32,645
2032	$2,12[illegible]	$7,214	$0	$9,336
2033	$0	$7,214	$0	$7,214
2034	$0	$7,214	$0	$7,214
2035	$0	$7,228	$0	$7,228
2036	$0	$7,665	$0	$7,665
2037	$0	$7,665	$0	$7,665
2038	$0	$7,665	$0	$7,665
2039	$0	$7,665	$0	$7,665
2040	$0	$7,665	$0	$7,665
2041	$0	$7,665	$0	$7,665
2042	$0	$7,665	$0	$7,665
2043	$0	$7,665	$0	$7,665
2044	$0	$7,665	$0	$7,665
2045	$0	$7,665	$0	$7,665
2046	$0	$7,665	$0	$7,665
2047	$0	$7,665	$0	$7,665
2048	$0	$7,665	$0	$7,665

SONGS Annual Cost By Account

Prompt DECON Base Case, 2024 DOE Acceptance, Dry Storage

Unit No: Unit 3

2014 Dollars in Thousands

Year	License Termination	Spent Fuel	Site Restoration	Total
2049	$0	$7,667	$0	$7,667
2050	$0	$9,974	$23,120	$33,094
2051	$0	$6,573	$45,566	$52,139
2052	$0	$0	$1,377	$1,377
Total	$1,078,016	$652,987	$599,507	$2,330,511