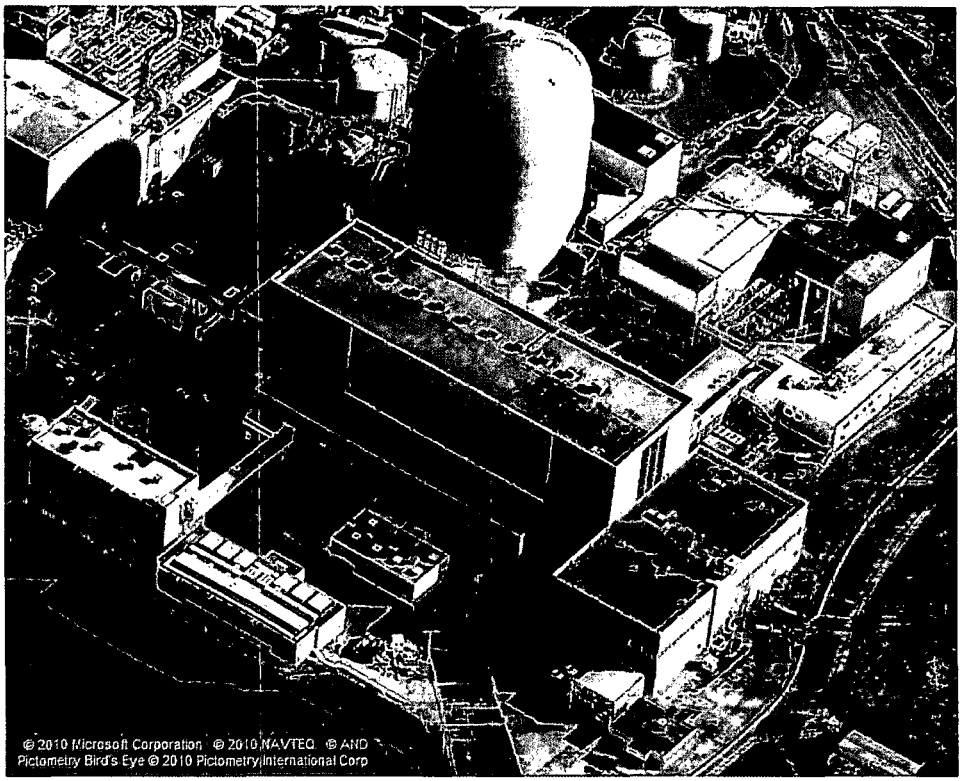
Document E11-1583-006

PRELIMINARY DECOMMISSIONING COST ANALYSIS

for the

INDIAN POINT ENERGY CENTER, UNIT 3



prepared for

Entergy Nuclear

prepared by

TLG Services, Inc.
Bridgewater, Connecticut

December 2010

APPROVALS

Project Manager	William A. Cloutier, Jr.	12/09/2010 Date
Project Engineer	Thomas J. Garrett	12/9/10 Date
Technical Manager	Francis W. Seymore	12/9/10 Date

TABLE OF CONTENTS

FIGURE

TABLE OF CONTENTS

SECTION PAGE

TABLES

APPENDIX

REVISION LOG

No.	CRA No.	Date	Item Revised	Reason for Revision
0		12-09-2010		Original Issue

1. DECOMMISSIONING COST ANALYSIS

This document presents the cost to decommission the Indian Point Energy Center, Unit 3 (IP-3) assuming a cessation of operations after a nominal 40-year operating life in 2015. In accordance with the requirements of 10 CFR 50.75(f)(3), the cost estimate includes an assessment of the major factors that could affect the cost to decommission the IP-3 nuclear unit.

The cost to decommission IP-3 is estimated at $1,141.9 million. The cost is presented in 2010 dollars.

The estimate for IP-3 assumes that it is decommissioned in conjunction with the two adjacent units (the shutdown IP-1 and the currently operating IP-2). As such, there are savings as well as additional costs that are reflected within the estimate from the synergies of site decommissioning and the constraints imposed in working on a complex and congested site. In apportioning site decommissioning costs by unit, not all common costs are shared equitably due to the offset in shutdown dates and some costs elements are impacted by activities or previous operations at the adjacent units.

The cost includes the monies anticipated to be spent for operating license termination, spent fuel storage and site remediation activities. The cost is based on several key assumptions in areas of regulation, component characterization, high-level radioactive waste management, low-level radioactive waste disposal, performance uncertainties (contingency) and site remediation and restoration requirements. Many of these assumptions are discussed in more detail in this document.

Entergy intends to fund the expenditures for license termination (comprising approximately 73% of the total cost) from the decommissioning trust fund currently held by the New York Power Authority (NYPA).[1] The management of the spent fuel, until it can be transferred to the DOE, may be funded from excess trust fund earnings and from proceeds from spent fuel litigation against the Department of Energy (DOE). Expenditures from the trust fund for the management of the spent fuel will not reduce the value of the decommissioning trust fund to below the amount necessary to place and maintain the reactor in safe storage. The licensee would make the appropriate submittals for an exemption, in accordance with 10 CFR 50.12, from the requirements of 10 CFR 50.82(a)(8)(i)(A) in order to use the decommissioning trust funds for non-decommissioning related expenses, as defined by 10 CFR 50.2.

---

1 The decommissioning liability is currently retained, and the trust fund held, by NYPA. This analysis assumes that NYPA will exercise its option to transfer the liability along with the decommissioning trust fund for IP-3 to Entergy on December 12, 2015, in accordance with the terms of the decommissioning agreement for IP-3 between Entergy and NYPA.

1.1 DECOMMISSIONING ALTERNATIVES

The Nuclear Regulatory Commission (NRC) provided general decommissioning guidance in a rule adopted on June 27, 1988.[2] In this rule, the NRC set forth technical and financial criteria for decommissioning licensed nuclear facilities. The regulations addressed planning needs, timing, funding methods, and environmental review requirements for decommissioning. The rule also defined three decommissioning alternatives as being acceptable to the NRC: DECON, SAFSTOR, and ENTOMB.

> DECON is defined as "the alternative in which the equipment, structures, and portions of a facility and site containing radioactive contaminants are removed or decontaminated to a level that permits the property to be released for unrestricted use shortly after cessation of operations."[3]
>
> SAFSTOR is defined as "the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use."[4] Decommissioning is to be completed within 60 years, although longer time periods will be considered when necessary to protect public health and safety.
>
> ENTOMB is defined as "the alternative in which radioactive contaminants are encased in a structurally long-lived material, such as concrete; the entombed structure is appropriately maintained and continued surveillance is carried out until the radioactive material decays to a level permitting unrestricted release of the property."[5] As with the SAFSTOR alternative, decommissioning is currently required to be completed within 60 years.

1.2 REGULATORY GUIDANCE

In 1996, the NRC published revisions to its general requirements for decommissioning nuclear power plants to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in

---

2 U.S. Code of Federal Regulations, Title 10, Parts 30, 40, 50, 51, 70 and 72 "General Requirements for Decommissioning Nuclear Facilities," Nuclear Regulatory Commission, Federal Register Volume 53, Number 123 (p 24018 et seq.), June 27, 1988.

3 Ibid. page 24022, Column 3.

4 Ibid.

5 Ibid. page 24023, Column 2.

the decommissioning process.[6] The amendments allow for greater public participation and better define the transition process from operations to decommissioning. Regulatory Guide 1.184, issued in July 2000, further described the methods and procedures that are acceptable to the NRC staff for implementing the requirements of the 1996 revised rule that relate to the initial activities and the major phases of the decommissioning process. The cost estimate for IP-3 follows the general guidance and sequence presented in the amended regulations.

1.3 BASIS OF COST ESTIMATE

For the purpose of the analysis, IP-3 was assumed to cease operations in December 2015, after 40 years of operations. The unit would then be placed in safe-storage (SAFSTOR), with the spent fuel relocated to an Independent Spent Fuel Storage Installation (ISFSI) to await transfer to a DOE facility. Based upon a 2020 start date for the pickup of spent fuel from the commercial nuclear power generators, Entergy anticipates that the removal of spent fuel from the site could be completed by the year 2047.[7] However, for purposes of this analysis, the plant will remain in storage until 2065, at which time it will be decommissioned and the site released for alternative use without restriction. This sequence of events is delineated in Figure 2, along with major milestone dates.

The decommissioning estimate was developed using the site-specific, technical information relied upon in a decommissioning assessment prepared in 2007 for the site and used as a basis for the preliminary decommissioning cost analyses filed for IP-1 and IP-2.[8] The economic basis was reviewed for the current analysis and updated to reflect current site costs and budgets. The site-specific considerations and assumptions used in the previous evaluation were also revisited. Modifications were incorporated where new information was available.

1.4 METHODOLOGY

The methodology used to develop the estimate followed the basic approach originally presented in the AIF/NESP-036 study report, "Guidelines for

---

6 U.S. Code of Federal Regulations, Title 10, Parts 2, 50, and 51, "Decommissioning of Nuclear Power Reactors," Nuclear Regulatory Commission, Federal Register Volume 61, (p 39278 et seq.), July 29, 1996.

7 Use of the 2020 DOE start date is discussed in Section 2 of the licensee's 10 CFR 50.54(bb) filing submitted concurrently with this cost estimate.

8 Entergy Letter NL-08-144, dated October 27, 2008, "Unit 1 & 2 program for Maintenance of Irradiated Fuel and Preliminary Decommissioning Cost Analysis in accordance with 10 CFR 50.54 (bb) and 10 CFR 50.75(f)(3).

Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates,"[9] and the DOE "Decommissioning Handbook."[10] These documents present a unit cost factor method for estimating decommissioning activity costs that simplifies the calculations. Unit factors for concrete removal ($/cubic yard), steel removal ($/ton), and cutting costs ($/inch) were developed using local labor rates. The activity-dependent costs were then estimated with the item quantities (cubic yards and tons), developed from plant drawings and inventory documents. Removal rates and material costs for the conventional disposition of components and structures relied upon information available in the industry publication, "Building Construction Cost Data," published by R.S. Means.[11]

The unit factor method provides a demonstrable basis for establishing reliable cost estimates. The detail provided in the unit factors, including activity duration, labor costs (by craft), and equipment and consumable costs, ensures that essential elements have not been omitted.

This analysis reflected lessons learned from TLG's involvement in the Shippingport Station decommissioning, completed in 1989, as well as the decommissioning of the Cintichem reactor, hot cells, and associated facilities, completed in 1997. In addition, the planning and engineering for the Pathfinder, Shoreham, Rancho Seco, Trojan, Yankee Rowe, Big Rock Point, Maine Yankee, Humboldt Bay-3, Connecticut Yankee, and San Onofre-1 nuclear units have provided additional insight into the process, the regulatory aspects, and the technical challenges of decommissioning commercial nuclear units.

Work Difficulty Factors

TLG has historically applied work difficulty adjustment factors (WDFs) to account for the inefficiencies in working in a power plant environment. WDFs are assigned to each unique set of unit factors, commensurate with the working conditions. The ranges used for the WDFs were as follows:

- Access Factor 0% to 30%
- Respiratory Protection Factor 0% to 50%

---

9 T.S. LaGuardia et al., "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986.

10 W.J. Manion and T.S. LaGuardia, "Decommissioning Handbook," U.S. Department of Energy, DOE/EV/10128-1, November 1980.

11 "Building Construction Cost Data 2010," Robert Snow Means Company, Inc., Kingston, Massachusetts.

- Radiation/ALARA Factor 0% to 37%
- Protective Clothing Factor 0% to 50%
- Work Break Factor 8.33%

The factors and their associated range of values were originally developed in conjunction with the AIF/NESP-036 study.

Scheduling Program Durations

Activity durations are used to develop the total decommissioning program schedule. The unit cost factors, adjusted for WDFs as described above, are applied against the inventory of materials to be removed, resulting in a total labor hour estimate. The work area (or building area) is then evaluated for the most efficient number of workers/crews for the identified decommissioning activities. The estimated labor requirements are then compared against the available manpower so that an overall duration for removal of components and piping from each work area can be calculated.

The schedule is used to assign carrying costs, which include program management, administration, field engineering, equipment rental, and support services such as quality control and security.

1.5 IMPACT OF DECOMMISSIONING MULTIPLE REACTOR UNITS

In estimating the near-simultaneous decommissioning of three co-located reactor units there can be opportunities to achieve economies of scale, by sharing costs between units, and coordinating the sequence of work activities. There will also be schedule constraints, particularly where there are requirements for specialty equipment and staff, or practical limitations on when final status surveys can take place. The estimate for IP-3 considered that:

- Savings will be realized in program management; in particular costs associated with the more senior positions, from the sequential decommissioning of two, essentially identical reactors. The estimate assumes that IP-2 is the lead unit in decommissioning through the disposition of its reactor vessel and primary system components, at which time IP-3 assumes the lead for its own reactor vessel and primary component removal. Costs for the senior staff positions are only included for the lead unit.
- It is assumed for purposes of this cost estimate that IP-3 will not transfer spent fuel directly from its pool to the ISFSI. As such, the estimate for IP-3

includes the cost to transfer the fuel from the IP-3 pool to the IP-2 pool. The fuel would then be packaged in the IP-2 pool for storage at the ISFSI.

- Decommissioning on a congested site needs to be coordinated. As such, demolition and soil remediation, following the primary decommissioning phase (removal of major source terms and radiological inventory), are conducted as a site-wide activity.
- Station costs, such as ISFSI operations, security, emergency response fees, regulatory agency fees, corporate overhead, and insurance, are shared across the units, as appropriate.

1.6 FINANCIAL COMPONENTS OF THE COST MODEL

TLG's proprietary decommissioning cost model, DECCER, produces a number of distinct cost elements. These direct expenditures, however, do not comprise the total cost to accomplish the project goal (i.e., license termination and site restoration).

1.6.1 Contingency

Inherent in any cost estimate that does not rely on historical data is the inability to specify the precise source of costs imposed by factors such as tool breakage, accidents, illnesses, weather delays, and labor stoppages. In the DECCER cost model, contingency fulfills this role. Contingency is added to each line item to account for costs that are difficult or impossible to develop analytically. Such costs are historically inevitable over the duration of a job of this magnitude; therefore, this cost analysis includes funds to cover these types of contingency events.

Consistent with standard cost estimating practices, contingencies were applied to the decontamination and dismantling costs developed as a "specific provision for unforeseeable elements of cost within the defined project scope, particularly important where previous experience relating estimates and actual costs has shown that unforeseeable events which will increase costs are likely to occur."[12] The cost elements in the estimate were based on ideal conditions; therefore, the types of unforeseeable events that are almost certain to occur in decommissioning, based on industry experience, were addressed through a percentage contingency applied on a line-item basis. This contingency factor is a nearly universal element in all large-scale construction and demolition projects. It should be noted that contingency, as used in this analysis, does not account for price escalation

12 Project and Cost Engineers' Handbook, Second Edition, American Association of Cost Engineers, Marcel Dekker, Inc., New York, New York, p. 239.

and inflation in the cost of decommissioning over the remaining operating life of the nuclear unit or during the extended storage period.

The contingency values are applied to the appropriate components of the estimates on a line item basis. A composite value is then reported at the end of the detailed estimate. The composite contingency value reported for the SAFSTOR scenario, and as shown in the detailed cost table in Appendix A, is approximately 17.8%.

1.6.2 Financial Risk

In addition to the routine uncertainties addressed by contingency, another cost element that is sometimes necessary to consider when bounding decommissioning costs relates to uncertainty, or risk. Examples can include changes in work scope, pricing, job performance, and other variations that could conceivably, but not necessarily, occur. Consideration is sometimes necessary to generate a level of confidence in the estimate, within a range of probabilities. TLG considers these types of costs under the broad term "financial risk." Included within the category of financial risk are:

- Transition activities and costs: ancillary expenses associated with eliminating 50% to 80% of the site labor force shortly after the cessation of plant operations, added cost for worker separation packages throughout the decommissioning program, national or company-mandated retraining, and retention incentives for key personnel.
- Delays in approval of the decommissioning plan due to intervention, legal challenges, and national and local hearings.
- Changes in the project work scope from the baseline estimate, involving the discovery of unexpected levels of contaminants, contamination in places not previously expected, contaminated soil previously undiscovered (either radioactive or hazardous material contamination), variations in plant inventory or configuration not indicated by the as-built drawings.
- Regulatory changes (e.g., affecting worker health and safety, site release criteria, waste transportation, and disposal).
- Policy decisions altering national commitments (e.g., in the ability to accommodate certain waste forms for disposition, or in the timetable for the start and rate of acceptance of spent fuel by the DOE).

- Pricing changes for basic inputs, such as labor, energy, materials, and burial.

This cost study does not add any additional costs to the estimate for financial risk, since there is insufficient historical data from which to project future liabilities.

1.7 SITE-SPECIFIC CONSIDERATIONS

There are a number of site-specific considerations that affect the method for dismantling and removal of equipment from the site and the degree of restoration required. The cost impacts of the considerations identified below were included within the estimate.

1.7.1 Spent Fuel Disposition

Congress passed the "Nuclear Waste Policy Act"[13] (NWPA) in 1982, assigning the federal government's long-standing responsibility for disposal of the spent nuclear fuel created by the commercial nuclear generating plants to the DOE. The NWPA provided that DOE would enter into contracts with utilities in which DOE would promise to take the utilities' spent fuel and high-level radioactive waste and utilities would pay the cost of the disposition services for that material. NWPA, along with the individual contracts with the utilities, specified that the DOE was to begin accepting spent fuel by January 31, 1998.

Since the original legislation, the DOE has announced several delays in the program schedule. By January 1998, the DOE had failed to accept any spent fuel or high level waste, as required by the NWPA and utility contracts. Delays continue and, as a result, generators have initiated legal action against the DOE in an attempt to obtain compensation for DOE's breach of contract.

A federal appeals court has ruled that DOE's obligation to take possession of spent nuclear fuel is unconditional and cannot be excused either by the absence of a repository or by a claim of unavoidable delay. Entergy has filed a lawsuit claiming damages for DOE's failure to perform as originally prescribed in the standard disposal contract.

---

13 "Nuclear Waste Policy Act of 1982 and Amendments," U.S. Department of Energy's Office of Civilian Radioactive Management, 1982.

It is expected that, based upon industry experience, the lawsuit will be eventually settled in exchange for payments. The payments would cover those costs incurred for managing and storing the spent fuel that the owner would not have incurred but for DOE's delay in performance. Until a settlement is reached, certain assumptions are needed to assess the financial impact on the identified decommissioning cost scenario.

It is generally necessary that spent fuel be actively cooled and stored for a minimum period at the generating site prior to transfer. The NRC requires that licensees establish a program to manage and provide funding for the management of all irradiated fuel at the reactor site until title of the fuel is transferred to the Secretary of Energy, pursuant to 10 CFR Part 50.54(bb).[14] This funding requirement is fulfilled through inclusion of certain cost elements in the decommissioning estimate, for example, costs associated with the isolation and continued operation of the spent fuel pool and ISFSI.

At shutdown, the spent fuel pool is expected to contain freshly discharged assemblies (from the most recent refueling cycles) as well as the final reactor core. Over the following eight years, the assemblies are transferred to the IP-2 pool where they are packaged into multipurpose canisters for transfer to the ISFSI for interim storage. It is assumed that this period provides the necessary cooling for the transfer canister and for the final core to meet the design requirements for decay heat for the dry storage systems.

DOE's contracts with utilities generally order the acceptance of spent fuel from utilities based upon the oldest fuel receiving the highest priority. For purposes of this analysis, acceptance of commercial spent fuel by the DOE was expected to begin in 2020. The first IP-3 spent fuel assemblies were assumed to be removed from the site in 2023. With an estimated rate of transfer of 3,000 metric tons of uranium (MTU)/year for the commercial industry (based on DOE's latest Acceptance Priority Ranking and Annual Capacity Report, dated June 2004, DOE/RW-0567), completion of the removal of all fuel from the site was projected to be in the year 2047, assuming shutdown of IP-3 in 2015 (and a transfer of approximately 30 additional MTUs in 2047 should IP-3 requiring refueling in 2015 prior to the cessation of operations). Entergy Nuclear's analysis assumes, for purposes only of this report, that Entergy Nuclear does not employ DOE

---

14 U.S. Code of Federal Regulations, Title 10, Part 50, "Domestic Licensing of Production and Utilization Facilities," Subpart 54 (bb), "Conditions of Licenses."

spent fuel disposal contract allowances for up to 20% additional fuel designation for shipment to DOE each year.

Entergy Nuclear's position is that the DOE has a contractual obligation to accept IPEC fuel earlier than the projections set out above. No assumption made in the study should be interpreted to be inconsistent with this claim. However, at this time, including the cost of storing spent fuel in this study is the most reasonable approach because it insures the availability of sufficient decommissioning funds at the end of the station's life if, contrary to its contractual obligation, the DOE has not performed earlier.

ISFSI

An ISFSI, which is operated under a general (10 CFR Part 50) license, has been constructed to support site operations. With a capacity of 75 casks, however, the current facility will not be able to accommodate all of the spent fuel from the IP-3 pool. The estimate assumes, therefore, that a second ISFSI will be constructed at the site to support the decommissioning of IP-3. Once the IP-3 pool is emptied, the spent fuel storage and handling facilities are available for decommissioning or readied for long-term storage.

Operation and maintenance costs for the ISFSIs are included within the estimate and address the costs for staffing the facility, as well as security, insurance, and licensing fees.

Article IV.B of Entergy's contract with the DOE for spent fuel disposal requires the DOE to bring a cask "suitable for use at the [IP-3] site." To date, the DOE has failed to provide casks, or even to identify what casks suitable to IP-3 it will provide. In the absence of identifiable DOE transport cask requirements, the design and capacity of the ISFSI is based upon a commercial dry cask storage system. While Entergy's contract with the DOE requires DOE to provide transport canisters to Entergy, for present purposes, this estimate includes this cost.

Storage Canister Design

For purposes of this estimate only, and in the absence of DOE cask specifications, the design and capacity of the ISFSI is based upon the Holtec HI-STORM dry cask storage system. The Holtec multi-purpose canister or MPC has a capacity of 32 fuel assemblies.

Canister Loading and Transfer

The estimate includes the costs to transfer the fuel from the IP-3 pool to the IP-2 pool and to purchase, load, and transfer the multi-purpose spent fuel storage canisters (MPCs) from the IP-2 pool to the ISFSIs for interim storage. The estimate also includes costs for the transfer of the fuel at the ISFSIs to the DOE.

Operations and Maintenance

The estimate includes costs for the operation of the spent fuel pool until it is emptied and the operation of the ISFSIs until the spent fuel is transferred to the DOE.

The ISFSI operating duration is based upon the previously stated assumptions on fuel transfer schedule expectations.

ISFSI Design Considerations

A multi-purpose (storage and transport) dry shielded storage canister with a vertical, reinforced concrete storage overpack is used as a basis for the cost analyses. The overpacks are assumed to have some level of neutron-induced activation as a result of the long-term storage of the fuel, i.e., to levels exceeding free-release limits. The cost of the disposition of this material, as well as the demolition of the ISFSIs facility, is included in the estimate.

GTCC

Dismantling of the reactor internals generates radioactive waste considered unsuitable for shallow land disposal (i.e., low-level radioactive waste with concentrations of radionuclides that exceed the limits established by the NRC for Class C radioactive waste (GTCC)[15]). The Low-Level Radioactive Waste Policy Amendments Act of 1985 assigned the Federal Government the responsibility for the disposal of this material. The Act also stated that the beneficiaries of the activities resulting in the generation of such radioactive waste bear all reasonable costs of disposing of such waste. However, to date, the Federal Government has not identified a cost, if any, for disposing of GTCC or a

15 U.S. Code of Federal Regulations, Title 10, Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

schedule for acceptance. As such, the estimate to decommission IP-3 includes an allowance for the disposition of GTCC material.

For purposes of this study, GTCC is packaged in the same canisters used for spent fuel. The GTCC material is assumed to be shipped directly to a DOE facility as it is generated (since the fuel has been removed from the site prior to the start of decommissioning and the ISFSI deactivated). Disposal costs are estimated based upon the fee for spent fuel.

1.7.2 Reactor Vessel and Internal Components

The reactor pressure vessel and internal components are segmented for disposal in shielded, reusable transportation casks. Segmentation is performed in the refueling canal, where a turntable and remote cutter are installed. The vessel is segmented in place, using a mast-mounted cutter supported off the lower head and directed from a shielded work platform installed overhead in the reactor cavity. Transportation cask specifications and transportation regulations dictate the segmentation and packaging methodology.

Intact disposal of reactor vessel shells has been successfully demonstrated at several of the sites that have been decommissioned. Access to navigable waterways has allowed these large packages to be transported, in most instances, to the Barnwell disposal site in South Carolina with minimal overland travel.

Intact disposal of the reactor vessel and internal components can provide additional savings in cost and worker exposure by eliminating the complex segmentation requirements, isolation of the GTCC material, and transport/storage of the resulting waste packages. Portland General Electric (PGE) was able to dispose of the Trojan reactor as an intact package (including the internals). However, its location on the Columbia River simplified the transportation analysis since:

- the reactor package could be secured to the transport vehicle for the entire journey, i.e., the package was not lifted during transport,
- there were no man-made or natural terrain features between the plant site and the disposal location that could produce a large drop, and
- transport speeds were very low, limited by the overland transport vehicle and the river barge.

As a member of the Northwest Compact, PGE had a site available for disposal of the package - the US Ecology facility in Washington State. The characteristics of this arid site proved favorable in demonstrating compliance with land disposal regulations.

It is not known whether intact disposal (of the vessel shell or the complete vessel and internals) will be available when the IP-3 plant ceases operation. Future viability of this option will depend upon the ultimate location of the disposal site, as well as the disposal site licensee's ability to accept highly radioactive packages and effectively isolate them from the environment. Consequently, this study assumes that the reactor vessel will require segmentation, as a bounding condition.

1.7.3 Primary System Components

The current scenario defers decommissioning for approximately 50 years. The delay will result in lower working area dose rate (from natural decay of the radionuclides produced from plant operations). As such, decontamination of the reactor coolant system components and associated reactor water cleanup systems is not anticipated to be necessary and no allowance is included for this activity within the estimate.

Reactor coolant piping is cut from the reactor vessel once the water level in the vessel (used for personnel shielding during dismantling and cutting operations in and around the vessel) drops below the nozzle zone. The piping is boxed and shipped by shielded van. The reactor coolant pumps and motors are lifted out intact, packaged, and transported for processing or disposal.

The following discussion deals with the removal and disposition of the steam generators, but the techniques involved are also applicable to other large radioactively-contaminated components, such as heat exchangers and the pressurizer. The steam generators' size and weight, their location within the reactor building, as well as the disposal facility waste acceptance criteria, and access to transportation will ultimately determine the removal, transportation, and disposal strategy.

A crane is set up for the removal of the generators. It can also be used to move portions of the steam generator cubicle walls and floor slabs from the reactor building to a location where they can be decontaminated and transported to the material handling area. Interferences within the

work area, such as grating, piping, and other components are removed to create sufficient lay-down space for processing these large components.

The generators are rigged for removal, disconnected from the surrounding piping and supports, and maneuvered into the open area where they are lowered onto a down-ending cradle. Each generator is rotated into the horizontal position for extraction from the containment and placed onto a multi-wheeled vehicle for transport to an on-site preparation area.

Disposal costs are based upon the displaced volume and weight of the primary side portions of the steam generators. Each component is then loaded onto a barge for transport to a rail head and the disposal facility. The secondary side is assumed to be sent to an off-site waste processor.

1.7.4 Retired Components

The estimate includes the cost to dispose of the retired steam generators currently stored on site. Transportation and disposal will occur following the removal of the installed steam generators.

1.7.5 Main Turbine and Condenser

The main turbine is dismantled using conventional maintenance procedures. The turbine rotors and shafts are removed to a laydown area. The lower turbine casings are removed from their anchors by controlled demolition. The main condensers are also disassembled and moved to a laydown area. Material is then prepared for transportation to an off-site recycling facility where it will be surveyed and designated for either decontamination or volume reduction, conventional disposal, or controlled disposal. Components are packaged and readied for transport in accordance with the intended disposition.

1.7.6 Transportation Methods

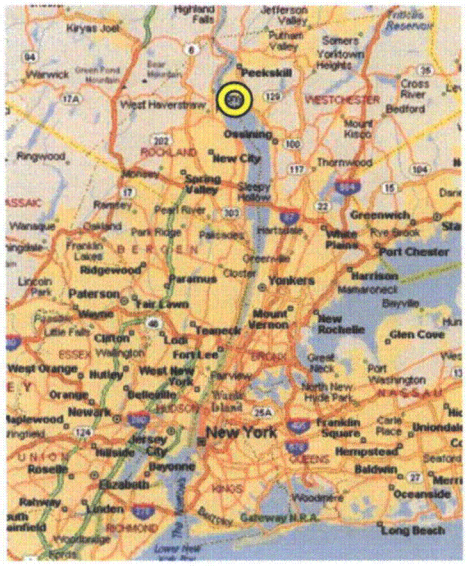
Contaminated piping, components, and structural material other than the highly-activated reactor vessel and internal components will qualify as LSA-I, II or III or Surface Contaminated Object, SCO-I or II, as described in Title 49 of the Code of Federal Regulations.[16] The

16 U.S. Department of Transportation, Section 49 of the Code of Federal Regulations, "Transportation," Parts 173 through 178, 2010.

contaminated material will be packaged in Industrial Packages (IP-1, IP-2, or IP-3, as defined in 49 CFR 173.411) for transport unless demonstrated to qualify as their own shipping containers. The reactor vessel and internal components are expected to be transported in accordance with 10 CFR Part 71, as Type B. It is conceivable that the reactor, due to its limited specific activity, could qualify as LSA II or III. However, the high radiation levels on the outer surface would require that additional shielding be incorporated within the packaging so as to attenuate the dose to levels acceptable for transport.

Any fuel cladding failure that occurred during the lifetime of the plant is assumed to have released fission products at sufficiently low levels that the buildup of long-lived isotopes (e.g., ^{137}Cs, ^{90}Sr, or transuranics) has not reached levels exceeding those that permit the major reactor components to be shipped under current transport regulations requirements.

Transport of the highly activated metal, produced in the segmentation of the reactor vessel and internal components, is by shielded truck cask. Cask shipments may exceed 95,000 pounds, including vessel segment(s), supplementary shielding, cask tie-downs, and tractor-trailer. The maximum level of activity per shipment assumed permissible is based upon the license limits of the available shielded transport casks. The segmentation scheme for the vessel and internal segments is designed to meet these limits.



Considering the location of IPEC (see map) and the potential for restricted road use, it is assumed that transportation of materials requiring controlled disposal will utilize the Hudson River via barge shipment to the nearest transfer point for rail or trucking to the Energy-Solutions' facility in Clive, Utah. However, for estimating purposes, costs to transport the majority of the low-level radioactive waste (excluding large components) were based upon truck transport costs developed from published tariffs from Tri-State Motor Transit.[17] Memphis (TN) was

17 Tri-State Motor Transit Company, published tariffs, Interstate Commerce Commission (ICC),

used as the destination for off-site processing of potentially recoverable material or conditioning of waste for controlled disposal.

1.7.7 Low-Level Radioactive Waste Conditioning and Disposal

The contaminated and activated material generated in the decontamination and dismantling of a commercial nuclear reactor is classified as low-level (radioactive) waste, although not all of the material is suitable for "shallow-land" disposal. With the passage of the "Low-Level Radioactive Waste Policy Act" in 1980,[18] the states became ultimately responsible for the disposition of low-level radioactive waste generated within their own borders.

The federal law encouraged the formation of regional groups or compacts to implement this objective safely, efficiently, and economically, and set a target date of 1986 for implementation. After little progress, the "Low-Level Radioactive Waste Policy Amendments Act of 1985,[19] extended the implementation schedule, with specific milestones and stiff sanctions for non-compliance. Subsequent court rulings have substantially diluted those sanctions and, to date, with the exception of Texas (which has issued a license for a new facility), no new compact facilities have been successfully sited, licensed, and constructed.

In the past, there were two facilities available to Entergy for the disposal of low-level radioactive waste generated by IP-3. As of July 1, 2008, however, the facility in Barnwell, South Carolina was closed to generators outside the Atlantic Compact (comprised of the states of Connecticut, New Jersey and South Carolina). This leaves the facility in Clive, Utah, operated by EnergySolutions, as the only currently available destination for low-level radioactive waste requiring controlled disposal, until the construction of Waste Control Specialist's facility in Andrews County, Texas, is complete.

For the purpose of this analysis, the EnergySolutions' facility is used as the basis for estimating the disposal cost for the majority of the radioactive waste (Class A[20]). The costs reported for direct disposal (burial) in the estimate are based upon Entergy Nuclear Operations, Inc.

Docket No. MC-427719 Rules Tariff, March 2004, Radioactive Materials Tariff, March 2010.

18 "Low Level Radioactive Waste Policy Act of 1980," Public Law 96-573, 1980.

19 "Low-Level Radioactive Waste Policy Amendments Act of 1985," Public Law 99-240, January 15, 1986.

20 U.S. Code of Federal Regulations, Title 10, Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

current Life of Plant Disposal Agreement with EnergySolutions.[21] This facility was used as the destination for the majority of the waste volume generated by decommissioning (99.85%). EnergySolutions does not have a license to dispose of the more highly radioactive waste (Class B and C) generated in the dismantling of the reactor. As such, disposal costs for this material (representing approximately 0.13% of the waste volume) is based upon the last published rate schedule for non-compact waste for the Barnwell facility, adjusted for escalation of the Atlantic Compact rates (as a proxy).

Material exceeding Class C limits (limited to material closest to the reactor core and comprising approximately 0.02% of the total waste volume) is generally not suitable for shallow-land disposal. This material is packaged in the same multipurpose canisters used for spent fuel storage/transport and designated for geologic disposal.

A significant portion of the waste material generated during decommissioning may only be potentially contaminated by radioactive materials. This waste can be analyzed on site or shipped off site to licensed facilities for further analysis, for processing and/or for conditioning/ recovery. Reduction in the volume of low-level radioactive waste requiring disposal in a licensed low-level radioactive waste disposal facility can be accomplished through a variety of methods, including analyses and surveys or decontamination to eliminate the portion of waste that does not require disposal as radioactive waste, compaction, incineration or metal melt. The estimate reflects the savings from waste recovery/volume reduction. Costs for waste processing/reduction were also based upon existing agreements.

Disposition of the low-level radioactive waste generated from decommissioning operations (and cost basis) is summarized in Table 2.

1.7.8 Site Conditions Following Decommissioning

The NRC will terminate (or amend) the site license when it determines that site remediation has been performed in accordance with the license termination plan, and that the final status survey and associated documentation demonstrate that the facility is suitable for release. The NRC's involvement in the decommissioning process ends at this point.

---

21 General Services Agreement 10160239 between Entergy Nuclear Operations and EnergySolutions, June 2007.

However, this cost estimate includes certain costs for site restoration beyond that necessary for NRC license termination.

Only existing site structures are considered in the dismantling cost. The current analysis includes all structures as defined in the site plot plan.[22] The electrical switchyard remains after Indian Point is decommissioned in support of the regional transmission and distribution system. The Generation Support Building and IPEC Training Center remain in place for future use. Clean non-contaminated structures are removed to a nominal depth of three feet below grade. The voids are backfilled with clean debris and capped with soil. The site is then re-graded to conform to the adjacent landscape. Vegetation is established to inhibit erosion. These "non-radiological costs" are included in the total cost of decommissioning.

Site utility and service piping are abandoned in place. Electrical manholes are backfilled with suitable earthen material. Asphalt surfaces in the immediate vicinity of site buildings are broken up and the material used for fill, as required. The site access road remains in place.

1.7.9 Site Contamination

As indicated by the IPEC Groundwater Investigation Project,[23] it is likely that radionuclides in the soil has contaminated portions of the subsurface power block structures. As such, sub-grade surfaces of the following IP-3 structures are designated for removal:

- Discharge Canal
- Fuel Storage Building, and
- Reactor Containment
- Primary Auxiliary Building (approximately 50%).

All other structures or buildings expect to be impacted in the decontamination process are removed to a nominal depth of three feet below grade.

Site remediation costs include the removal and disposition of approximately 2.4 million cubic feet of potentially contaminated soil on the IP-3 site. This volume includes soil contaminated by IP-1 located

22 Entergy Nuclear Northeast "Buildings and Structures Identification Plan" ER-04-2-012, Rev. 01.
23 "Hydrogeologic Site Investigation Report," GZA GeoEnvironmental, Inc., January 2008.

within the boundaries of the IP-3 site. The areas are identified on Figure 1; the assumed volumes and costs are identified in Table 1.

1.8 ASSUMPTIONS

The following assumptions were made in the development of the estimate for decommissioning IP-3.

1.8.1 Estimating Basis

Decommissioning costs are reported in the year of projected expenditure; however, the values are provided in 2010 dollars. Costs are not inflated, escalated, or discounted over the periods of performance.

The estimates rely upon the physical plant inventory that was the basis for the 2007 site decommissioning analysis.

The study follows the principles of ALARA through the use of work duration adjustment factors. These factors address the impact of activities such as radiological protection instruction, mock-up training, and the use of respiratory protection and protective clothing. The factors lengthen a task's duration, increasing costs and lengthening the overall schedule. ALARA planning is considered in the costs for engineering and planning, and in the development of activity specifications and detailed procedures. Changes to worker exposure limits may impact the decommissioning cost and project schedule.

1.8.2 Release Criteria

This estimate assumes that the site will be remediated to the levels specified in 10 CFR 20.1402, "Radiological criteria for unrestricted use," although the remediation measures included in this estimate are believed to be sufficient to result in substantially lower levels than required by the foregoing regulation.

Figure 1

Potential Power Block Soil Remediation Areas

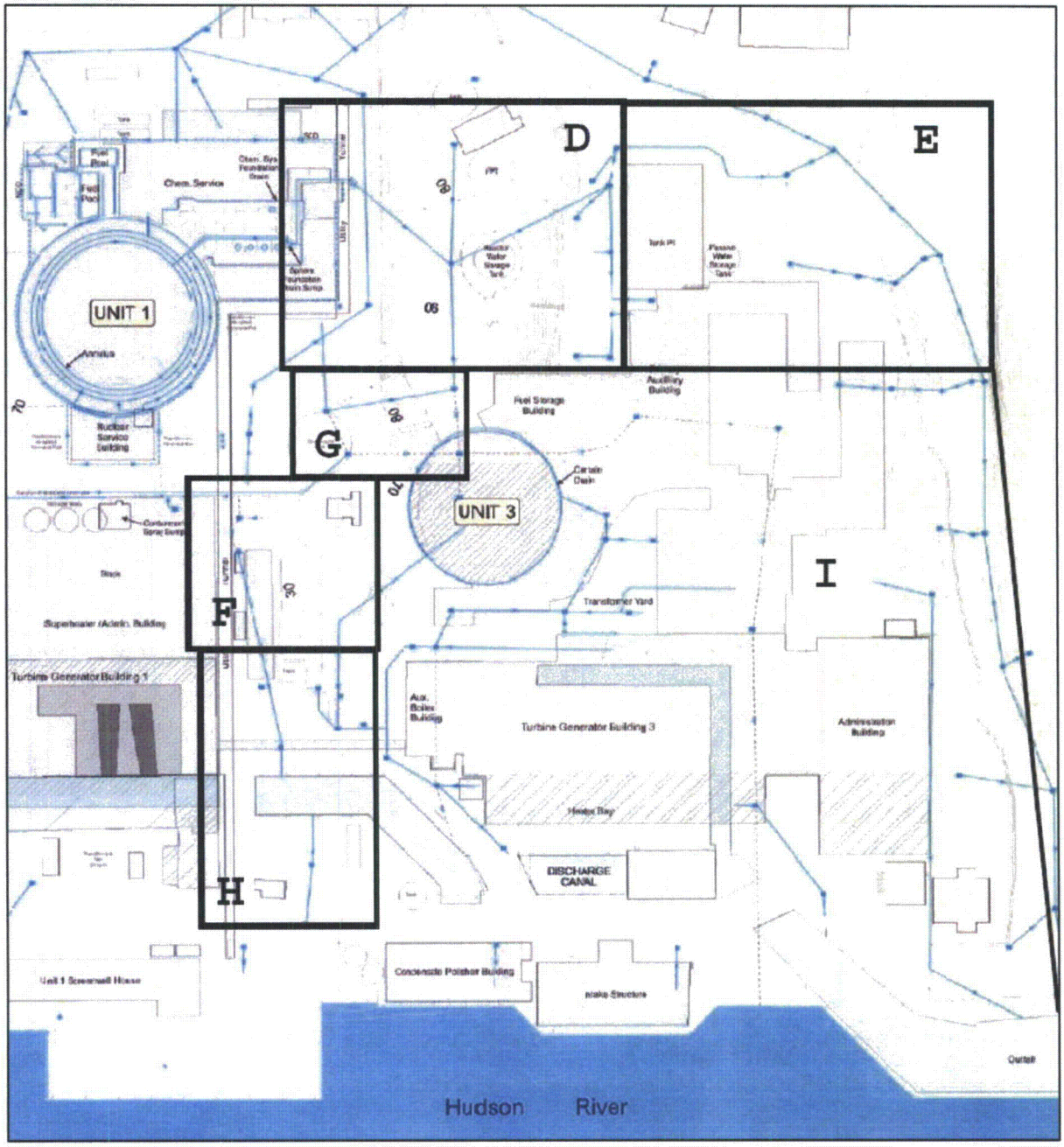


Table 1

Contaminated Soil Disposition Estimates

Activity Index	Area	Volume (cubic feet)	Cost (million, $2010)
4b.2.3	Septic Soils Storage Area Remediation	81,000	$4.361
4b.2.5	Outfall Remediation	183,240	$9.897
4b.2.6	Main Transformer Yard Remediation	22,800	$1.264
	Subtotal	**287,040**	**$15.522**
5b.2.3	Unit 1 Legacy Soil Remediation [1]		
	D	925,394	
	E	752,000	
	F	115,000	
	G	110,000	
	H	105,000	
	I - Storm Drains	90,000	
	Reactor Building (footprint)	38,000	
	Subtotal	**2,135,394**	**$116.730**
	TOTAL	**2,422,434**	**$132.252**

Note 1: Refer to Figure 1 for the location of these areas

1.8.3 Labor Costs

Entergy will manage the decontamination and dismantling of the nuclear unit in addition to maintaining site security, radiological health and safety, quality assurance and overall site administration during the decommissioning. Entergy will provide the supervisory staff needed to oversee the labor subcontractors, consultants, and specialty contractors engaged to perform the field work associated with the decontamination and dismantling efforts.

Personnel costs are based upon average salary information made available by Entergy. Overhead costs are included for site and corporate support; they were reduced commensurate with the staffing levels envisioned for the project.

Severance and retention costs are not included in the estimates. Reduction in the operating organization is assumed to be handled through normal staffing processes (e.g., reassignment and outplacement).

The craft labor required to decontaminate and dismantle the nuclear unit is acquired through standard site contracting practices. The current cost of site labor is used as an estimating basis.

Security, while reduced from operating levels, is maintained throughout the decommissioning for access control, material control, and to safeguard the spent fuel.

1.8.4 Design Conditions

Activation levels in the vessel and internal components are modeled using NUREG/CR-3474.[24] Estimates are derived from the curie/gram values contained therein and adjusted for the different mass of the IP-3 components, projected operating life, and different period of decay. Additional short-lived isotopes were derived from NUREG/CR-0130[25]

---

24 J.C. Evans et al., "Long-Lived Activation Products in Reactor Materials" NUREG/CR-3474, Pacific Northwest Laboratory for the Nuclear Regulatory Commission, August 1984.

25 R.I. Smith, G.J. Konzek, W.E. Kennedy, Jr., "Technology, Safety and Costs of Decommissioning a Reference Pressurized Water Reactor Power Station," NUREG/CR-0130 and addenda, Pacific Northwest Laboratory for the Nuclear Regulatory Commission, June 1978.

and NUREG/CR-0672,[26] and benchmarked to the long-lived values from NUREG/CR-3474.

The control elements are disposed of along with the spent fuel (i.e., there is no additional cost provided for their disposal). Disposition of any control elements stored in the pools from operations, or any other legacy waste, is considered an operating expense and therefore not accounted for in the decommissioning estimates.

Activation of the reactor building structures was assumed to be confined to the biological shield.

1.8.5 General

Transition Activities

Existing warehouses are cleared of non-essential material and remain for use by IPEC and its subcontractors. The plant's operating staff performs the following activities at no additional cost or credit to the project during the transition period.

- Drain and collect fuel oils, lubricating oils, and transformer oils for recycle and/or sale.
- Drain and collect acids, caustics, and other chemical stores for recycle and/or sale.
- Process operating waste inventories. Disposal of operating wastes during this initial period is not considered a decommissioning expense; however, the estimate does include the disposition of the retired steam generators currently in storage.

Scrap and Salvage

The existing plant equipment is considered obsolete and suitable for scrap as deadweight quantities only. Entergy will make economically reasonable efforts to salvage equipment following final plant shutdown. However, dismantling techniques assumed by TLG for equipment in this analysis are not consistent with removal techniques required for salvage (resale) of equipment. Experience has indicated that buyers prefer equipment stripped down to very specific requirements before they

26 H.D. Oak, et al., "Technology, Safety and Costs of Decommissioning a Reference Boiling Water Reactor Power Station," NUREG/CR-0672 and addenda, Pacific Northwest Laboratory for the Nuclear Regulatory Commission, June 1980.

would consider purchase. This can require expensive rework after the equipment had been removed from its installed location. Since placing salvage value on this machinery and equipment would be speculative, and the value would be small in comparison to the overall cost of decommissioning, this analysis does not attempt to quantify the value that an owner may realize based upon those efforts.

It is assumed, for purposes of this analysis, that any value received from the sale of scrap generated in the dismantling process would be more than offset by the on-site processing costs. The dismantling techniques assumed in the decommissioning estimates do not include the additional cost for size reduction and preparation to meet "furnace ready" conditions. With a volatile market, the potential profit margin in scrap recovery is highly speculative, regardless of the ability to free release this material.

Furniture, tools, mobile equipment such as forklifts, trucks, bulldozers, and other property is removed at no cost or credit to the decommissioning project. Disposition may include relocation to other facilities. Spare parts are made available for alternative use.

Spent Fuel Pool Isolation

The decommissioning cost estimate for IP-3 assumes that the spent fuel handling building will be used for the interim storage of spent fuel once plant operations cease until the fuel can be transferred to the ISFSI (via IP-2). Therefore, so that the adjacent power block structures can be de-energized and configured for long-term storage, the spent fuel handling building, and in particular the spent fuel storage area, will be isolated, creating a spent fuel island. This process can involve: establishing a local operator control area, installing in-situ pool cooling and water cleanup systems, establishing and routing independent power and control systems, redesigning the heating and ventilation systems, reconfiguring the area monitoring systems and relocating the security boundary. Costs for these activities are based upon experience at plants that have undergone decommissioning and, in the process, isolated their spent fuel pool operations.

Energy

For estimating purposes, the plant is assumed to be de-energized, with the exception of those facilities associated with spent fuel storage (temporary power is run throughout the plant, as needed). Replacement power costs are used to calculate the cost of energy consumed during decommissioning for tooling, lighting, ventilation, and essential services.

Insurance

Costs for continuing coverage (nuclear liability and property insurance) following cessation of plant operations and during decommissioning are included and based upon current operating premiums. Reductions in premiums, throughout the decommissioning process, are consistent with the guidance and the limits for coverage defined in the NRC's proposed rulemaking "Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors."[27] The NRC's financial protection requirements are based on various reactor (and spent fuel) configurations.

Property Tax

Property taxes or fees in lieu of taxes are not included within the estimate.

Emergency Planning Fees

Emergency planning costs are estimated from FEMA, state, and local fees, as provided in the IPEC budget accounts. Maintenance and service costs are included with the annual fees.

Site Modifications

The perimeter fence and in-plant security barriers are moved, as appropriate, to conform to the site security plan in force during the various stages of the project.

---

[27] "Financial Protection Requirements for Permanently Shutdown Nuclear Power Reactors," 10 CFR Parts 50 and 140, Federal Register Notice, Vol. 62, No. 210, p. 58690 et seq., October 30, 1997.

2. RESULTS

The proposed decommissioning scenario, major cost contributors and schedule of annual expenditures are summarized in Figure 2 and in Tables 3 and 4. The summaries are based upon the 2010 detailed cost estimate provided in Appendix A. The cost elements are assigned to one of three subcategories: NRC License Termination, Spent Fuel Management, and Site Restoration. The subcategory "NRC License Termination" is used to accumulate costs that are consistent with "decommissioning" as defined by the NRC in its financial assurance regulations (i.e., 10 CFR §50.75). The cost reported for this subcategory is generally sufficient to terminate the unit's operating license, recognizing that there may be some additional cost impact from spent fuel management. The costs for license termination are shown in Table 5.

The "Spent Fuel Management" subcategory contains costs associated with post-shutdown spent fuel pool operations, the containerization and transfer of spent fuel to the ISFSIs (via IP-2), and the management of the ISFSIs until such time that the transfer of all fuel from the facilities to an off-site location (e.g., geologic repository) is complete. It does not include any spent fuel management expenses incurred prior to the cessation of plant operations. The costs for spent fuel management are shown in Table 6.

"Site Restoration" is used to capture costs associated with the dismantling and demolition of buildings and facilities demonstrated to be free from contamination. This includes structures never exposed to radioactive materials, as well as those facilities that have been decontaminated to appropriate levels. Non-contaminated structures are removed to a depth of three feet and backfilled to conform to the local grade. Contaminated foundations are removed to bedrock. The costs for site restoration are shown in Table 7.

It should be noted that the costs assigned to these subcategories are allocations. Delegation of costs is for the purposes of comparison (e.g., with NRC financial guidelines) or to permit specific financial treatment (e.g., Asset Retirement Obligation determinations). In reality, there can be considerable interaction between the activities in the three subcategories. For example, an owner may decide to remove non-contaminated structures early in the project to improve access to highly contaminated facilities or plant components. In these instances, the non-contaminated removal costs could be reassigned from Site Restoration to an NRC License Termination support activity. However, in general, the allocations represent a reasonable accounting of those costs that can be expected to be incurred for the specific subcomponents of the total estimated program cost, if executed as described.

While designated for disposal at the geologic repository along with the spent fuel, GTCC waste is still classified herein as low-level radioactive waste and, as such, included as a "License Termination" expense.

2.1 Decommissioning Trust Fund

The decommissioning liability is currently retained, and the trust fund held, by NYPA. This analysis assumes that NYPA will exercise its option to transfer the liability along with the decommissioning trust fund for IP-3 to Entergy on December 12, 2015, in accordance with the terms of the decommissioning agreement for IP-3 between Entergy and NYPA. The decommissioning trust fund, as reported in NYPA's latest status report, was $486.4 million, as of October 31, 2010.

2.2 Financial Assurance

It is the current plan, based on the growth of the funds in the IP-3 decommissioning trust, to fund the expenditures for license termination from the currently existing decommissioning trust fund.

Table 5 identifies the cost projected for license termination (in accordance with 10 CFR 50.75). Table 8 provides the details of the proposed funding plan for decommissioning IP-3 based on a 2% real rate of return on the decommissioning trust fund. As shown in Table 8, the current trust fund (as of October 31, 2010) is sufficient to accomplish the intended tasks and terminate the operating license for IP-3. The analysis also shows a surplus in the fund at the completion of decommissioning. This surplus could be made available to fund other activities at the site (e.g., spent fuel management and/or restoration activities), recognizing that the licensee would need to make the appropriate submittals for an exemption in accordance with 10 CFR 50.12 from the requirements of 10 CFR 50.82(a)(8)(i)(A) in order to use the decommissioning trust funds for non-decommissioning related expenses, as defined by 10 CFR 50.2.

Figure 2
SAFSTOR Decommissioning Timeline
(not to scale)

Shutdown: December 12, 2015

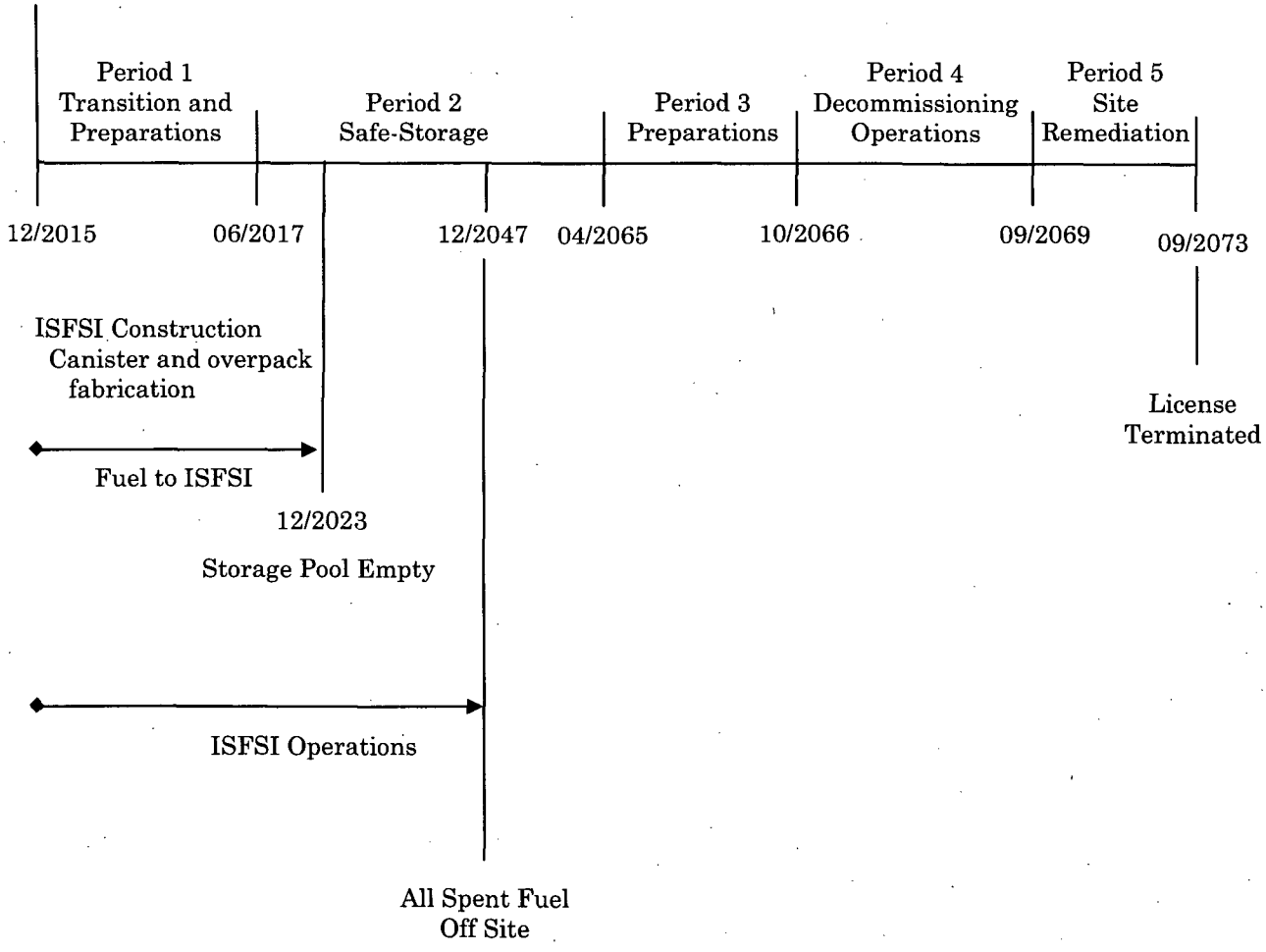


Table 2
Low-Level Radioactive Waste Disposition

Waste	Cost Basis	Class [1]	Waste Volume (cubic feet)	Mass (pounds)
Low-Level Radioactive Waste (near-surface disposal)	EnergySolutions	A	2,845,622	224,900,261
	Barnwell	B	3,330	352,433
	Barnwell	C	480	47,068
Greater than Class C (geologic repository)	Spent Fuel Equivalent	GTCC	496	104,146
Processed/Conditioned (off-site recycling center)	Recycling Vendors	A	379,943	14,982,260
Total [2]			3,229,870	240,386,168

[1] Waste is classified according to the requirements as delineated in Title 10 CFR, Part 61.55
[2] Columns may not add due to rounding.

Table 3
Summary of Major Cost Contributors
(thousands, 2010 dollars)

	License Termination	Spent Fuel Management	Site Restoration	Total
Decontamination	15,315	-	-	15,315
Removal	126,758	1,960	37,996	166,715
Packaging	24,991	10	-	25,001
Transportation	61,929	46	-	61,975
Waste Disposal	151,520	59	-	151,579
Off-site Waste Processing	36,095	-	-	36,095
Program Management [1]	224,824	44,029	38,063	306,915
Corporate A&G	28,428	-	-	28,428
Site O&M	20,770	1,104	-	21,874
Spent Fuel Management [2]	-	176,008	-	176,008
Spent Fuel Pool Isolation	7,652	-	-	7,652
Insurance and Regulatory Fees	48,689	761	-	49,450
Energy	34,060	2,291	1,401	37,752
Radiological Surveys	19,778	-	-	19,778
Property Taxes	-	-	-	-
Miscellaneous Equipment	16,542	-	5	16,547
Environmental Monitoring	19,096	1,687	-	20,782
Total	836,445	227,954	77,465	1,141,864

[1] Includes security and engineering
[2] Includes capital costs for the construction of a second ISFSI, multi-purpose dry storage containers and storage overpacks, packaging and handling (transfer from IP-3 pool to IP-2 pool and then to ISFSI, ISFSI to DOE transfer)

Table 4
Schedule of Annual Expenditures
Total Decommissioning Cost
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2015	2,089	1,052	192	16	591	3,940
2016	38,742	19,123	3,505	371	10,928	72,669
2017	22,928	11,300	1,948	818	15,872	52,866
2018	9,007	10,359	699	23	4,438	24,526
2019	9,007	10,359	699	23	4,438	24,526
2020	9,031	10,387	701	23	4,450	24,593
2021	9,007	10,359	699	23	4,438	24,526
2022	9,007	10,359	699	23	4,438	24,526
2023	8,988	10,332	698	23	4,433	24,474
2024	2,152	494	351	22	2,796	5,815
2025	2,146	493	350	22	2,788	5,799
2026	2,146	493	350	22	2,788	5,799
2027	2,146	493	350	22	2,788	5,799
2028	2,152	494	351	22	2,796	5,815
2029	2,146	493	350	22	2,788	5,799
2030	2,146	493	350	22	2,788	5,799
2031	2,146	493	350	22	2,788	5,799
2032	2,152	494	351	22	2,796	5,815
2033	2,146	493	350	22	2,788	5,799
2034	2,146	493	350	22	2,788	5,799
2035	2,146	493	350	22	2,788	5,799
2036	2,152	494	351	22	2,796	5,815
2037	2,146	493	350	22	2,788	5,799
2038	2,146	493	350	22	2,788	5,799
2039	2,146	493	350	22	2,788	5,799
2040	2,152	494	351	22	2,796	5,815
2041	2,146	493	350	22	2,788	5,799
2042	2,146	493	350	22	2,788	5,799
2043	2,146	493	350	22	2,788	5,799
2044	2,152	494	351	22	2,796	5,815
2045	2,146	493	350	22	2,788	5,799
2046	2,146	493	350	22	2,788	5,799

Table 4 (continued)
Schedule of Annual Expenditures
Total Decommissioning Cost
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2047	2,112	484	350	22	2,723	5,690
2048	1,408	291	351	22	1,388	3,460
2049	1,404	291	350	22	1,384	3,450
2050	1,404	291	350	22	1,384	3,450
2051	1,404	291	350	22	1,384	3,450
2052	1,408	291	351	22	1,388	3,460
2053	1,404	291	350	22	1,384	3,450
2054	1,404	291	350	22	1,384	3,450
2055	1,404	291	350	22	1,384	3,450
2056	1,408	291	351	22	1,388	3,460
2057	1,404	291	350	22	1,384	3,450
2058	1,404	291	350	22	1,384	3,450
2059	1,404	291	350	22	1,384	3,450
2060	1,408	291	351	22	1,388	3,460
2061	1,404	291	350	22	1,384	3,450
2062	1,404	291	350	22	1,384	3,450
2063	1,404	291	350	22	1,384	3,450
2064	1,408	291	351	22	1,388	3,460
2065	15,763	1,321	2,513	26	3,970	23,594
2066	37,382	13,241	3,464	13,608	16,993	84,687
2067	78,603	37,003	3,091	59,258	32,126	210,080
2068	54,425	15,472	2,587	26,361	18,608	117,452
2069	24,172	2,759	605	4,943	11,386	43,866
2070	13,227	6,616	350	18,341	11,647	50,182
2071	13,227	6,616	350	18,341	11,647	50,182
2072	13,264	6,634	351	18,391	11,679	50,319
2073	9,748	4,876	258	13,517	8,584	36,983
Total	453,027	204,946	37,752	175,028	271,111	1,141,864

Table 5
Schedule of Annual Expenditures
License Termination Allocation
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2015	1,762	71	192	16	450	2,490
2016	33,016	1,944	3,505	371	8,355	47,191
2017	18,077	3,804	1,755	818	13,036	37,490
2018	1,404	306	350	23	1,384	3,466
2019	1,404	306	350	23	1,384	3,466
2020	1,408	306	351	23	1,388	3,476
2021	1,404	298	350	22	1,384	3,458
2022	1,404	291	350	22	1,384	3,450
2023	1,404	291	350	22	1,384	3,450
2024	1,408	291	351	22	1,388	3,460
2025	1,404	291	350	22	1,384	3,450
2026	1,404	291	350	22	1,384	3,450
2027	1,404	291	350	22	1,384	3,450
2028	1,408	291	351	22	1,388	3,460
2029	1,404	291	350	22	1,384	3,450
2030	1,404	291	350	22	1,384	3,450
2031	1,404	291	350	22	1,384	3,450
2032	1,408	291	351	22	1,388	3,460
2033	1,404	291	350	22	1,384	3,450
2034	1,404	291	350	22	1,384	3,450
2035	1,404	291	350	22	1,384	3,450
2036	1,408	291	351	22	1,388	3,460
2037	1,404	291	350	22	1,384	3,450
2038	1,404	291	350	22	1,384	3,450
2039	1,404	291	350	22	1,384	3,450
2040	1,408	291	351	22	1,388	3,460
2041	1,404	291	350	22	1,384	3,450
2042	1,404	291	350	22	1,384	3,450
2043	1,404	291	350	22	1,384	3,450
2044	1,408	291	351	22	1,388	3,460
2045	1,404	291	350	22	1,384	3,450
2046	1,404	291	350	22	1,384	3,450

Table 5 (continued)
Schedule of Annual Expenditures
License Termination Allocation
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2047	1,404	291	350	22	1,384	3,450
2048	1,408	291	351	22	1,388	3,460
2049	1,404	291	350	22	1,384	3,450
2050	1,404	291	350	22	1,384	3,450
2051	1,404	291	350	22	1,384	3,450
2052	1,408	291	351	22	1,388	3,460
2053	1,404	291	350	22	1,384	3,450
2054	1,404	291	350	22	1,384	3,450
2055	1,404	291	350	22	1,384	3,450
2056	1,408	291	351	22	1,388	3,460
2057	1,404	291	350	22	1,384	3,450
2058	1,404	291	350	22	1,384	3,450
2059	1,404	291	350	22	1,384	3,450
2060	1,408	291	351	22	1,388	3,460
2061	1,404	291	350	22	1,384	3,450
2062	1,404	291	350	22	1,384	3,450
2063	1,404	291	350	22	1,384	3,450
2064	1,408	291	351	22	1,388	3,460
2065	15,588	1,321	2,513	26	3,970	23,419
2066	36,188	13,214	3,464	13,608	16,993	83,467
2067	75,635	36,877	3,091	59,243	31,892	206,738
2068	51,871	15,391	2,587	26,317	17,911	114,077
2069	20,936	1,245	511	4,943	11,384	39,020
2070	1,177	977	0	18,341	11,640	32,134
2071	1,177	977	0	18,341	11,640	32,134
2072	1,180	979	0	18,391	11,672	32,222
2073	867	720	0	13,517	8,578	23,682
Total	323,529	91,277	34,060	174,969	212,611	836,445

Table 6
Schedule of Annual Expenditures
Spent Fuel Management Allocation
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2015	327	981	0	0	141	1,449
2016	5,726	17,179	0	0	2,572	25,477
2017	4,851	7,496	193	0	2,836	15,376
2018	7,602	10,053	350	0	3,054	21,059
2019	7,602	10,053	350	0	3,054	21,059
2020	7,623	10,081	351	0	3,062	21,117
2021	7,602	10,053	350	0	3,054	21,059
2022	7,602	10,053	350	0	3,054	21,059
2023	7,584	10,027	349	0	3,049	21,008
2024	744	203	0	0	1,408	2,355
2025	742	203	0	0	1,404	2,349
2026	742	203	0	0	1,404	2,349
2027	742	203	0	0	1,404	2,349
2028	744	203	0	0	1,408	2,355
2029	742	203	0	0	1,404	2,349
2030	742	203	0	0	1,404	2,349
2031	742	203	0	0	1,404	2,349
2032	744	203	0	0	1,408	2,355
2033	742	203	0	0	1,404	2,349
2034	742	203	0	0	1,404	2,349
2035	742	203	0	0	1,404	2,349
2036	744	203	0	0	1,408	2,355
2037	742	203	0	0	1,404	2,349
2038	742	203	0	0	1,404	2,349
2039	742	203	0	0	1,404	2,349
2040	744	203	0	0	1,408	2,355
2041	742	203	0	0	1,404	2,349
2042	742	203	0	0	1,404	2,349
2043	742	203	0	0	1,404	2,349
2044	744	203	0	0	1,408	2,355
2045	742	203	0	0	1,404	2,349
2046	742	203	0	0	1,404	2,349

Table 6 (continued)
Schedule of Annual Expenditures
Spent Fuel Management Allocation
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2047	707	193	0	0	1,339	2,240
2048	0	0	0	0	0	0
2049	0	0	0	0	0	0
2050	0	0	0	0	0	0
2051	0	0	0	0	0	0
2052	0	0	0	0	0	0
2053	0	0	0	0	0	0
2054	0	0	0	0	0	0
2055	0	0	0	0	0	0
2056	0	0	0	0	0	0
2057	0	0	0	0	0	0
2058	0	0	0	0	0	0
2059	0	0	0	0	0	0
2060	0	0	0	0	0	0
2061	0	0	0	0	0	0
2062	0	0	0	0	0	0
2063	0	0	0	0	0	0
2064	0	0	0	0	0	0
2065	0	0	0	0	0	0
2066	0	0	0	0	0	0
2067	1	17	0	15	234	267
2068	4	52	0	45	697	797
2069	99	28	0	0	2	129
2070	368	105	0	0	7	480
2071	368	105	0	0	7	480
2072	369	106	0	0	7	481
2073	271	78	0	0	5	354
Total	75,784	91,324	2,291	59	58,496	227,954

Table 7
Schedule of Annual Expenditures
Site Restoration Allocation
(thousands, 2010 dollars)

Year	Labor	Equip & Materials	Energy	Burial	Other	Yearly Totals
2015-2064	0	0	0	0	0	0
2065	175	0	0	0	0	175
2066	1,193	27	0	0	0	1,220
2067	2,967	108	0	0	0	3,075
2068	2,550	29	0	0	0	2,579
2069	3,137	1,486	94	0	0	4,717
2070	11,683	5,534	350	0	1	17,568
2071	11,683	5,534	350	0	1	17,568
2072	11,715	5,549	351	0	1	17,616
2073	8,610	4,079	258	0	1	12,948
Total	53,714	22,345	1,401	0	5	77,465

Table 8
Funding Requirements for License Termination
2015 Shutdown, 60-Year SAFSTOR

Basis Year		2010	
Fund Balance (10/31/2010)		$486.380	(millions)
Annual Escalation		0.00%	
Annual Earnings		2.00%	
	A	B	C
Year	License Termination Cost (millions)	Escalated License Termination Cost Escalated at 0% (millions)	Decommissioning Trust Fund Escalated at 2% (minus expenses) (millions)
2010	0	0	486.380
2011	0	0	496.108
2012	0	0	506.030
2013	0	0	516.151
2014	0	0	526.474
2015	2.490	2.490	534.513
2016	47.191	47.191	498.012
2017	37.490	37.490	470.482
2018	3.466	3.466	476.425
2019	3.466	3.466	482.487
2020	3.476	3.476	488.661
2021	3.466	3.466	494.968
2022	3.466	3.466	501.401
2023	3.466	3.466	507.963
2024	3.460	3.460	514.662
2025	3.450	3.450	521.505
2026	3.450	3.450	528.485
2027	3.450	3.450	535.604
2028	3.460	3.460	542.856
2029	3.450	3.450	550.263
2030	3.450	3.450	557.818
2031	3.450	3.450	565.524
2032	3.460	3.460	573.375
2033	3.450	3.450	581.392
2034	3.450	3.450	589.569
2035	3.450	3.450	597.910
2036	3.460	3.460	606.408

Table 8 (continued)
Funding Requirements for License Termination
2015 Shutdown, 60-Year SAFSTOR

Basis Year		2010	
Fund Balance (10/31/2010)		$486.380	(millions)
Annual Escalation		0.00%	
Annual Earnings		2.00%	
	A	B	C
Year	License Termination Cost (millions)	Escalated License Termination Cost Escalated at 0% (millions)	Decommissioning Trust Fund Escalated at 2% (minus expenses) (millions)
2037	3.450	3.450	615.086
2038	3.450	3.450	623.937
2039	3.450	3.450	632.965
2040	3.460	3.460	642.164
2041	3.450	3.450	651.557
2042	3.450	3.450	661.138
2043	3.450	3.450	670.910
2044	3.460	3.460	680.868
2045	3.450	3.450	691.035
2046	3.450	3.450	701.405
2047	3.450	3.450	711.983
2048	3.460	3.460	722.763
2049	3.450	3.450	733.768
2050	3.450	3.450	744.993
2051	3.450	3.450	756.442
2052	3.460	3.460	768.111
2053	3.450	3.450	780.023
2054	3.450	3.450	792.173
2055	3.450	3.450	804.566
2056	3.460	3.460	817.197
2057	3.450	3.450	830.091
2058	3.450	3.450	843.242
2059	3.450	3.450	856.656
2060	3.460	3.460	870.329
2061	3.450	3.450	884.285
2062	3.450	3.450	898.520

Table 8 (continued)
Funding Requirements for License Termination
2015 Shutdown, 60-Year SAFSTOR

Basis Year		2010	
Fund Balance (10/31/2010)		$486.380	(millions)
Annual Escalation		0.00%	
Annual Earnings		2.00%	
	A	B	C
Year	License Termination Cost (millions)	Escalated License Termination Cost Escalated at 0% (millions)	Decommissioning Trust Fund Escalated at 2% (minus expenses) (millions)
2063	3.450	3.450	913.040
2064	3.460	3.460	927.841
2065	23.419	23.419	922.978
2066	83.467	83.467	857.970
2067	206.738	206.738	668.392
2068	114.077	114.077	567.683
2069	39.020	39.020	540.017
2070	32.134	32.134	518.684
2071	32.134	32.134	496.924
2072	32.222	32.222	474.641
2073	23.682	23.682	460.452
2074	0.000	0.000	469.661
Total	836.445	836.445	

Calculations:

Column B = (A)*(1+.00)^(current year – 2010) or for 0%, B = A
Column C = (Previous year's fund balance) * (1 + .02) – B (current year's decommissioning expenditures)

APPENDIX A

DETAILED COST ANALYSIS

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1a - Shutdown through Transition																					
Period 1a Direct Decommissioning Activities																					
1a.1.1	SAFSTOR site characterization survey	-	-	-	-	-	-	636	191	826	826	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	60	9	69	69	-	-	-	-	-	-	-	-	-	928
1a.1.3	Notification of Cessation of Operations									a											
1a.1.4	Remove fuel & source material									n/a											
1a.1.5	Notification of Permanent Defueling									a											
1a.1.6	Deactivate plant systems & process waste									a											
1a.1.7	Prepare and submit PSDAR	-	-	-	-	-	-	93	14	107	107	-	-	-	-	-	-	-	-	-	1,428
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	60	9	69	69	-	-	-	-	-	-	-	-	-	928
1a.1.9	Perform detailed rad survey									a											
1a.1.10	Estimate by-product inventory	-	-	-	-	-	-	46	7	53	53	-	-	-	-	-	-	-	-	-	714
1a.1.11	End product description	-	-	-	-	-	-	46	7	53	53	-	-	-	-	-	-	-	-	-	714
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	70	10	80	80	-	-	-	-	-	-	-	-	-	1,071
1a.1.13	Define major work sequence	-	-	-	-	-	-	46	7	53	53	-	-	-	-	-	-	-	-	-	714
1a.1.14	Perform SER and EA	-	-	-	-	-	-	144	22	165	165	-	-	-	-	-	-	-	-	-	2,213
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	232	35	267	267	-	-	-	-	-	-	-	-	-	3,570
Activity Specifications																					
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	228	34	263	263	-	-	-	-	-	-	-	-	-	3,513
1a.1.16.2	Plant systems	-	-	-	-	-	-	193	29	222	222	-	-	-	-	-	-	-	-	-	2,975
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	145	22	167	167	-	-	-	-	-	-	-	-	-	2,228
1a.1.16.4	Waste management	-	-	-	-	-	-	93	14	107	107	-	-	-	-	-	-	-	-	-	1,428
1a.1.16.5	Facility and site dormancy	-	-	-	-	-	-	93	14	107	107	-	-	-	-	-	-	-	-	-	1,428
1a.1.16	Total	-	-	-	-	-	-	752	113	865	865	-	-	-	-	-	-	-	-	-	11,572
Detailed Work Procedures																					
1a.1.17.1	Plant systems	-	-	-	-	-	-	55	8	63	63	-	-	-	-	-	-	-	-	-	845
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	56	8	64	64	-	-	-	-	-	-	-	-	-	857
1a.1.17	Total	-	-	-	-	-	-	111	17	127	127	-	-	-	-	-	-	-	-	-	1,702
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	5	1	5	5	-	-	-	-	-	-	-	-	-	71
1a.1.19	Drain/de-energize non-cont. systems									a											
1a.1.20	Drain & dry NSSS									a											
1a.1.21	Drain/de-energize contaminated systems									a											
1a.1.22	Decon/secure contaminated systems									a											
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	2,301	441	2,742	2,742	-	-	-	-	-	-	-	-	-	25,625
Period 1a Additional Costs																					
1a.2.1	Asbestos Remediation	-	1,379	0	78	-	203	-	407	2,067	2,067	-	-	-	6,580	-	-	-	85,540	13,572	-
1a.2	Subtotal Period 1a Additional Costs	-	1,379	0	78	-	203	-	407	2,067	2,067	-	-	-	6,580	-	-	-	85,540	13,572	-
Period 1a Collateral Costs																					
1a.3.1	Small tool allowance	-	22	-	-	-	-	-	3	25	25	-	-	-	-	-	-	-	-	-	-
1a.3.2	Spent Fuel Capital and Transfer	-	-	-	-	-	-	20,767	3,115	23,882	-	23,882	-	-	-	-	-	-	-	-	-
1a.3.3	*Outfall Lease*	-	-	-	-	-	-	999	100	1,099	1,099	-	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	22	-	-	-	-	21,766	3,218	25,006	1,124	23,882	-	-	-	-	-	-	-	-	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes: Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	1,149	115	1,264	1,264	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	549	-	-	-	-	-	137	687	687	-	-	-	-	-	-	-	-	-	-
1a.4.4	*Disposal of DAW generated*	-	-	2	1	-	27	-	7	36	36	-	-	-	565	-	-	-	11,299	3	-
1a.4.5	Plant energy budget	-	-	-	-	-	-	3,040	456	3,496	3,496	-	-	-	-	-	-	-	-	-	-
1a.4.6	NRC Fees	-	-	-	-	-	-	251	25	277	277	-	-	-	-	-	-	-	-	-	-
1a.4.7	Emergency Planning Fees	-	-	-	-	-	-	1,487	149	1,636	-	1,636	-	-	-	-	-	-	-	-	-
1a.4.8	Site O&M	-	-	-	-	-	-	2,646	397	3,043	3,043	-	-	-	-	-	-	-	-	-	-
1a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	764	115	878	-	878	-	-	-	-	-	-	-	-	-
1a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	44	7	51	-	51	-	-	-	-	-	-	-	-	-
1a.4.11	Environmental	-	-	-	-	-	-	448	67	515	515	-	-	-	-	-	-	-	-	-	-
1a.4.12	Corporate A&G	-	-	-	-	-	-	1,679	252	1,931	1,931	-	-	-	-	-	-	-	-	-	-
1a.4.13	Security Staff Cost	-	-	-	-	-	-	7,551	1,133	8,684	8,684	-	-	-	-	-	-	-	-	-	157,471
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	17,030	2,555	19,585	19,585	-	-	-	-	-	-	-	-	-	346,229
1a.4	Subtotal Period 1a Period-Dependent Costs	-	549	2	1	-	27	36,089	5,413	42,082	39,516	2,565	-	-	565	-	-	-	11,299	3	503,700
1a.0	TOTAL PERIOD 1a COST	-	1,950	2	79	-	230	60,157	9,479	71,897	45,450	26,447	-	-	7,145	-	-	-	96,839	13,575	529,325
PERIOD 1b - SAFSTOR Limited DECON Activities																					
Period 1b Direct Decommissioning Activities																					
Decontamination of Site Buildings																					
1b.1.1.1	Reactor Containment	2,032	-	-	-	-	-	-	1,016	3,049	3,049	-	-	-	-	-	-	-	-	22,977	-
1b.1.1.2	Fuel Storage Building	629	-	-	-	-	-	-	314	943	943	-	-	-	-	-	-	-	-	6,818	-
1b.1.1.3	Primary Auxiliary Building	320	-	-	-	-	-	-	160	479	479	-	-	-	-	-	-	-	-	3,670	-
1b.1.1.4	Waste Holdup Tank Pit	61	-	-	-	-	-	-	30	91	91	-	-	-	-	-	-	-	-	700	-
1b.1.1	Totals	3,042	-	-	-	-	-	-	1,521	4,563	4,563	-	-	-	-	-	-	-	-	34,165	-
1b.1	Subtotal Period 1b Activity Costs	3,042	-	-	-	-	-	-	1,521	4,563	4,563	-	-	-	-	-	-	-	-	34,165	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	991	-	-	-	-	-	-	149	1,140	1,140	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process liquid waste	179	-	87	453	-	328	-	248	1,295	1,295	-	-	-	1,121	-	-	-	67,278	219	-
1b.3.3	Small tool allowance	-	61	-	-	-	-	-	9	70	70	-	-	-	-	-	-	-	-	-	-
1b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,264	190	1,454	-	1,454	-	-	-	-	-	-	-	-	-
1b.3.5	Outfall Lease	-	-	-	-	-	-	252	25	277	277	-	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	1,170	61	87	453	-	328	1,516	621	4,235	2,782	1,454	-	-	1,121	-	-	-	67,278	219	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	687	-	-	-	-	-	-	172	859	859	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	290	29	319	319	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	286	-	-	-	-	-	72	358	358	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	149	-	-	-	-	-	22	171	171	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	1	1	-	22	-	6	30	30	-	-	-	458	-	-	-	9,152	2	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	766	115	881	881	-	-	-	-	-	-	-	-	-	-
1b.4.8	*NRC Fees*	-	-	-	-	-	-	63	6	70	70	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	375	37	412	-	412	-	-	-	-	-	-	-	-	-
1b.4.10	Site O&M	-	-	-	-	-	-	667	100	767	767	-	-	-	-	-	-	-	-	-	-
1b.4.11	Spent Fuel Pool O&M	-	-	-	-	-	-	193	29	221	-	221	-	-	-	-	-	-	-	-	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 1b Period-Dependent Costs (continued)																					
1b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	11	2	13	-	13	-	-	-	-	-	-	-	-	-
1b.4.13	Environmental	-	-	-	-	-	-	113	17	130	130	-	-	-	-	-	-	-	-	-	-
1b.4.14	Corporate A&G	-	-	-	-	-	-	423	63	487	487	-	-	-	-	-	-	-	-	-	-
1b.4.15	Security Staff Cost	-	-	-	-	-	-	1,903	285	2,189	2,189	-	-	-	-	-	-	-	-	-	39,691
1b.4.16	Utility Staff Cost	-	-	-	-	-	-	4,293	644	4,936	4,936	-	-	-	-	-	-	-	-	-	87,269
1b.4	Subtotal Period 1b Period-Dependent Costs	687	435	1	1	-	22	9,096	1,599	11,842	11,195	647	-	-	458	-	-	-	9,152	2	126,960
1b.0	TOTAL PERIOD 1b COST	4,899	496	89	454	-	349	10,612	3,741	20,640	18,539	2,100	-	-	1,579	-	-	-	76,430	34,386	126,960
PERIOD 1c - Preparations for SAFSTOR Dormancy																					
Period 1c Direct Decommissioning Activities																					
1c.1.1	Prepare support equipment for storage	-	549	-	-	-	-	-	82	632	632	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	65	-	-	-	-	-	10	75	75	-	-	-	-	-	-	-	-	700	-
1c.1.3	Interim survey prior to dormancy	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	8,031	-
1c.1.4	Secure building accesses									a											
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	27	4	31	31	-	-	-	-	-	-	-	-	-	416
1c.1	Subtotal Period 1c Activity Costs	-	614	-	-	-	-	760	316	1,690	1,690	-	-	-	-	-	-	-	-	11,731	416
Period 1c Additional Costs																					
1c.2.1	Spent fuel pool isolation	-	-	-	-	-	-	6,654	998	7,652	7,652	-	-	-	-	-	-	-	-	-	-
1c.2	Subtotal Period 1c Additional Costs	-	-	-	-	-	-	6,654	998	7,652	7,652	-	-	-	-	-	-	-	-	-	-
Period 1c Collateral Costs																					
1c.3.1	Process liquid waste	201	-	98	509	-	368	-	279	1,454	1,454	-	-	-	1,259	-	-	-	75,549	245	-
1c.3.2	Small tool allowance	-	7	-	-	-	-	-	1	8	8	-	-	-	-	-	-	-	-	-	-
1c.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,264	190	1,454	-	1,454	-	-	-	-	-	-	-	-	-
1c.3.4	Outfall Lease	-	-	-	-	-	-	252	25	277	277	-	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	201	7	98	509	-	368	1,516	494	3,193	1,740	1,454	-	-	1,259	-	-	-	75,549	245	-
Period 1c Period-Dependent Costs																					
1c.4.1	Insurance	-	-	-	-	-	-	290	29	319	319	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	179	-	-	-	-	-	45	224	224	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	149	-	-	-	-	-	22	171	171	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	0	0	-	7	-	2	9	9	-	-	-	142	-	-	-	2,848	1	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	766	115	881	881	-	-	-	-	-	-	-	-	-	-
1c.4.7	NRC Fees	-	-	-	-	-	-	63	6	70	70	-	-	-	-	-	-	-	-	-	-
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	375	37	412	-	412	-	-	-	-	-	-	-	-	-
1c.4.9	Site O&M	-	-	-	-	-	-	667	100	767	767	-	-	-	-	-	-	-	-	-	-
1c.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	193	29	221	-	221	-	-	-	-	-	-	-	-	-
1c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	11	2	13	-	13	-	-	-	-	-	-	-	-	-
1c.4.12	Environmental	-	-	-	-	-	-	113	17	130	130	-	-	-	-	-	-	-	-	-	-
1c.4.13	Corporate A&G	-	-	-	-	-	-	423	63	487	487	-	-	-	-	-	-	-	-	-	-
1c.4.14	Security Staff Cost	-	-	-	-	-	-	1,903	285	2,189	2,189	-	-	-	-	-	-	-	-	-	39,691
1c.4.15	Utility Staff Cost	-	-	-	-	-	-	4,293	644	4,936	4,936	-	-	-	-	-	-	-	-	-	87,269
1c.4	Subtotal Period 1c Period-Dependent Costs	-	328	0	0	-	7	9,096	1,397	10,829	10,183	647	-	-	142	-	-	-	2,848	1	126,960
1c.0	TOTAL PERIOD 1c COST	201	949	98	509	-	375	18,026	3,206	23,364	21,264	2,100	-	-	1,402	-	-	-	78,397	11,977	127,377

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 1 TOTALS		5,100	3,395	189	1,042	-	954	88,795	16,426	115,901	85,253	30,647	-	-	10,125	-	-	-	251,666	59,938	783,662
PERIOD 2a - SAFSTOR Dormancy with Wet Spent Fuel Storage																					
Period 2a Direct Decommissioning Activities																					
2a.1.1	Quarterly Inspection									a											
2a.1.2	Semi-annual environmental survey									a											
2a.1.3	Prepare reports									a											
2a.1.4	Bituminous roof replacement	-	-	-	-	-	-	208	31	239	239	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	884	221	1,105	1,105	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	1,092	252	1,345	1,345	-	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	76,388	11,458	87,846	-	87,846	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	76,388	11,458	87,846	-	87,846	-	-	-	-	-	-	-	-	-
Period 2a Period-Dependent Costs																					
2a.4.1	Insurance	-	-	-	-	-	-	4,318	432	4,750	4,337	413	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	670	-	-	-	-	-	168	838	838	-	-	-	-	-	-	-	-	-	-
2a.4.4	Disposal of DAW generated	-	-	7	5	-	120	-	32	164	164	-	-	-	2,538	-	-	-	50,761	12	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	3,984	598	4,582	2,291	2,291	-	-	-	-	-	-	-	-	-
2a.4.6	NRC Fees	-	-	-	-	-	-	1,308	131	1,439	1,439	-	-	-	-	-	-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	9,745	974	10,719	-	10,719	-	-	-	-	-	-	-	-	-
2a.4.8	Site O&M	-	-	-	-	-	-	1,224	184	1,408	304	1,104	-	-	-	-	-	-	-	-	-
2a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	5,006	751	5,757	-	5,757	-	-	-	-	-	-	-	-	-
2a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	291	44	334	-	334	-	-	-	-	-	-	-	-	-
2a.4.11	Environmental	-	-	-	-	-	-	2,934	440	3,374	1,687	1,687	-	-	-	-	-	-	-	-	-
2a.4.12	Corporate A&G	-	-	-	-	-	-	1,100	165	1,265	1,265	-	-	-	-	-	-	-	-	-	-
2a.4.13	Security Staff Cost	-	-	-	-	-	-	19,298	2,895	22,192	6,169	16,023	-	-	-	-	-	-	-	-	399,806
2a.4.14	Utility Staff Cost	-	-	-	-	-	-	12,795	1,919	14,714	2,877	11,837	-	-	-	-	-	-	-	-	252,869
2a.4	Subtotal Period 2a Period-Dependent Costs	-	670	7	5	-	120	62,003	8,731	71,536	21,373	50,164	-	-	2,538	-	-	-	50,761	12	652,674
2a.0	TOTAL PERIOD 2a COST	-	670	7	5	-	120	139,483	20,441	160,727	22,717	138,010	-	-	2,538	-	-	-	50,761	12	652,674
PERIOD 2b - SAFSTOR Dormancy with Dry Spent Fuel Storage																					
Period 2b Direct Decommissioning Activities																					
2b.1.1	Quarterly Inspection									a											
2b.1.2	Semi-annual environmental survey									a											
2b.1.3	Prepare reports									a											
2b.1.4	Bituminous roof replacement	-	-	-	-	-	-	761	114	876	876	-	-	-	-	-	-	-	-	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	3,234	809	4,043	4,043	-	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	3,996	923	4,918	4,918	-	-	-	-	-	-	-	-	-	-
Period 2b Collateral Costs																					
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	5,630	844	6,474	-	6,474	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	5,630	844	6,474	-	6,474	-	-	-	-	-	-	-	-	-
Period 2b Period-Dependent Costs																					
2b.4.1	Insurance	-	-	-	-	-	-	14,740	1,474	16,214	15,866	348	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 2b Period-Dependent Costs (continued)																					
2b.4.3	Health physics supplies	-	2,167	-	-	-	-	-	542	2,708	2,708	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	26	16	-	420	-	110	572	572	-	-	-	8,866	-	-	-	177,310	41	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	7,287	1,093	8,380	8,380	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	4,786	479	5,265	5,265	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees	-	-	-	-	-	-	29,177	2,918	32,095	-	32,095	-	-	-	-	-	-	-	-	-
2b.4.8	Site O&M	-	-	-	-	-	-	968	145	1,114	1,114	-	-	-	-	-	-	-	-	-	-
2b.4.9	ISFSI Operating Costs	-	-	-	-	-	-	1,064	160	1,223	-	1,223	-	-	-	-	-	-	-	-	-
2b.4.10	Environmental	-	-	-	-	-	-	5,365	805	6,170	6,170	-	-	-	-	-	-	-	-	-	-
2b.4.11	Corporate A&G	-	-	-	-	-	-	4,025	604	4,628	4,628	-	-	-	-	-	-	-	-	-	-
2b.4.12	Security Staff Cost	-	-	-	-	-	-	33,684	5,053	38,737	22,568	16,169	-	-	-	-	-	-	-	-	675,000
2b.4.13	Utility Staff Cost	-	-	-	-	-	-	9,153	1,373	10,525	10,525	-	-	-	-	-	-	-	-	-	200,000
2b.4	Subtotal Period 2b Period-Dependent Costs	-	2,167	26	16	-	420	110,250	14,754	127,633	77,798	49,835	-	-	8,866	-	-	-	177,310	41	875,000
2b.0	TOTAL PERIOD 2b COST	-	2,167	26	16	-	420	119,875	16,521	139,026	82,716	56,310	-	-	8,866	-	-	-	177,310	41	875,000
PERIOD 2c - SAFSTOR Dormancy without Spent Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
2c.1.1	Quarterly Inspection									a											
2c.1.2	Semi-annual environmental survey									a											
2c.1.3	Prepare reports									a											
2c.1.4	Bituminous roof replacement	-	-	-	-	-	-	552	83	635	635	-	-	-	-	-	-	-	-	-	-
2c.1.5	Maintenance supplies	-	-	-	-	-	-	2,344	586	2,930	2,930	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	2,895	669	3,564	3,564	-	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	10,453	1,045	11,498	11,498	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	1,570	-	-	-	-	-	393	1,963	1,963	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	19	12	-	305	-	80	415	415	-	-	-	6,425	-	-	-	128,494	29	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	5,281	792	6,073	6,073	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	3,469	347	3,816	3,816	-	-	-	-	-	-	-	-	-	-
2c.4.7	Site O&M	-	-	-	-	-	-	702	105	807	807	-	-	-	-	-	-	-	-	-	-
2c.4.8	Environmental	-	-	-	-	-	-	3,888	583	4,471	4,471	-	-	-	-	-	-	-	-	-	-
2c.4.9	Corporate A&G	-	-	-	-	-	-	2,917	437	3,354	3,354	-	-	-	-	-	-	-	-	-	-
2c.4.10	Security Staff Cost	-	-	-	-	-	-	14,221	2,133	16,355	16,355	-	-	-	-	-	-	-	-	-	271,757
2c.4.11	Utility Staff Cost	-	-	-	-	-	-	6,633	995	7,628	7,628	-	-	-	-	-	-	-	-	-	144,937
2c.4	Subtotal Period 2c Period-Dependent Costs	-	1,570	19	12	-	305	47,563	6,911	56,379	56,379	-	-	-	6,425	-	-	-	128,494	29	416,694
2c.0	TOTAL PERIOD 2c COST	-	1,570	19	12	-	305	50,458	7,579	59,943	59,943	-	-	-	6,425	-	-	-	128,494	29	416,694
PERIOD 2 TOTALS		-	4,407	52	33	-	845	309,817	44,542	359,696	165,376	194,320	-	-	17,828	-	-	-	356,565	82	1,944,369
PERIOD 3a - Reactivate Site Following SAFSTOR Dormancy																					
Period 3a Direct Decommissioning Activities																					
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	60	9	69	69	-	-	-	-	-	-	-	-	-	928
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	213	32	246	246	-	-	-	-	-	-	-	-	-	3,284
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	46	7	53	53	-	-	-	-	-	-	-	-	-	714
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	60	9	69	69	-	-	-	-	-	-	-	-	-	928

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
3a.1.6	Define major work sequence	-	-	-	-	-	-	348	52	400	400	-	-	-	-	-	-	-	-	-	5,355
3a.1.7	Perform SER and EA	-	-	-	-	-	-	144	22	165	165	-	-	-	-	-	-	-	-	-	2,213
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	232	35	267	267	-	-	-	-	-	-	-	-	-	3,570
3a.1.9	Prepare/submit License Termination Plan	-	-	-	-	-	-	190	29	219	219	-	-	-	-	-	-	-	-	-	2,925
3a.1.10	Receive NRC approval of termination plan									*a*											
Activity Specifications																					
3a.1.11.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	342	51	393	354	-	39	-	-	-	-	-	-	-	5,262
3a.1.11.2	Plant systems	-	-	-	-	-	-	193	29	222	200	-	22	-	-	-	-	-	-	-	2,975
3a.1.11.3	Reactor internals	-	-	-	-	-	-	330	49	379	379	-	-	-	-	-	-	-	-	-	5,069
3a.1.11.4	Reactor vessel	-	-	-	-	-	-	302	45	347	347	-	-	-	-	-	-	-	-	-	4,641
3a.1.11.5	Biological shield	-	-	-	-	-	-	23	3	27	27	-	-	-	-	-	-	-	-	-	357
3a.1.11.6	Steam generators	-	-	-	-	-	-	145	22	167	167	-	-	-	-	-	-	-	-	-	2,228
3a.1.11.7	Reinforced concrete	-	-	-	-	-	-	74	11	85	43	-	43	-	-	-	-	-	-	-	1,142
3a.1.11.8	Main Turbine	-	-	-	-	-	-	19	3	21	-	-	21	-	-	-	-	-	-	-	286
3a.1.11.9	Main Condensers	-	-	-	-	-	-	19	3	21	-	-	21	-	-	-	-	-	-	-	286
3a.1.11.10	Plant structures & buildings	-	-	-	-	-	-	145	22	167	83	-	83	-	-	-	-	-	-	-	2,228
3a.1.11.11	Waste management	-	-	-	-	-	-	213	32	246	246	-	-	-	-	-	-	-	-	-	3,284
3a.1.11.12	Facility & site closeout	-	-	-	-	-	-	42	6	48	24	-	24	-	-	-	-	-	-	-	643
3a.1.11	Total	-	-	-	-	-	-	1,846	277	2,123	1,869	-	254	-	-	-	-	-	-	-	28,401
Planning & Site Preparations																					
3a.1.12	Prepare dismantling sequence	-	-	-	-	-	-	111	17	128	128	-	-	-	-	-	-	-	-	-	1,714
3a.1.13	Plant prep. & temp. svces	-	-	-	-	-	-	2,800	420	3,220	3,220	-	-	-	-	-	-	-	-	-	-
3a.1.14	Design water clean-up system	-	-	-	-	-	-	65	10	75	75	-	-	-	-	-	-	-	-	-	1,000
3a.1.15	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,200	330	2,530	2,530	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	57	9	66	66	-	-	-	-	-	-	-	-	-	878
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	8,374	1,256	9,630	9,376	-	254	-	-	-	-	-	-	-	51,910
Period 3a Period-Dependent Costs																					
3a.4.1	Insurance	-	-	-	-	-	-	602	60	662	662	-	-	-	-	-	-	-	-	-	-
3a.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	427	-	-	-	-	-	107	534	534	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	591	-	-	-	-	-	89	679	679	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	1	1	-	23	-	6	31	31	-	-	-	481	-	-	-	9,613	2	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	3,040	456	3,496	3,496	-	-	-	-	-	-	-	-	-	-
3a.4.7	NRC Fees	-	-	-	-	-	-	251	25	277	277	-	-	-	-	-	-	-	-	-	-
3a.4.8	Site O&M	-	-	-	-	-	-	1,530	230	1,760	1,760	-	-	-	-	-	-	-	-	-	-
3a.4.9	Environmental	-	-	-	-	-	-	448	67	515	515	-	-	-	-	-	-	-	-	-	-
3a.4.10	Corporate A&G	-	-	-	-	-	-	1,679	252	1,931	1,931	-	-	-	-	-	-	-	-	-	-
3a.4.11	Security Staff Cost	-	-	-	-	-	-	293	44	337	337	-	-	-	-	-	-	-	-	-	6,257
3a.4.12	Utility Staff Cost	-	-	-	-	-	-	11,211	1,682	12,892	12,892	-	-	-	-	-	-	-	-	-	200,229
3a.4	Subtotal Period 3a Period-Dependent Costs	-	1,018	1	1	-	23	19,053	3,017	23,113	23,113	-	-	-	481	-	-	-	9,613	2	206,486
3a.0	TOTAL PERIOD 3a COST	-	1,018	1	1	-	23	27,427	4,273	32,743	32,489	-	254	-	481	-	-	-	9,613	2	258,395

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Burial Volumes Class B Cu. Feet	Burial Volumes Class C Cu. Feet	Burial Volumes GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 3b - Decommissioning Preparations																					
Period 3b Direct Decommissioning Activities																					
Detailed Work Procedures																					
3b.1.1.1	Plant systems	-	-	-	-	-	-	359	54	412	371	-	41	-	-	-	-	-	-	-	3,379
3b.1.1.2	Reactor internals	-	-	-	-	-	-	189	28	218	218	-	-	-	-	-	-	-	-	-	1,785
3b.1.1.3	Remaining buildings	-	-	-	-	-	-	102	15	118	29	-	88	-	-	-	-	-	-	-	964
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	714
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	714
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	76	11	87	87	-	-	-	-	-	-	-	-	-	714
3b.1.1.7	Reactor vessel	-	-	-	-	-	-	275	41	316	316	-	-	-	-	-	-	-	-	-	2,592
3b.1.1.8	Facility closeout	-	-	-	-	-	-	91	14	105	52	-	52	-	-	-	-	-	-	-	857
3b.1.1.9	Missile shields	-	-	-	-	-	-	34	5	39	39	-	-	-	-	-	-	-	-	-	321
3b.1.1.10	Biological shield	-	-	-	-	-	-	91	14	105	105	-	-	-	-	-	-	-	-	-	857
3b.1.1.11	Steam generators	-	-	-	-	-	-	349	52	401	401	-	-	-	-	-	-	-	-	-	3,284
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	76	11	87	44	-	44	-	-	-	-	-	-	-	714
3b.1.1.13	Main Turbine	-	-	-	-	-	-	118	18	136	-	-	136	-	-	-	-	-	-	-	1,114
3b.1.1.14	Main Condensers	-	-	-	-	-	-	118	18	136	-	-	136	-	-	-	-	-	-	-	1,114
3b.1.1.15	Auxiliary building	-	-	-	-	-	-	207	31	238	214	-	24	-	-	-	-	-	-	-	1,949
3b.1.1.16	Reactor building	-	-	-	-	-	-	207	31	238	214	-	24	-	-	-	-	-	-	-	1,949
3b.1.1	Total	-	-	-	-	-	-	2,443	366	2,809	2,265	-	545	-	-	-	-	-	-	-	23,022
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	2,443	366	2,809	2,265	-	545	-	-	-	-	-	-	-	23,022
Period 3b Additional Costs																					
3b.2.1	Site Characterization	-	-	-	-	-	-	2,003	601	2,604	2,604	-	-	-	-	-	-	-	-	10,604	3,999
3b.2.2	Staff relocations expenses	-	-	-	-	-	-	4,718	708	5,425	5,425	-	-	-	-	-	-	-	-	-	-
3b.2	Subtotal Period 3b Additional Costs	-	-	-	-	-	-	6,720	1,308	8,029	8,029	-	-	-	-	-	-	-	-	10,604	3,999
Period 3b Collateral Costs																					
3b.3.1	Decon equipment	991	-	-	-	-	-	-	149	1,140	1,140	-	-	-	-	-	-	-	-	-	-
3b.3.2	Pipe cutting equipment	-	1,100	-	-	-	-	-	165	1,265	1,265	-	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	991	1,100	-	-	-	-	-	314	2,405	2,405	-	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Decon supplies	31	-	-	-	-	-	-	8	38	38	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	334	33	367	367	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	231	-	-	-	-	-	58	289	289	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	299	-	-	-	-	-	45	344	344	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	1	0	-	13	-	3	17	17	-	-	-	265	-	-	-	5,300	1	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	1,541	231	1,772	1,772	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	127	13	140	140	-	-	-	-	-	-	-	-	-	-
3b.4.9	Site O&M	-	-	-	-	-	-	1,058	159	1,217	1,217	-	-	-	-	-	-	-	-	-	-
3b.4.10	Environmental	-	-	-	-	-	-	227	34	261	261	-	-	-	-	-	-	-	-	-	-
3b.4.11	Corporate A&G	-	-	-	-	-	-	851	128	979	979	-	-	-	-	-	-	-	-	-	-
3b.4.12	Security Staff Cost	-	-	-	-	-	-	149	22	171	171	-	-	-	-	-	-	-	-	-	3,171
3b.4.13	Utility Staff Cost	-	-	-	-	-	-	8,306	1,246	9,552	9,552	-	-	-	-	-	-	-	-	-	138,486
3b.4	Subtotal Period 3b Period-Dependent Costs	31	531	1	0	-	13	12,593	1,980	15,148	15,148	-	-	-	265	-	-	-	5,300	1	141,657
3b.0	TOTAL PERIOD 3b COST	1,022	1,631	1	0	-	13	21,757	3,968	28,391	27,846	-	545	-	265	-	-	-	5,300	10,605	168,678

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes: Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
PERIOD 3 TOTALS		1,022	2,648	2	1	-	35	49,184	8,241	61,134	60,335	-	799	-	746	-	-	-	14,912	10,607	427,073
PERIOD 4a - Large Component Removal																					
Period 4a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
4a.1.1.1	Reactor Coolant Piping	98	413	40	33	176	237	-	247	1,245	1,245	-	-	766	766	-	-	-	177,710	5,650	-
4a.1.1.2	Pressurizer Relief Tank	3	11	2	2	10	12	-	9	49	49	-	-	43	43	-	-	-	9,557	156	-
4a.1.1.3	Reactor Coolant Pumps & Motors	40	141	79	245	-	1,942	-	586	3,033	3,033	-	-	-	7,052	-	-	-	1,158,455	2,755	80
4a.1.1.4	Pressurizer	17	93	354	751	-	844	-	391	2,449	2,449	-	-	-	3,066	-	-	-	268,367	1,535	750
4a.1.1.5	Steam Generators	126	5,249	2,458	3,940	2,420	5,955	-	4,064	24,212	24,212	-	-	37,344	16,301	-	-	-	3,111,693	20,508	2,250
4a.1.1.6	Retired Steam Generator Units	-	-	2,458	3,940	2,420	5,955	-	2,689	17,462	17,462	-	-	37,344	16,301	-	-	-	3,111,693	10,800	2,250
4a.1.1.7	CRDMs/ICIs/Service Structure Removal	53	139	238	56	58	138	-	136	817	817	-	-	753	2,947	-	-	-	81,666	2,134	-
4a.1.1.8	Reactor Vessel Internals	82	2,846	4,366	712	-	4,640	178	5,792	18,617	18,617	-	-	-	2,312	376	480	-	325,439	17,433	829
4a.1.1.9	Vessel & Internals GTCC Disposal	-	-	-	-	-	10,997	-	1,649	12,646	12,646	-	-	-	-	-	-	496	104,146	-	-
4a.1.1.10	Reactor Vessel	-	6,741	1,155	448	-	7,518	178	9,242	25,283	25,283	-	-	-	6,481	2,955	-	-	954,563	17,433	829
4a.1.1	Totals	419	15,631	11,149	10,128	5,085	38,238	357	24,805	105,812	105,812	-	-	76,250	55,268	3,330	480	496	9,303,288	78,404	6,989
Removal of Major Equipment																					
4a.1.2	Main Turbine/Generator	-	644	292	60	770	-	-	315	2,080	2,080	-	-	4,374	-	-	-	-	371,814	7,364	-
4a.1.3	Main Condensers	-	2,467	175	48	623	-	-	735	4,048	4,048	-	-	6,687	-	-	-	-	300,932	28,205	-
Cascading Costs from Clean Building Demolition																					
4a.1.4.1	Reactor Containment	-	13,202	-	-	-	-	-	1,980	15,182	15,182	-	-	-	-	-	-	-	-	104,998	-
4a.1.4.2	Fuel Storage Building	-	340	-	-	-	-	-	51	391	391	-	-	-	-	-	-	-	-	2,487	-
4a.1.4.3	Primary Auxiliary Building	-	446	-	-	-	-	-	67	513	513	-	-	-	-	-	-	-	-	3,561	-
4a.1.4.4	Waste Holdup Tank Pit	-	18	-	-	-	-	-	3	20	20	-	-	-	-	-	-	-	-	142	-
4a.1.4	Totals	-	14,006	-	-	-	-	-	2,101	16,107	16,107	-	-	-	-	-	-	-	-	111,189	-
Disposal of Plant Systems																					
4a.1.5.1	Aux Steam & Air Removal	-	556	5	19	240	-	-	178	998	998	-	-	2,856	-	-	-	-	115,977	6,231	-
4a.1.5.2	Aux Steam & Air Removal (RCA)	-	99	1	4	52	-	-	33	190	190	-	-	624	-	-	-	-	25,326	1,075	-
4a.1.5.3	Aux Steam-Primary Plant	-	60	1	2	29	-	-	20	112	112	-	-	347	-	-	-	-	14,081	674	-
4a.1.5.4	Aux Steam-Primary Plant (RCA)	-	86	1	3	36	-	-	28	154	154	-	-	431	-	-	-	-	17,506	925	-
4a.1.5.5	Bearing Cooling Water	-	362	-	-	-	-	-	54	417	-	-	417	-	-	-	-	-	-	4,420	-
4a.1.5.6	Chemical Cleaning	-	769	-	-	-	-	-	115	884	-	-	884	-	-	-	-	-	-	9,466	-
4a.1.5.7	Chemical Feed	-	13	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	155	-
4a.1.5.8	Chemical Feed (RCA)	-	70	1	2	25	-	-	21	118	118	-	-	292	-	-	-	-	11,867	682	-
4a.1.5.9	Chemistry Monitoring	-	4	0	0	1	0	-	1	6	6	-	-	7	1	-	-	-	384	46	-
4a.1.5.10	Circulating & Service Water	-	2,153	71	263	3,395	-	-	1,094	6,977	6,977	-	-	40,386	-	-	-	-	1,640,086	24,732	-
4a.1.5.11	Circulating & Service Water (RCA)	-	93	3	10	123	-	-	43	272	272	-	-	1,464	-	-	-	-	59,459	1,067	-
4a.1.5.12	Compressed Air	-	146	-	-	-	-	-	22	168	-	-	168	-	-	-	-	-	-	1,791	-
4a.1.5.13	Condensate	-	2,952	69	253	3,266	-	-	1,273	7,812	7,812	-	-	38,847	-	-	-	-	1,577,580	33,847	-
4a.1.5.14	Demineralizer Regeneration	-	70	1	2	24	-	-	21	118	118	-	-	289	-	-	-	-	11,751	749	-
4a.1.5.15	Electro Hydraulic Fluid	-	12	0	0	6	-	-	4	22	22	-	-	71	-	-	-	-	2,899	127	-
4a.1.5.16	Extraction Steam	-	993	23	86	1,112	-	-	430	2,644	2,644	-	-	13,226	-	-	-	-	537,096	11,462	-
4a.1.5.17	Feedwater	-	1,577	53	97	695	337	-	603	3,363	3,363	-	-	8,272	1,485	-	-	-	467,630	17,906	-
4a.1.5.18	Feedwater Emergency Make-Up	-	95	-	-	-	-	-	14	110	-	-	110	-	-	-	-	-	-	1,129	-
4a.1.5.19	Flash Evaporator	-	316	-	-	-	-	-	47	363	-	-	363	-	-	-	-	-	-	3,863	-
4a.1.5.20	HVAC - Clean	-	1,251	18	68	880	-	-	457	2,675	2,675	-	-	10,472	-	-	-	-	425,265	13,376	-
4a.1.5.21	Heating Steam & Condensate	-	328	3	10	131	-	-	103	575	575	-	-	1,555	-	-	-	-	63,162	3,658	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Disposal of Plant Systems (continued)																					
4a.1.5.22	Heating Steam & Condensate (RCA)	-	39	0	1	18	-	-	13	71	71	-	-	209	-	-	-	-	8,489	421	-
4a.1.5.23	Heating Steam & Condensate - FHB	-	145	1	3	43	-	-	43	236	236	-	-	510	-	-	-	-	20,715	1,501	-
4a.1.5.24	Helium & Vacuum Drying	-	5	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	57	-
4a.1.5.25	Hypochlorite Feed	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	15	-
4a.1.5.26	IP3 Petroleum Storage Tanks	-	95	-	-	-	-	-	14	110	-	-	110	-	-	-	-	-	-	1,104	-
4a.1.5.27	LP Heater Drains & Vents	-	1,069	11	40	510	-	-	351	1,980	1,980	-	-	6,067	-	-	-	-	246,398	12,050	-
4a.1.5.28	Low Level Intake Fish Screen Wash	-	19	-	-	-	-	-	3	22	-	-	22	-	-	-	-	-	-	230	-
4a.1.5.29	Low Level Vacuum Priming House	-	4	-	-	-	-	-	1	5	-	-	5	-	-	-	-	-	-	47	-
4a.1.5.30	Lube Oil	-	13	-	-	-	-	-	2	15	-	-	15	-	-	-	-	-	-	165	-
4a.1.5.31	Lube Oil Lines	-	25	-	-	-	-	-	4	29	-	-	29	-	-	-	-	-	-	305	-
4a.1.5.32	Main Gen Hydrogen Gas	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	38	-
4a.1.5.33	Main Steam	-	1,659	31	113	1,457	-	-	653	3,913	3,913	-	-	17,328	-	-	-	-	703,710	18,974	-
4a.1.5.34	Main Steam (RCA)	-	412	8	28	358	-	-	162	968	968	-	-	4,261	-	-	-	-	173,056	4,716	-
4a.1.5.35	Misc. Drains-Secondary Plant	-	3	0	0	1	-	-	1	4	4	-	-	9	-	-	-	-	352	32	-
4a.1.5.36	Moisture Separator & HP HTR DR & V	-	2,230	64	236	3,048	-	-	1,056	6,635	6,635	-	-	36,260	-	-	-	-	1,472,533	25,505	-
4a.1.5.37	Polymer Feed	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	16	-
4a.1.5.38	Rad Monitor Circ & Ser Wtr	-	3	0	0	1	-	-	1	4	4	-	-	6	-	-	-	-	249	31	-
4a.1.5.39	Rad Monitor Cont Particulate	-	1	0	0	0	-	-	0	2	2	-	-	3	-	-	-	-	125	15	-
4a.1.5.40	River Water Filtration	-	121	-	-	-	-	-	18	139	-	-	139	-	-	-	-	-	-	1,467	-
4a.1.5.41	Service Water Fuel Oil	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	307	-
4a.1.5.42	St Gen Fd Pmp Lube Oil & Seal Water	-	29	-	-	-	-	-	4	34	-	-	34	-	-	-	-	-	-	344	-
4a.1.5.43	Steam Gen Nitrogen Conn	-	11	-	-	-	-	-	2	13	-	-	13	-	-	-	-	-	-	140	-
4a.1.5.44	Steam Generator Blowdown	-	57	1	2	26	-	-	18	104	104	-	-	310	-	-	-	-	12,591	609	-
4a.1.5.45	Steam Generator Blowdown (RCA)	-	3	0	0	1	-	-	1	5	5	-	-	13	-	-	-	-	525	30	-
4a.1.5.46	Steam Generator Blowdown Recirc & Xfer	-	548	3	13	165	-	-	164	892	892	-	-	1,957	-	-	-	-	79,489	5,940	-
4a.1.5.47	Turbine Generator Seal Oil	-	7	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	-	88	-
4a.1.5.48	Turbine Gland Steam	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	715	-
4a.1.5.49	Vacuum Priming	-	245	-	-	-	-	-	37	282	-	-	282	-	-	-	-	-	-	2,990	-
4a.1.5.50	Waste Holdup Tank Pit	-	398	33	47	324	174	-	202	1,179	1,179	-	-	3,855	994	-	-	-	224,597	4,578	-
4a.1.5	Totals	-	19,235	401	1,303	15,966	512	-	7,331	44,747	42,027	-	2,720	189,928	2,479	-	-	-	7,912,897	219,811	-
4a.1.6	Scaffolding in support of decommissioning	-	633	10	3	34	5	-	166	853	853	-	-	369	23	-	-	-	18,663	7,938	-
4a.1	Subtotal Period 4a Activity Costs	419	52,617	12,027	11,542	22,478	38,755	357	35,452	173,647	170,927	-	2,720	277,609	57,770	3,330	480	496	17,907,590	452,912	6,989
Period 4a Collateral Costs																					
4a.3.1	Process liquid waste	43	-	24	123	-	89	-	64	342	342	-	-	-	304	-	-	-	18,212	59	-
4a.3.2	Small tool allowance	-	750	-	-	-	-	-	112	862	776	-	86	-	-	-	-	-	-	-	-
4a.3.3	Survey and Release of Scrap Metal	-	-	-	-	-	-	115	34	149	149	-	-	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	43	750	24	123	-	89	115	211	1,353	1,267	-	86	-	304	-	-	-	18,212	59	-
Period 4a Period-Dependent Costs																					
4a.4.1	Decon supplies	52	-	-	-	-	-	-	13	64	64	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	561	56	618	618	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4a.4.4	Health physics supplies	-	2,587	-	-	-	-	-	647	3,233	3,233	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	2,075	-	-	-	-	-	311	2,386	2,386	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	15	9	-	245	-	64	334	334	-	-	-	5,176	-	-	-	103,519	24	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	2,461	369	2,830	2,830	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	-	-	-	-	-	-	302	30	333	333	-	-	-	-	-	-	-	-	-	-
4a.4.9	Site O&M	-	-	-	-	-	-	2,797	420	3,216	3,216	-	-	-	-	-	-	-	-	-	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4a Period-Dependent Costs (continued)																					
4a.4.10	Radwaste Processing Equipment/Services	-	-	-	-	-	-	331	50	380	380	-	-	-	-	-	-	-	-	-	-
4a.4.11	Environmental	-	-	-	-	-	-	381	57	439	439	-	-	-	-	-	-	-	-	-	-
4a.4.12	Corporate A&G	-	-	-	-	-	-	1,430	215	1,645	1,645	-	-	-	-	-	-	-	-	-	-
4a.4.13	Security Staff Cost	-	-	-	-	-	-	2,748	412	3,161	3,161	-	-	-	-	-	-	-	-	-	55,536
4a.4.14	Utility Staff Cost	-	-	-	-	-	-	20,388	3,058	23,446	23,446	-	-	-	-	-	-	-	-	-	325,217
4a.4	Subtotal Period 4a Period-Dependent Costs	52	4,661	15	9	-	245	31,400	5,702	42,085	42,085	-	-	-	5,176	-	-	-	103,519	24	380,753
4a.0	TOTAL PERIOD 4a COST	513	58,028	12,066	11,675	22,478	39,089	31,872	41,365	217,085	214,279	-	2,806	277,609	63,250	3,330	480	496	18,029,330	452,995	387,742
PERIOD 4b - Site Decontamination																					
Period 4b Direct Decommissioning Activities																					
4b.1.1	Remove spent fuel racks	686	75	196	75	-	589	-	540	2,162	2,162	-	-	-	2,565	-	-	-	230,191	1,001	-
Disposal of Plant Systems																					
4b.1.2.1	Boron Recovery	-	1,302	42	85	771	202	-	509	2,912	2,912	-	-	9,177	959	-	-	-	451,542	14,768	-
4b.1.2.2	Chemical & Volume Control	-	696	24	33	165	161	-	246	1,325	1,325	-	-	1,961	710	-	-	-	142,481	7,733	-
4b.1.2.3	Component Cooling Water	-	633	41	77	627	222	-	323	1,924	1,924	-	-	7,455	971	-	-	-	389,526	7,312	-
4b.1.2.4	Component Cooling Water (RCA)	-	2,016	77	127	795	513	-	778	4,305	4,305	-	-	9,452	2,236	-	-	-	584,390	22,697	-
4b.1.2.5	Component Cooling Water - FHB	-	160	5	8	44	34	-	57	306	306	-	-	519	147	-	-	-	34,230	1,790	-
4b.1.2.6	Compressed Air (RCA)	-	165	1	3	42	-	-	48	259	259	-	-	501	-	-	-	-	20,360	1,789	-
4b.1.2.7	Containment Hydrogen Analyzer (RCA)	-	19	0	0	5	-	-	6	30	30	-	-	65	-	-	-	-	2,637	194	-
4b.1.2.8	Containment Instrument Air	-	19	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	233	-
4b.1.2.9	Containment Instrument Air (RCA)	-	31	0	1	11	-	-	10	52	52	-	-	130	-	-	-	-	5,274	303	-
4b.1.2.10	Containment Spray	-	235	-	-	-	-	-	35	270	-	-	270	-	-	-	-	-	-	2,790	-
4b.1.2.11	Containment Spray (RCA)	-	229	3	9	119	-	-	77	437	437	-	-	1,412	-	-	-	-	57,345	2,428	-
4b.1.2.12	Containment Vacuum & Leakage Monitor	-	83	1	3	36	-	-	27	150	150	-	-	431	-	-	-	-	17,512	876	-
4b.1.2.13	Decontamination	-	38	0	2	21	-	-	13	73	73	-	-	246	-	-	-	-	10,000	388	-
4b.1.2.14	Electrical - Clean Non RCA	-	2,192	-	-	-	-	-	329	2,521	-	-	2,521	-	-	-	-	-	-	25,964	-
4b.1.2.15	Electrical - Clean RCA	-	3,984	51	178	2,290	-	-	1,371	7,873	7,873	-	-	27,243	-	-	-	-	1,106,350	42,545	-
4b.1.2.16	Electrical - Contaminated	-	585	7	21	243	18	-	191	1,065	1,065	-	-	2,891	77	-	-	-	124,323	6,419	-
4b.1.2.17	Electrical - FHB	-	40	0	1	13	1	-	12	67	67	-	-	149	4	-	-	-	6,410	433	-
4b.1.2.18	Fire Protection & Domestic Water	-	219	-	-	-	-	-	33	252	-	-	252	-	-	-	-	-	-	2,619	-
4b.1.2.19	Fire Protection & Domestic Water (RCA)	-	43	1	3	36	-	-	17	100	100	-	-	431	-	-	-	-	17,501	460	-
4b.1.2.20	Fuel Pit (RCA)	-	269	17	33	275	94	-	139	826	826	-	-	3,273	408	-	-	-	169,518	3,030	-
4b.1.2.21	Fuel Pit - FHB	-	38	2	2	3	11	-	13	68	68	-	-	38	47	-	-	-	5,790	392	-
4b.1.2.22	Gaseous Waste Disposal	-	73	3	5	44	15	-	30	170	170	-	-	525	67	-	-	-	27,151	836	-
4b.1.2.23	Gaseous Waste Disposal (RCA)	-	91	3	4	22	19	-	32	171	171	-	-	265	82	-	-	-	18,116	1,027	-
4b.1.2.24	Gaseous Waste Disposal - FHB	-	2	0	0	1	0	-	1	5	5	-	-	18	1	-	-	-	812	25	-
4b.1.2.25	HVAC - RCA (FHB)	-	11	0	1	7	-	-	4	23	23	-	-	87	-	-	-	-	3,526	110	-
4b.1.2.26	HVAC - RCA (Other)	-	319	6	22	285	-	-	126	758	758	-	-	3,386	-	-	-	-	137,500	3,176	-
4b.1.2.27	Hydraulic Fluid -Personnel Hatch	-	1	0	0	0	-	-	0	2	2	-	-	3	-	-	-	-	125	11	-
4b.1.2.28	Oxygen (RCA)	-	3	0	0	2	-	-	1	6	6	-	-	19	-	-	-	-	767	36	-
4b.1.2.29	Radiation Monitoring	-	11	0	0	2	-	-	3	16	16	-	-	28	-	-	-	-	1,152	120	-
4b.1.2.30	Radiation Monitoring (RCA)	-	8	0	0	2	-	-	2	12	12	-	-	26	-	-	-	-	1,061	79	-
4b.1.2.31	Reactor Cavity Purification	-	83	4	4	9	25	-	29	153	153	-	-	106	108	-	-	-	13,973	874	-
4b.1.2.32	Reactor Coolant	-	323	26	37	135	211	-	162	895	895	-	-	1,607	920	-	-	-	147,766	3,713	-
4b.1.2.33	Recirculating Spray	-	471	48	94	819	238	-	319	1,989	1,989	-	-	9,746	1,038	-	-	-	488,849	5,293	-
4b.1.2.34	Residual Heat Removal	-	590	33	66	574	173	-	290	1,726	1,726	-	-	6,825	755	-	-	-	344,858	6,760	-
4b.1.2.35	Safety Injection	-	329	-	-	-	-	-	49	378	-	-	378	-	-	-	-	-	-	4,011	-
4b.1.2.36	Sampling	-	39	1	1	3	4	-	12	60	60	-	-	40	19	-	-	-	3,369	467	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Disposal of Plant Systems (continued)																					
4b.1.2.37	Sampling (RCA)	-	113	3	2	2	14	-	33	167	167	-	-	23	63	-	-	-	6,598	1,359	-
4b.1.2.38	Service Air -Station Black Out	-	4	0	1	9	-	-	2	16	16	-	-	103	-	-	-	-	4,164	48	-
4b.1.2.39	Vent & Drain	-	100	1	3	37	-	-	31	171	171	-	-	442	-	-	-	-	17,945	1,088	-
4b.1.2.40	Vent & Drain (RCA)	-	37	2	2	4	13	-	14	71	71	-	-	49	58	-	-	-	7,169	395	-
4b.1.2.41	Waste Disposal	-	213	14	18	64	100	-	92	501	501	-	-	762	458	-	-	-	70,158	2,374	-
4b.1.2.42	Waste Disposal (RCA)	-	270	20	19	17	139	-	109	573	573	-	-	200	605	-	-	-	62,389	2,748	-
4b.1.2.43	Waste Neutralization	-	84	1	3	38	-	-	27	152	152	-	-	448	-	-	-	-	18,194	869	-
4b.1.2	Totals	-	16,170	435	867	7,573	2,208	-	5,605	32,858	29,415	-	3,443	90,085	9,733	-	-	-	4,520,849	180,582	-
4b.1.3	Scaffolding in support of decommissioning	-	950	15	5	52	8	-	249	1,279	1,279	-	-	553	34	-	-	-	27,995	11,907	-
Decontamination of Site Buildings																					
4b.1.4.1	Reactor Containment	1,852	2,987	3,876	2,624	259	4,162	-	3,533	19,294	19,294	-	-	3,084	148,074	-	-	-	14,929,850	54,036	-
4b.1.4.2	*Discharge Canal*	-	197	409	275	-	438	-	241	1,559	1,559	-	-	-	15,633	-	-	-	1,563,300	2,236	-
4b.1.4.3	Fuel Storage Building	567	2,266	3,410	2,305	162	3,659	-	2,476	14,845	14,845	-	-	1,924	130,315	-	-	-	13,108,770	32,012	-
4b.1.4.4	Misc Structures Contaminated	5	18	3	2	-	3	-	8	39	39	-	-	-	102	-	-	-	10,200	236	-
4b.1.4.5	Primary Auxiliary Building	298	305	458	311	36	492	-	446	2,347	2,347	-	-	434	17,502	-	-	-	1,767,050	6,736	-
4b.1.4.6	Waste Holdup Tank Pit	57	15	3	2	5	3	-	34	117	117	-	-	54	92	-	-	-	11,371	788	-
4b.1.4	Totals	2,779	5,788	8,159	5,519	462	8,757	-	6,739	38,202	38,202	-	-	5,496	311,718	-	-	-	31,390,540	96,044	-
4b.1	Subtotal Period 4b Activity Costs	3,465	22,983	8,806	6,466	8,086	11,562	-	13,133	74,500	71,057	-	3,443	96,134	324,051	-	-	-	36,169,580	289,535	-
Period 4b Additional Costs																					
4b.2.1	License Termination Survey	-	-	-	-	-	-	564	169	733	733	-	-	-	-	-	-	-	-	-	6,240
4b.2.2	ISFSI License Termination	-	51	9	40	-	48	769	147	1,064	-	1,064	-	-	1,702	-	-	-	142,546	2,663	1,280
4b.2.3	Septic Soils Storage Area Remediation	-	205	6	1,139	-	2,231	-	780	4,361	4,361	-	-	-	81,000	-	-	-	6,156,000	1,658	-
4b.2.4	Equipment Storage Yard DU Cask	-	2	-	13	243	-	-	63	321	321	-	-	200	-	-	-	-	45,000	-	-
4b.2.5	Outfall Remediation	-	457	49	2,577	-	5,047	-	1,767	9,897	9,897	-	-	-	183,240	-	-	-	13,926,240	3,677	-
4b.2.6	Main Transformer Yard Remediation	-	86	2	321	-	628	-	227	1,264	1,264	-	-	-	22,800	-	-	-	1,732,800	565	-
4b.2	Subtotal Period 4b Additional Costs	-	802	66	4,090	243	7,953	1,333	3,154	17,640	16,576	1,064	-	200	288,742	-	-	-	22,002,590	8,564	7,520
Period 4b Collateral Costs																					
4b.3.1	Process liquid waste	76	-	42	220	-	159	-	115	611	611	-	-	-	543	-	-	-	32,596	106	-
4b.3.2	Small tool allowance	-	510	-	-	-	-	-	76	586	586	-	-	-	-	-	-	-	-	-	-
4b.3.3	Decommissioning Equipment Disposition	-	-	167	64	559	86	-	132	1,007	1,007	-	-	6,000	373	-	-	-	303,507	88	-
4b.3.4	Survey and Release of Scrap Metal	-	-	-	-	-	-	930	279	1,209	1,209	-	-	-	-	-	-	-	-	-	-
4b.3	Subtotal Period 4b Collateral Costs	76	510	209	283	559	245	930	602	3,413	3,413	-	-	6,000	917	-	-	-	336,103	194	-
Period 4b Period-Dependent Costs																					
4b.4.1	Decon supplies	751	-	-	-	-	-	-	188	939	939	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	863	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	2,067	-	-	-	-	-	517	2,584	2,584	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	3,165	-	-	-	-	-	475	3,640	3,640	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	12	8	-	201	-	53	274	274	-	-	-	4,239	-	-	-	84,784	19	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	2,986	448	3,434	3,434	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	465	46	511	511	-	-	-	-	-	-	-	-	-	-
4b.4.9	Site O&M	-	-	-	-	-	-	4,087	613	4,700	4,700	-	-	-	-	-	-	-	-	-	-
4b.4.10	Radwaste Processing Equipment/Services	-	-	-	-	-	-	508	76	585	585	-	-	-	-	-	-	-	-	-	-
4b.4.11	Environmental	-	-	-	-	-	-	586	88	674	674	-	-	-	-	-	-	-	-	-	-
4b.4.12	Corporate A&G	-	-	-	-	-	-	2,199	330	2,528	2,528	-	-	-	-	-	-	-	-	-	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Period 4b Period-Dependent Costs (continued)																					
4b.4.13	Security Staff Cost	-	-	-	-	-	-	4,224	634	4,858	4,858	-	-	-	-	-	-	-	-	-	85,357
4b.4.14	Utility Staff Cost	-	-	-	-	-	-	29,894	4,484	34,378	34,378	-	-	-	-	-	-	-	-	-	475,269
4b.4	Subtotal Period 4b Period-Dependent Costs	751	5,232	12	8	-	201	45,812	8,037	60,053	60,053	-	-	-	4,239	-	-	-	84,784	19	560,626
4b.0	TOTAL PERIOD 4b COST	4,291	29,526	9,094	10,847	8,888	19,961	48,074	24,925	155,606	151,099	1,064	3,443	102,334	617,949	-	-	-	58,593,050	298,312	568,146
PERIOD 4e - License Termination																					
Period 4e Direct Decommissioning Activities																					
4e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	180	54	234	234	-	-	-	-	-	-	-	-	-	-
4e.1.2	Terminate license									a											
4e.1	Subtotal Period 4e Activity Costs	-	-	-	-	-	-	180	54	234	234	-	-	-	-	-	-	-	-	-	-
Period 4e Additional Costs																					
4e.2.1	License Termination Survey	-	-	-	-	-	-	10,054	3,016	13,070	13,070	-	-	-	-	-	-	-	-	114,326	3,120
4e.2.2	Staff relocations expenses	-	-	-	-	-	-	4,718	708	5,425	5,425	-	-	-	-	-	-	-	-	-	-
4e.2	Subtotal Period 4e Additional Costs	-	-	-	-	-	-	14,772	3,724	18,496	18,496	-	-	-	-	-	-	-	-	114,326	3,120
Period 4e Period-Dependent Costs																					
4e.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	633	-	-	-	-	-	158	791	791	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	1	1	-	16	-	4	21	21	-	-	-	330	-	-	-	6,603	2	-
4e.4.5	Plant energy budget	-	-	-	-	-	-	468	69	527	527	-	-	-	-	-	-	-	-	-	-
4e.4.6	NRC Fees	-	-	-	-	-	-	267	27	294	294	-	-	-	-	-	-	-	-	-	-
4e.4.7	Site O&M	-	-	-	-	-	-	821	123	944	944	-	-	-	-	-	-	-	-	-	-
4e.4.8	Environmental	-	-	-	-	-	-	337	51	388	388	-	-	-	-	-	-	-	-	-	-
4e.4.9	Corporate A&G	-	-	-	-	-	-	1,265	190	1,455	1,455	-	-	-	-	-	-	-	-	-	-
4e.4.10	Security Staff Cost	-	-	-	-	-	-	595	89	684	684	-	-	-	-	-	-	-	-	-	11,786
4e.4.11	Utility Staff Cost	-	-	-	-	-	-	6,496	974	7,470	7,470	-	-	-	-	-	-	-	-	-	95,464
4e.4	Subtotal Period 4e Period-Dependent Costs	-	633	1	1	-	16	10,239	1,685	12,574	12,574	-	-	-	330	-	-	-	6,603	2	107,250
4e.0	TOTAL PERIOD 4e COST	-	633	1	1	-	16	25,190	5,463	31,303	31,303	-	-	-	330	-	-	-	6,603	114,328	110,370
PERIOD 4 TOTALS		4,804	88,187	21,161	22,522	31,366	59,065	105,136	71,753	403,994	398,681	1,064	6,249	379,943	681,529	3,330	480	496	76,628,980	865,634	1,066,257
PERIOD 5b - Site Restoration																					
Period 5b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
5b.1.1.1	Reactor Containment	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	116	-
5b.1.1.2	Aux Feedwater Building	-	54	-	-	-	-	-	8	62	-	-	62	-	-	-	-	-	-	424	-
5b.1.1.3	Buried Fuel Oil Tanks	-	6	-	-	-	-	-	1	6	-	-	6	-	-	-	-	-	-	50	-
5b.1.1.4	Control Building	-	33	-	-	-	-	-	5	38	-	-	38	-	-	-	-	-	-	335	-
5b.1.1.5	Diesel Generator Building	-	172	-	-	-	-	-	26	198	-	-	198	-	-	-	-	-	-	1,688	-
5b.1.1.6	Electrical Penetrations Building	-	194	-	-	-	-	-	29	223	-	-	223	-	-	-	-	-	-	1,487	-
5b.1.1.7	Electrical Tunnel & Retaining Walls	-	63	-	-	-	-	-	9	72	-	-	72	-	-	-	-	-	-	507	-
5b.1.1.8	Equipment Hatch Enclosure	-	43	-	-	-	-	-	6	50	-	-	50	-	-	-	-	-	-	325	-
5b.1.1.9	Fan House	-	220	-	-	-	-	-	33	253	-	-	253	-	-	-	-	-	-	1,656	-
5b.1.1.10	Fuel Storage Building	-	64	-	-	-	-	-	10	74	-	-	74	-	-	-	-	-	-	754	-

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
Demolition of Remaining Site Buildings (continued)																					
5b.1.1.11	Misc Structures	-	2,713	-	-	-	-	-	407	3,119	-	-	3,119	-	-	-	-	-	-	20,703	-
5b.1.1.12	Misc Structures Contaminated	-	639	-	-	-	-	-	96	735	-	-	735	-	-	-	-	-	-	5,160	-
5b.1.1.13	Petroleum Tank Excavation	-	0	-	-	-	-	-	0	0	-	-	0	-	-	-	-	-	-	1	-
5b.1.1.14	Primary Auxiliary Building	-	478	-	-	-	-	-	72	550	-	-	550	-	-	-	-	-	-	3,932	-
5b.1.1.15	Screenwell Structure	-	1,540	-	-	-	-	-	231	1,771	-	-	1,771	-	-	-	-	-	-	9,322	-
5b.1.1.16	Steam Generator Storage Facility	-	841	-	-	-	-	-	126	967	-	-	967	-	-	-	-	-	-	7,527	-
5b.1.1.17	Tank Pads & Foundations	-	195	-	-	-	-	-	29	224	-	-	224	-	-	-	-	-	-	1,814	-
5b.1.1.18	Transformer Pad	-	149	-	-	-	-	-	22	171	-	-	171	-	-	-	-	-	-	1,382	-
5b.1.1.19	Turbine Building	-	1,577	-	-	-	-	-	237	1,814	-	-	1,814	-	-	-	-	-	-	14,818	-
5b.1.1.20	Turbine Pedestal	-	1,298	-	-	-	-	-	195	1,492	-	-	1,492	-	-	-	-	-	-	8,915	-
5b.1.1.21	Waste Holdup Tank Pit	-	100	-	-	-	-	-	15	115	-	-	115	-	-	-	-	-	-	806	-
5b.1.1	Totals	-	10,388	-	-	-	-	-	1,558	11,946	-	-	11,946	-	-	-	-	-	-	81,724	-
Site Closeout Activities																					
5b.1.2	BackFill Site	-	5,897	-	-	-	-	-	885	6,781	-	-	6,781	-	-	-	-	-	-	11,961	-
5b.1.3	Grade & landscape site	-	7	-	-	-	-	-	1	8	-	-	8	-	-	-	-	-	-	27	-
5b.1.4	Final report to NRC	-	-	-	-	-	-	118	18	136	136	-	-	-	-	-	-	-	-	-	1,114
5b.1	Subtotal Period 5b Activity Costs	-	16,292	-	-	-	-	118	2,461	18,871	136	-	18,735	-	-	-	-	-	-	93,713	1,114
Period 5b Additional Costs																					
5b.2.1	Concrete Processing	-	616	-	-	-	-	4	93	713	-	-	713	-	-	-	-	-	-	2,181	-
5b.2.2	ISFSI Demolition and Site Restoration	-	1,649	-	-	-	-	23	251	1,923	-	1,923	-	-	-	-	-	-	-	15,244	80
5b.2.3	Unit 1 Legacy Soil Remediation	-	6,293	571	30,192	-	58,812	-	20,862	116,730	116,730	-	-	-	2,135,394	-	-	-	163,134,000	42,917	-
5b.2	Subtotal Period 5b Additional Costs	-	8,557	571	30,192	-	58,812	27	21,206	119,366	116,730	1,923	713	-	2,135,394	-	-	-	163,134,000	60,342	80
Period 5b Collateral Costs																					
5b.3.1	Small tool allowance	-	277	-	-	-	-	-	42	318	-	-	318	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	277	-	-	-	-	-	42	318	-	-	318	-	-	-	-	-	-	-	-
Period 5b Period-Dependent Costs																					
5b.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	10,422	-	-	-	-	-	1,563	11,986	-	-	11,986	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	1,218	183	1,401	-	-	1,401	-	-	-	-	-	-	-	-
5b.4.5	Site O&M	-	-	-	-	-	-	1,853	278	2,131	2,131	-	-	-	-	-	-	-	-	-	-
5b.4.6	Environmental	-	-	-	-	-	-	1,794	269	2,063	2,063	-	-	-	-	-	-	-	-	-	-
5b.4.7	Corporate A&G	-	-	-	-	-	-	6,729	1,009	7,739	7,739	-	-	-	-	-	-	-	-	-	-
5b.4.8	Security Staff Cost	-	-	-	-	-	-	2,820	423	3,243	-	-	3,243	-	-	-	-	-	-	-	55,427
5b.4.9	Utility Staff Cost	-	-	-	-	-	-	29,583	4,437	34,021	-	-	34,021	-	-	-	-	-	-	-	426,360
5b.4	Subtotal Period 5b Period-Dependent Costs	-	10,422	-	-	-	-	43,999	8,163	62,584	11,933	-	50,651	-	-	-	-	-	-	-	481,787
5b.0	TOTAL PERIOD 5b COST	-	35,548	571	30,192	-	58,812	44,144	31,872	201,139	128,799	1,923	70,417	-	2,135,394	-	-	-	163,134,000	154,055	482,981
PERIOD 5 TOTALS		-	35,548	571	30,192	-	58,812	44,144	31,872	201,139	128,799	1,923	70,417	-	2,135,394	-	-	-	163,134,000	154,055	482,981
TOTAL COST TO DECOMMISSION		10,926	134,186	21,975	53,790	31,366	119,711	597,077	172,834	1,141,864	836,445	227,954	77,465	379,943	2,845,621	3,330	480	496	240,386,100	1,090,315	4,704,341

Table A
Indian Point Nuclear Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(thousands of 2010 dollars)

Activity Index	Activity Description	Decon Cost	Removal Cost	Packaging Costs	Transport Costs	Off-Site Processing Costs	LLRW Disposal Costs	Other Costs	Total Contingency	Total Costs	NRC Lic. Term. Costs	Spent Fuel Management Costs	Site Restoration Costs	Processed Volume Cu. Feet	Burial Volumes: Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet	Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours

TOTAL COST TO DECOMMISSION WITH 17.84% CONTINGENCY:	$1,141,864	thousands of 2010 dollars
TOTAL NRC LICENSE TERMINATION COST IS 73.25% OR:	$836,445	thousands of 2010 dollars
SPENT FUEL MANAGEMENT COST IS 19.96% OR:	$227,954	thousands of 2010 dollars
NON-NUCLEAR DEMOLITION COST IS 6.78% OR:	$77,465	thousands of 2010 dollars
TOTAL LOW-LEVEL RADIOACTIVE WASTE VOLUME BURIED (EXCLUDING GTCC):	2,849,432	cubic feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	496	cubic feet
TOTAL SCRAP METAL REMOVED:	37,254	tons
TOTAL CRAFT LABOR REQUIREMENTS:	1,035,139	man-hours

End Notes:
n/a - indicates that this activity not charged as decommissioning expense.
a - indicates that this activity performed by decommissioning staff.
0 - indicates that this value is less than 0.5 but is non-zero.
a cell containing " - " indicates a zero value