050045-EI

FLORIDA POWER & LIGHT COMPANY

2005 DECOMMISSIONING STUDY

TURKEY POINT NUCLEAR UNIT
NOS. 3 & 4

December 2005

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units

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SECTION 1

EXECUTIVE SUMMARY

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By Order No.PSC-05-0902-S-EI, issued September 14, 2005 in Docket No. 050045-EI, In re: Petition for rate increase by Florida Power & Light Company, the PSC approved a Stipulation and Settlement. Among other things the Stipulation and Settlement suspended FPL's nuclear decommissioning accruals effective September 1, 2005, and at least through the minimum term of the Stipulation and Agreement - January 1, 2006 through December 31, 2009, (Paragraph 11 of Stipulation and Agreement). On page 5 of Order No. PSC-05-0902-S-EI the Commission made the following comment: "Pursuant to Paragraph 11, the parties agree that FPL will file a nuclear decommissioning study on or before December 12, 2005, but the study shall have no impact on FPL's base rates or charges or the terms of the Stipulation and Settlement. The parties clarified that the filing of this study is intended only for informational purposes and that no Commission action on the study is contemplated."

This 2005 Nuclear Decommissioning Study is being made in compliance with Order No. PSC-05-0902-S-EI.

Background Information

By order Nos. 10987 and 12356, entered in Docket No. 810100-EU on July 13, 1982 and August 12, 1983, respectively, the Florida Public Service Commission (FPSC) concluded its investigation concerning the accounting for and recovery of the costs of decommissioning nuclear units. In Docket No. 810100-EU, the FPSC concluded, among other matters, that: decommissioning costs should be accrued in equal annual amounts; decommissioning costs should be accounted for separately; and decommissioning costs should be reviewed and; if necessary, changed no less often than every five years.

By Order No. 21928, entered in Docket No. 870098-EI on September 21, 1989, the FPSC considered the petitions by Florida Power and Light Company (FPL) for an increase in the accrual of nuclear decommissioning costs for the Turkey Point and St. Lucie units. Based upon its decisions regarding decommissioning methodology, the contingency allowance, escalation rates and an assumed fund earnings rate, the FPSC approved an annual accrual and associated jurisdictional revenue requirements for each of FPL's nuclear units. Order No. 21928 also provided that the approved accrual would be subject to subsequent review every five years.

By Order Nos. PSC-95-1531-FOF-EI and PSC-95-1531A-FOF-EI, entered in Docket No. 941350-EI on December 12, 1995 and December 19, 1995 respectively, the FPSC considered the petitions by FPL for an increase in the accrual of nuclear decommissioning costs for the Turkey Point and St. Lucie units. Based upon its decisions regarding decommissioning methodology, including assumptions regarding

extended on-site fuel storage, the contingency allowance, escalation rates and an assumed fund earnings rate, the FPSC approved an annual accrual and funding requirements for each of FPL's nuclear units with an effective date of January 1, 1995.

By Order No. PSC-98-0027-FOF-EI, Docket No. 970410-EI issued January 5, 1998, the FPSC authorized FPL to record additional decommissioning expenses to correct historical reserve deficiencies. In addition, FPL was ordered to file updated nuclear decommissioning studies by October 1, 1998.

On October 1, 1998, in compliance with Order No. PSC-0027-FOF-EI, FPL filed in Docket No. 981246-EI, new decommissioning cost studies prepared by TLG Services Inc. (TLG), and updated funding and accrual analysis as of December 31, 1998. The Company also requested the approval of an annual expense accrual and establishment of an unfunded reserve associated with the estimated End-of-Life M&S Inventory values anticipated to remain at each nuclear site at the end of plant operations.

By Order No. PSC-99-0519-AS-EI issued March 17, 1999 in Docket No. 990067-EI, In Re: Petition for a full revenue requirements rate case for Florida Power & Light Company, the FPSC approved a Stipulation and Settlement (Stipulation). Among other things, the Stipulation terminated the continued amortization and booking of expenses and other cost recognition authorized in Docket No. 970410-EI and capped, for the settlement period ending April 2002, accruals for nuclear decommissioning at the levels last approved by the Commission in Order Nos. PSC-95-1531-FOF-EI and PSC-95-1531A-EI in Docket No. 941350-EI. The schedule (CASR) for Docket No. 981246-EI was subsequently revised and extended into the year 2001 .

By Order No PSC-01-0096-FOF-EI issued January 11, 2001, in Docket No 000543-EI, the Commission adopted Rule 25-6.04365 (Rule), Florida Administrative Code, relating to nuclear decommissioning. The Rule sets forth the information that must be presented in each decommissioning study filed with the Commission and requires each utility to file a site specific nuclear decommissioning study update at lease every five years from the submission date of the previous study unless otherwise required by the Commission

Due to the on-going nature of Docket No. 981246-EI, on January 22, 2001 FPL filed with the Commission updated and revised Decommissioning studies which included changes to reflect:

1. *Actual 2000 fund and reserve balances and actual inflation factors for years 1999 and 2000 applied to the Decommissioning Study prepared in 1998 dollars.*

2. *The most recent available forecasted indexes for calculating escalation and fund earnings used in the studies.*
3. *Updated assumptions regarding extended storage of spent fuel included in the decommissioning cost estimates (Rev. 1 October, 1999).*
4. *An updated estimate of End-of-Life Inventory values.*

By Order No.PSC-02-0055-PAA-EI, issued January 7, 2002 the Commission took action in the following FPL Dockets:

Docket No. 981246-EI

The Commission considered FPL's petition for a change in accrual of nuclear decommissioning costs for the Turkey Point and St. Lucie nuclear units. Based on its review and decisions regarding decommissioning methodology, including assumptions regarding extended on-site spent fuel storage, contingency allowance, escalation rates and fund earnings rate, the FPSC approved an annual accrual and funding requirement for each of FPL's nuclear units with an effective date of May 1, 2002. The Commission also approved the amortization expense associated with End-of-Life (EOL) M&S Inventories to be accounted for as a debit to nuclear maintenance expense and a credit to an unfunded Account 228 reserve. The Commission also stated that the status of EOL M&S inventory should be addressed in subsequent decommissioning studies so that the annual accrual can be revised, if necessary. FPL was ordered to file its next decommissioning cost study update no later than January 1, 2006.

Docket No. 991931-EI

The Commission also approved by Order No. PSC-02-0055-PAA-EI, the amortization of nuclear fuel Last Core costs as a base rate fuel expense with a credit to an unfunded Account 228 reserve. As with EOL M&S inventories the Commission ordered that the Last Core cost be addressed in subsequent decommissioning studies.

Docket No 991931-EI

Additionally, Order No. PSC-02-0055-PAA-EI approved the amortization of approximately $99 million of unfunded accumulated nuclear amortization expense previously recorded with Commission approval over the period January 1 1996 through April 13, 1999. The Commission ordered that the accumulated nuclear amortization balance be transferred to a regulatory liability account to be included

in working capital as a reduction to rate base. Additionally, the Commission ordered the balance of the regulatory asset be amortized over the remaining life (approximately 15 years) of the nuclear units as a credit to Account 407.4 Regulatory Credits. The Commission did not require the balance be addressed in subsequent decommission studies.

The information contained in this 2005 Decommissioning Study is presented in compliance with Rule 25-6.04365 and FPSC prior Orders as discussed above.

Spent Nuclear Fuel Storage

The Nuclear Waste Policy Act of 1982 assigns to the Federal Government responsibility to provide for the permanent disposal of spent nuclear fuel (SNF) and high-level radioactive waste (HLW), and committed the DOE to begin acceptance of SNF/HLW not later than January 31, 1998 under terms of its Standard Disposal Contracts with waste generators. The DOE has not yet provided for SNF storage and is not accepting SNF as committed to under the contract.

In Docket No. 941350-EI, and No. 981246-EI., the FPSC recognized the impact on the decommissioning process and the potential costs of on-site dry fuel storage resulting from the inability of the DOE to provide for the timely removal of SNF. In Order Nos. PSC-95-1531-FOF-EI. and PSC-02-0055-PAA-EI. the FPSC specifically approved the inclusion of costs associated with the dry storage of spent nuclear fuel following the end of each units operating license which were considered necessary to accommodate the timely decommissioning of each unit.

Consistent with the Commission's prior findings, this updated 2005 decommissioning study includes the costs relating to the construction, operation, and dismantlement of an on-site independent spent fuel storage installation (ISFSI) that is required to accommodate the timely decommissioning of the St. Lucie units. The potential cost impact of extended spent fuel storage that will exist subsequent to the license expiration of the St. Lucie nuclear units is presented in the 2005 Decommissioning Cost Analysis for the St. Lucie Plant (Section 12) and further discussed in the "General Discussion" section (Section 2) of this filing.

Decommissioning Cost Analysis

For purposes of this analysis, decommissioning is defined as the activity whereby nuclear facilities are removed safely from service and residual radioactivity is reduced to a level that permits release of the property for unrestricted use and termination of the operating license granted under Title 10 CFR Part 50. Decommissioning also includes

the dismantlement, disposal and site restoration activities associated with the non-contaminated portion of the facilities. These activities are not required for termination of the operating license, but are required to address other non-radiological requirements associated with the release of the site.

The Nuclear Regulatory Commission (NRC) has defined three acceptable decommissioning methods: Prompt Removal/Dismantling (DECON); Safe Storage/Deferred Decontamination (SAFSTOR); and Entombment (ENTOMB). The study utilizes the NRC terminology, but also includes the additional activities required to accommodate the non-contaminated portion of the facilities.

The DECON and SAFSTOR alternatives were both examined and are presented in the (TLG) Decommissioning Cost Analysis section (Section 12) of this filing. The ENTOMB alternative was not considered, because it is considered impractical for a facility which generates significant amounts of long-lived radioactive material due to neutron activation. FPL selected an integrated DECON decommissioning option for St. Lucie Units 1 and 2. Due to the difference in the operating license period of Units 1 and 2, this option entails approximately 7 years of dormancy (SAFSTOR) for Unit 1 followed by prompt dismantlement (DECON) of both Units 1 and 2. This method which is consistent with the integrated dismantlement method last approved by the FPSC in Docket No. 981246-EI, provides not only a lower cost, but also enables a sequence of events, which allows for a one-time mobilization of contractor personnel and equipment.

Funding Method

In Docket No. 810100-EU, Order No. 10987 issued July 13, 1982, the FPSC ordered FPL to establish a funded reserve. Beginning in 1983 FPL began making contributions, on a net of tax basis, to an externally funded reserve. In 1986, the Treasury Department issued temporary regulations under Internal Revenue Code Section 468A relating to the deductibility of contributions made to a qualified decommissioning fund. These regulations, which were finalized in March of 1988, provide for an annual election by the taxpayer to make tax-deductible contributions to a qualified nuclear decommissioning fund. Qualified nuclear decommissioning funds have been established by FPL for each of the four nuclear units. FPL elected to make contributions to the qualified funds, to the maximum allowed, for the years 1984 through 1987, 1992 through 2004 and for the year to date period ended August 31, 2005. The funding analysis presented in Sections G of this study indicates that no additional contributions to the qualified and nonqualified funds (subsequent to September 1, 2005) are projected to be required through the remainder of the funding period that ends with the expiration of the unit's operating license. Only the after-tax earnings of the trust fund investments are assumed to continue to be reinvested and accumulated in the respective funds.

Materials and Supplies Inventories – amortization

The decommissioning cost estimates contained in the TLG Decommissioning Cost Analysis section of this study and in the funding analysis contained in Support Schedule G of this filing do not take into consideration the unrecovered value of any Materials and Supplies Inventories that will ultimately exist at the site following shut down of both units. Both FPL and this Commission have previously recognized that there will be a level of inventories that will remain at the end of life of Unit No. 2, the last unit to reach end of license, that must be recovered prior to the end of site operations. These inventories are unique and will have little value other than scrap value when the units are decommissioned. The Commission approved the amortization of EOL M&S Inventories in Docket No 981246-EI and in Order No PSC-002-0055-PAA-EI required FPL to submit updated information with its next decommissioning study. As such, FPL has included in Support Schedule E of this filing the annual expense accrual associated with updated estimates of End of Life inventory values and an amortization period consistent with the extended operation resulting from license extensions at each nuclear unit. The results of the updated estimates presented in Support Schedule E will be reflected in FPL's accounting for End of Life M&S Inventory effective January 1, 2006.

The annual expense/reserve accruals associated with End of Life Inventories are being accounted for, as directed by the Commission, in a separate (unfunded) sub-account of Reserve Account 228.

Nuclear Fuel Last Core – amortization

FPL recognizes that there will be unburned fuel that will remain in the fuel assemblies at the end of the last operating cycle of each nuclear unit when it ceases operation. In Docket No 981246-EI the Commission found that the cost associated with the Last Core were costs that should be considered a base rate future obligation and that amortization of this obligation over the remaining life span of each nuclear unit ratably allocates the costs to those customers receiving the benefit of the nuclear generation and avoids a burdensome expense at the time of unit shut down. In Order No. PSC-002-0055-PAA-EI the Commission authorized FPL to begin recording the amortization of estimated Last Core costs as a base rate fuel expense with a credit to a separate (unfunded) sub-account of Reserve Account 228. Additionally, the Commission directed the Company to address the costs associated with the Last Core in subsequent decommissioning studies so that the related annual accruals can be revised, if warranted. As such, FPL has included in Support Schedule F of this filing the annual expense accrual based on an updated estimate of end of life unburned nuclear fuel

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Last Core values and an amortization period consistent with the extended operation resulting from license extensions at each nuclear unit. The results of the updated estimates presented in Support Schedule F will be reflected in FPL's accounting for Nuclear Fuel Last Core Values effective January 1, 2006.

The annual expense/reserve accruals associated with End of Life Nuclear Fuel Last Core values are accounted for, as directed by the Commission, in a separate (unfunded) sub-account of Reserve Account 228.

Annual Accrual Requirements

FPL's current annual expense accrual requirements for St Lucie Nuclear Plant Decommissioning costs presented in this study support a zero accrual and funding requirement as of 12/31/05. The major assumptions used in our analysis are summarized at the end of this section. The decommissioning costs estimates, funding analysis, and supporting assumptions presented in this study were prepared in a manner consistent with prior Commission approved studies, methodologies and practices. The annual decommissioning accrual amount of $0.00, supported by this 2005 study confirms the prudence of discontinuing the annual accrual and amount included in cost of service effective September 1, 2005, as approved by this Commission in Order No. PSC-05-0902-S-EI. Listed below for comparative purposes are the current annual expense accrual requirements calculated as of 12/31/05 for Nuclear Decommissioning, End of Life Inventory and Nuclear Fuel Last Core values. Amounts are **jurisdictional** and exclude the participants' ownership interest in St. Lucie Unit No. 2.

	Last Approved Accrual (1)	Annual Accrual Calculated as of 12/31/05(2)	Increase Decrease) in Annual Accrual
Nuclear Decommissioning			
Turkey Point Unit 3	$21,815,173	0	$(21,815,173)
Turkey Point Unit 4	$25,220,424	0	$(25,220,424)
Total	$47,035,597	0	$(47,035,597)
End of Life Inventory Unit 4	$1,747,576	$811,424	$(936,152)
Nuclear Fuel Last Core			
Turkey Point Unit 3	$2,206,683	$1,119,903	$(1,086,780)
Turkey Point Unit 4	$ 945,968	$1,170,300	$ 224,332
Total	$3,152,651	$2,290,203	$(862,448)

(1) As approved in Docket No.981246-*EI*, Order No.PSC-02-0055-PAA-EI. Effective 5/1/02; (2) Effective 1/1/06

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Major Assumptions

Following is a brief summary of the major assumptions used in our analysis. The "Base Case Assumptions Section" of this filing contains additional detail regarding these and other assumptions used.

		Turkey Point Unit No. 3	Turkey Point Unit No. 4
DECOMMISSIONING FUNDS			
A.	Decommissioning Method	DECON (Prompt Removal/ Dismantling)	DECON (Prompt Removal/ Dismantling)
B.	Total Decommissioning Cost Per TLG Services, Inc. (Current cost estimate in 2004 dollars)	$ 432,745,000	$ 559,581,000
C.	FPL's Cost of Decommissioning (Jurisdictional @ 99.5614%)	430,846,980	557,126,678
D.	Method of Funding (2006 - End) (1)	Qualified/ Nonqualified	Qualified/ Nonqualified
E	Funding Periods (Years till license expiration)	26.50	27.25
F	Assumed Fund Earnings Rate	5.0%	5.0%
G	Escalation rate for Decommissioning Costs (2005 - End) Overall Composite Rate	4.5%	4.6%
	Burial Cost Escalation	6.6%	6.6%
H	FPL Ownership Allocation	100%	100%
MATERIALS & SUPPLIES INVENTORIES			
I	Inventory Value at End of Life	N/A	$ 28,617,019
NUCLEAR FUEL LAST CORE VALUES			
J	Value at End of Life	$ 37,900,000	$ 35,500,000

(1) No additional contributions are projected through the end of license. Qualified and Nonqualified Fund earnings (after-tax) are assumed to continue to be reinvested and accumulated in the respective funds.

SECTION 2

GENERAL DISCUSSION

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DECOMMISSIONING ALTERNATIVES

The Nuclear Regulatory Commission's (NRC) "General Requirements for Decommissioning Nuclear Facilities" defines three decommissioning alternatives acceptable to the NRC, i.e., DECON, SAFSTOR and ENTOMB.

DECON is defined by the NRC as "the alternative in which equipment, structures, and the 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."

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." 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." As with the SAFSTOR alternative, decommissioning is currently required to be completed within 60 years.

In 1997, the Commission directed its staff to re-evaluate this alternative and provide it with an analysis of whether or not the staff views entombment as a viable decommissioning option and how this option has been dealt with previously by the Commission. The resulting evaluation provided several recommendations; however, rulemaking has been deferred pending the completion of additional research studies. In 1996, the NRC amended its decommissioning regulations to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in the decommissioning process. Regulatory Guide 1.184 issued in July, 2000, further describes the methods and procedures acceptable to the NRC staff for implementing the requirements of the 1996 amendments relating to the initial activities and major phases of the decommissioning process.

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ALTERNATIVES CONSIDERED IN STUDY

The DECON and SAFSTOR alternatives were examined for the Turkey Point Study. The ENTOMB alternative was not considered, because it is considered impractical for a facility which generates significant amounts of long-lived radioactive material due to neutron activation. Specific attributes of the ENTOMB alternative which make it uneconomical when compared to the DECON and SAFSTOR alternatives are:

- a large up-front expenditure is required to encase the contaminated portion of the facility;
- workers incur greater levels of occupational exposure (compared to SAFSTOR);
- the plant must still be decontaminated and dismantled to complete decommissioning prior to the end of the 60 year period; and
- no significant reductions in low level radioactive waste (LLRW) volumes are achieved due to the 60-year time limitation.

DISMANTLEMENT ALTERNATIVE SELECTED

FPL selected an integrated DECON decommissioning option for Turkey Point Units 3 and 4. This option was selected for two reasons.

1. Prompt dismantlement provides the lowest estimated cost in current dollars.
2. This method results in the lowest estimated revenue requirement.

Additionally, the integrated DECON decommissioning option selected is consistent with integrated dismantling method last approved by the Commission for the Turkey Point Units in Docket No. 981246-EI.

STUDY METHODOLOGY

The TLG study for Turkey Point follows the basic approach originally presented in the Atomic Industrial Forum/National Environmental Studies Project report AIF/NESP-036, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates". The contents of those guidelines were prepared under the review of a task force consisting of representatives from utilities, state regulatory commissions, architect/engineering firms, the Federal Energy Regulatory Commission, the NRC, and the National Association of Regulatory Utility Commissioners. The study also utilizes guidance provided in the Department of Energy (DOE) "Decommissioning Handbook".

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These references utilize a unit cost factor method for estimating decommissioning activity costs to simplify the estimating calculations. Unit cost factors for concrete removal, steel removal and cutting costs were developed from labor and material cost information provided by FPL. With the item quantity developed from plant drawings, inventory documents and equipment databases, the activity-dependent costs are estimated. The unit cost factors used in the study reflect the latest available information about worker productivity in decommissioning projects, including the Shippingport, Pathfinder, Shoreham, Yankee Rowe and Trojan reactors.

The activity duration critical path was used to determine the total decommissioning program schedule. The program schedule is used to determine the period-dependent costs for program management, administration, engineering, equipment rental, quality assurance and security costs.

The activity and period-dependent costs are combined to develop the total decommissioning costs. Contingency factors are then applied to major cost activities to provide for the types of unforeseeable events that are likely to occur in decommissioning.

FUNDING ALTERNATIVES
QUALIFIED vs NONQUALIFIED

Prior to 1989

In Docket No. 810100-EU, Order No. 10987 issued July 13, 1982, the Florida Public Service Commission ordered FPL to establish an internally funded reserve. FPL made net of tax contributions to the fund from 1983 through 1987. In January 1988, FPL made qualified contributions for tax years 1984 through 1986 and funds were transferred from the nonqualified fund to the qualified funds. The qualified contributions for tax year 1987 were made in March 1988. FPL elected to make contributions to qualified decommissioning funds for the tax years 1984 through 1987 since it believed the advantages of a qualified fund outweighed any disadvantages in those years. The reduction in corporate Federal income tax rates effective July 1, 1987 was a major consideration in reaching this conclusion. The decision to make qualified election for these years was reviewed and approved by the Commission in Order No. 21928.

Present Company Treatment - 1989 to Date

Subsequent to 1988 the Company elected to make qualified contributions for the years 1992 through 2004, and for the year-to-date period ended August 31, 2005 has made qualified contributions, to the maximum allowed, for the year 2005. The increase in the

corporate Federal income tax rate effective January 1, 1993 and the introduction of tax legislation which ultimately resulted in the reduction in the Federal income tax rate applicable to the earnings of the qualified funds from the maximum corporate Federal income tax rate to a rate of 22% for 1994 and 1995 and to 20% for years thereafter, were primary considerations which led to the election of qualified contributions for the years subsequent to 1991.

SPENT FUEL-RELATED COSTS

Background and Regulatory Guidance

Nuclear Waste Policy Act of 1982

The Nuclear Waste Policy Act of 1982 (NWPA) assigns to the Federal Government responsibility to provide for the permanent disposal of spent nuclear fuel (SNF) and high-level radioactive waste (HLW), and committed the DOE to begin acceptance of SNF/HLW not later than January 31, 1998 under the terms of its Standard Disposal Contracts with waste generators. The DOE has not yet provided for SNF storage and is not accepting SNF as committed to under the contract.

The generators of waste are expected to bear the cost of disposal. The operators of commercial reactors fund DOE's efforts through the 1.0 mil per kilowatt-hour charge assessed on the electricity generated with nuclear fuel.

Specific Regulations

Three provisions of current regulations affect decommissioning and SNF storage options.

1. Current NRC policy requires removal of all SNF from a facility licensed under Title 10 CFR Part 50 before decommissioning can be accomplished.
2. Title 10 CFR Part 50.54 (bb) requires the licensee, within 2 years following permanent cessation of operation of the reactor or 5 years before expiration of the reactor operating license, whichever occurs first, to submit written notification to the NRC for its review and preliminary approval of the program by which the licensee intends to manage and provide funding for the management of all irradiated fuel at the reactor following permanent cessation of operation of the reactor until title to the irradiated fuel and possession of the fuel is transferred to the Secretary of Energy for its ultimate disposal in a repository. However, the NRC does not currently consider SNF management costs after expiration of the operating license, to be decommissioning costs.

3. Title 10 CFR Part 961, Appendix E requires SNF to be cooled in the spent fuel pools for at least five years before it can be accepted by DOE.

Spent Fuel Damages Claims

FPL, along with a number of electric utilities, sued DOE over DOE's denial of its obligation to accept SNF beginning in 1998. On July 23, 1996, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) held that DOE is required by the Nuclear Waste Policy Act (NWPA) to take title and dispose of SNF from nuclear power plants beginning on January 31, 1998 (Indiana Michigan Power Co. v. Department of Energy). DOE declined to seek further review of the decision, which was remanded to DOE for further proceedings. On December 17, 1996, DOE advised the electric utilities that it would not begin to dispose of SNF by the unconditional deadline.

On November 14, 1997, a panel of the D.C. Circuit found that DOE did not abide by the Court's earlier ruling that the NWPA imposes an unconditional obligation on DOE to begin disposal of spent fuel by January 31, 1998 (Northern States Power Company v. DOE). The Court's order precludes DOE from excusing its own delay on the grounds that it has not yet prepared a permanent repository or interim storage facility. The Court did not grant the other requests for relief. The U.S. Supreme Court denied DOE's request for review of the D.C. Circuit decision.

Based on the Indiana Michigan and Northern States Power Company rulings, in June 1998, FPL filed a lawsuit in the U.S. Court of Federal Claims (CFC) against the United States Government claiming damages arising out the Department of Energy's failure to begin the disposal of spent nuclear fuel (SNF) by the statutory deadline. The FPL claim is currently stayed.

In another SNF case, Indiana Michigan Power Company's (IM) damages claims were tried before another judge on the CFC. The trial judge ruled that IM was not entitled to any damages. On appeal, the U.S. Court of Appeals for the Federal Circuit (Federal Circuit) concluded that IM was not barred per se from recovering pre-breach damages, but affirmed the trial judge because "on these facts" the decision was not infected with legal error. The Federal Circuit also affirmed the trial judge's ruling that future damages are not recoverable, but concluded that the recovery of future incurred costs is permissible in a separate action, provided an action for such costs is brought within six years after such costs are incurred. IM has filed a petition for rehearing with the Federal Circuit. If this decision is upheld, it could have an impact on FPL's spent fuel damages claims.

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Private Fuel Storage, LLC

FPL purchased an interest in Private Fuel Storage, LLC (PFS) in May 2000. PFS is a consortium of eight utilities seeking to license, construct, and operate an independent spent fuel storage installation (ISFSI) in Tooele County, Utah, on the reservation of the Skull Valley Band of the Goshute Indian tribe. On September 9, 2005, the Nuclear Regulatory Commission directed its staff to issue a license to PFS for the interim storage of spent nuclear fuel on the Indian Reservation in Utah. PFS is an alternative to dry storage at an ISFSI at the plant site. FPL has not yet determined to what extent the PFS facility could or would be utilized for the storage of FPL's spent fuel if the facility is successfully constructed.

Spent Fuel Storage Costs Estimated in Decommissioning Study

Decommissioning Study Assumptions

The decommissioning study assumes that FPL will incur additional costs for the storage of SNF.

The spent fuel storage costs and schedule assumptions were developed consistent with prevailing assumptions of experts obtained by FPL to prepare its damage claim against the DOE. The decommissioning cost estimates included in this filing are based on the TLG prepared Decommissioning Cost Study for the Turkey Point Plant, Units 3 and 4 dated October, 2005.

Impact of Delay in DOE's Acceptance of SNF

FPL assumes the following in the delayed SNF acceptance scenario.

- Over the long-term, and particularly after the plant is shut down, dry storage of SNF is more cost effective than wet storage.
- DOE will not supply multipurpose canisters (MPCs) for on-site storage of SNF. The DOE terminated the MPC program in 1996 due to reduced appropriations for the waste program.
- FPL will pay for storage canisters.
- DOE's geologic repository will begin accepting SNF in 2015.
- The geologic repository will accept fuel at the receipt/emplacement rate projected in the "Acceptance Priority Ranking and Annual Capacity Report" (DOE/RW-0567, July

2004). This projection assumes that the repository will reach an annual acceptance rate of 3,000 Metric Tons of Uranium (MTU) in the fifth year of operation.

The Turkey Point decommissioning study assumes that an independent spent fuel storage installation (ISFSI) will be developed under the provisions of Title 10 CFR Part 72 to permit transfer of spent fuel from wet storage to dry storage. The expenditures for the development of the ISFSI are estimated to occur during commercial operation and only a nominal cost for the ISFSI pad expansion is included in the study. Additionally, the study includes separately identified additional costs for the handling and packaging activities as well as the operation of the spent fuel pool during the transfer process. The ISFSI is expected to operate until 2053, when all SNF is expected to be off-site. Ultimately, the ISFSI will be decommissioned and the Part 72 license associated with the facility will be terminated.

The approximate dates for loss of full core reserve (LOFCR) using installed storage systems are as follows:

Unit 3: 2010
Unit 4: 2012

SNF Impact on Decommissioning Schedule and Cost

The movement of the SNF to an ISFSI permits the termination of the Title 10 CFR Part 50 licenses as soon as possible after the shut down of both units. However, the completion of decommissioning for the entire site is delayed until 2053. The impacts of delayed acceptance of SNF by DOE on decommissioning costs are as follows:

1. ISFSI operation costs are incurred after the shut down of Unit 4 from 2033 through 2053.
2. ISFSI dismantlement and disposal costs are incurred.

OTHER ISSUES

License Renewal

On June 6, 2002, the NRC approved the license extension application of Turkey Point Units 3 and 4. This extension grants the authority for FPL to operate an additional 20 years. The current operating licenses will expire for Units 3 and 4 in July 2032 and April 2033, respectively. The study assumes Turkey Point will operate through the extended license period.

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Materials and Supplies Inventories

The decommissioning cost estimates contained in the TLG Decommissioning Cost Analysis section of this study and in the funding analysis contained in Support Schedule G of this filing do not take into consideration the unrecovered value of any Materials and Supplies Inventories that will ultimately exist at the site following shut down of both units. Both FPL and this Commission have previously recognized that there will be a level of inventories that will remain at the end of life of Unit No. 4, the last unit to reach end of license, that must be recovered prior to the end of site operations. These inventories are unique and will have little value other that scrap value when the units are decommissioned. The Commission approved the amortization of EOL M&S Inventories in Docket No 981246-EI and in Order No PSC-002-0055-PAA-EI required FPL to submit updated information with its next decommissioning study. As such, FPL has included in Support Schedule E of this filing the annual expense accrual associated with updated estimates of End of Life inventory values and an amortization period consistent with the extended operation resulting from license extensions at each nuclear unit. The results of the updated estimates presented in Support Schedule E will be reflected in FPL's accounting for End of Life Materials and Supplies Inventories effective January 1, 2006.

The annual expense/reserve accruals associated with End of Life Inventories are being accounted for, as directed by the Commission, in a separate (unfunded) sub-account of Reserve Account 228.

Nuclear Fuel Last Core – amortization

FPL recognizes that there will be unburned fuel that will remain in the fuel assemblies at the end of the last operating cycle of each nuclear unit when it ceases operation. In Docket No 981246-EI the Commission found that the cost associated with the Last Core were costs that should be considered a base rate future obligation and that amortization of this obligation over the remaining life span of each nuclear unit ratably allocates the costs to those customers receiving the benefit of the nuclear generation and avoids a burdensome expense at the time of unit shut down. In Order No. PSC-002-0055-PAA-EI the Commission authorized FPL to begin recording the amortization of estimated Last Core costs as a base rate fuel expense with a credit to a separate (unfunded) sub-account of Reserve Account 228. Additionally, the Commission directed the Company to address the costs associated with the Last Core in subsequent decommissioning studies so that the related annual accruals can be revised, if warranted. As such, FPL has included in Support Schedule F of this filing the annual

expense accrual based on an updated estimate of end of life unburned nuclear fuel Last Core values and an amortization period consistent with the extended operation resulting from license extensions at each nuclear unit. The results of the updated estimates presented in Support Schedule F will be reflected in FPL's accounting for End of Life Nuclear Fuel Last Core Values effective January 1, 2006.

The annual expense/reserve accruals associated with End of Life Nuclear Fuel Last Core values are accounted for, as directed by the Commission, in a separate (unfunded) sub-account of Reserve Account 228.

SECTION 3

BASE CASE ASSUMPTIONS

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

Following is a summary of the assumptions used to derive the annual accrual, and annual funding and revenue requirement amounts sought by FPL. These assumptions are more fully developed on the following pages.

1. Base Case Assumptions Summary	Unit No.3	Unit No. 4
A. Decommissioning Method	DECON (Prompt Removal/ Dismantling)	DECON(Prompt Removal/ Dismantling)
B. Total Decommissioning Cost Per TLG Services, Inc. (Current Cost estimate in 2004 dollars)	$432,745,000	$559,581,000
C. Total Decommissioning Cost Jurisdictional at 99.5614%	$430,846,980	$557,126,678
D. Method of Funding (2006-End)	Qualified/ Nonqualified	Qualified/ Nonqualified
E. Funding Periods (Years till License Expiration)	26.5	27.25
F. Assumed Fund Earnings Rate	5.0%	5.0%
G. Escalation Rate for Decommissioning Costs (2005-End)	4.5%	4.6%
H. FPL Ownership Allocation %	100%	100%
I. FPSC Jurisdictional Separation Factor	99.5614%	99.5614%
J. Est./Actual Fund Balance - Qualified (12/31/05)	$ 282,988,000	$ 330,654,000
K. Est./Actual Fund Balance - Nonqualified (12/31/05)	$ 123,054,000	$ 132,240,000
L. End of Life M&S Inventory Value	N/A	$ 28,617,019
M. End of Life Nuclear Fuel Last Core Values	$ 37,900,000	$ 35,500,000

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

2. Decommissioning Costs

Below are the estimated costs of Decommissioning the Turkey Point facility as provided by TLG in 2004 dollars:

Turkey Point Unit No. 3		
Labor	$	246,796,000
Materials		56,814,000
Shipping		10,705,000
Burial		57,234,000
Other		61,196,000
Total	$	432,745,000
Turkey Point Unit No. 4		
Labor	$	312,754,000
Materials		85,373,000
Shipping		17,644,000
Burial		83,533,000
Other		60,277,000
Total	$	559,581,000

3. Funding Method

For the projected period subsequent to 2005, it is assumed that no additional accruals or contributions will be required. Only the after-tax earnings of the qualified and nonqualified fund investments will continue to accumulate in their respective funds through the end of the projected decommissioning period. Future decommissioning expenditures are assumed to be distributed from the qualified and nonqualified funds in proportion to the balance accumulated at the time of expenditure

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

4. Funding Period

The funding period, to the extent funding is required, is that period over which revenues are collected from ratepayers for purposes of decommissioning the Turkey Point Units.

The funding period over which the new funding and revenue requirement figures are computed for Turkey Point No. 3 and No. 4 is assumed to begin in 2006.

Funding periods for both units will end on the last day of the month proceeding the month in which the operating license for the unit is due to expire. License expiration dates for the Turkey Point units are as follows.

- Turkey Point Unit No. 3 - July 19, 2032
- Turkey Point Unit No. 4 - April 10, 2033

Based on the results of the funding analysis presented in Support Schedule G (Section 10), no additional funding is required subsequent to 2005.

5. Fund Earnings Rate

In Order No. PSC-02-0055-PAA-EI, Docket No. 981246-EI the Commission found the appropriate fund earnings rate, net of taxes and all other administrative costs charged to the trust fund, to be 4.70%. This rate represented the long term average CPI rate of change as forecasted by GlobalInsight for the period over which the funds will be invested, plus an additional 1.10 basis points (3.60% + 1.10%).

For purposes of this 2005 study update the projected annual funds earnings rate, net of taxes and all other administrative costs charged to the trust funds, for Units 3 and 4 qualified and nonqualified fund investments, is assumed to be 5.0%. This assumption is based on a projected real long-term, after tax and net of fees, earnings rate of 2.40% plus an assumed inflation rate of 2.60%. The long-term, after tax and net of fees earnings rate reflects the current investment strategy, modified for the final five years of decommissioning (the 5 years ending 2054 for the Turkey Point Units & ending 2061 for the St Lucie Units) to reflect a more conservative all bonds & cash asset mix. FPL recognizes that over the long-term period there will likely be periods when the earned return may be greater or less than the assumed 5.00%. Consistent with prior Commission practice and Rule 25-6.04365 (FAC) the assumptions presented in this 2005

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

study will be reviewed and updated as appropriate "at least once every five years".

The annual rates of change in CPI were taken from "The U. S. Economy, The 30 – Year Focus, Third – Quarter 2005", published by GlobalInsight.

6. Escalation Rate

The annual escalation rates used to estimate total future dismantlement costs from January 1, 2005 through the final year of decommissioning are as follows:

	Average Annual Escalation Rate
Turkey Point Unit No. 3	4.5%
Turkey Point Unit No. 4	4.6%

The above rates were derived by applying separate inflation indices to each of the major cost components of Labor, Materials and Equipment, Shipping, Burial, and Other.

Cost Component	Inflation Index
Labor	Compensation per Hour
Materials and Equip.	PPI – Intermediate Materials, Supplies, and Components
Shipping	GDP Deflator-Transportation
Burial	FPL Analysis & CPI
Other	GDP (Implicit)

Burial costs for the years 2005 through the end of the decommissioning period are assumed to increase at a rate similar to general inflation, adjusted for variability historically exhibited by LLRW disposal costs. For purposes of this 2005 study update an average annual rate of 6.6% was used. This annual rate is equivalent to the forecasted Long -Term change in CPI + 4.00%.The rate of increase in LLRW burial cannot be predicted with exact certainty, however, the resulting annual increase is considered reasonable and approximates the increase experienced

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

since FPL's last decommissioning cost study (Revised October 1999)
For a more detail calculation of the overall weighted average Escalation rate and annual rate of change for each component please refer to Support Schedule G ("Inflation and Funding Analysis") on pages 1 through 3.

7. FPL Ownership Share of Nuclear Units

FPL has 100% ownership interest in the Turkey Point facility.

8. FPSC Jurisdictional Factor

The factor applicable to both units is 99.5614 %.

9. Fund Balances

Estimated/actual fund balances (qualified and nonqualified) at December 31, 2005 for each of the two Turkey Point Units are as Follows:

		$(000)
	Qualified	Nonqualified
Unit No. 3	$ 282,988	$ 123,054
Unit No. 4	$ 330,654	$ 132,240

See support Schedule C ("Projected Fund and Reserve Balances") for a detail composition of the qualified and nonqualified fund balances.

10. End of Life Materials and Supplies Inventory Values

The Materials and Supplies inventory balance, less estimated salvage, that is estimated to remain at the end of life of Unit No. 4, the last unit to reach end of license, is projected to be $28,617,019. The actual balance accrued as of 12/31/05 is $6,408,292.

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Base Case Assumptions

See Support Schedule E ("End-of-Life Materials and Supplies Inventory) for annual expense accrual calculations based on an amortization period consistent with the extended operations resulting from the 20 year license extension for each unit. This information is presented in compliance with Order No. PSC-02-0055-PAA-EI., wherein the Commission directed FPL to address the amortization status of End of Life M&S Inventories in subsequent decommissioning studies so that the related annual accrual can be revised, if necessary. The results of the updated estimates presented in Support Schedule E will be reflected in FPL's accounting for End of Life Materials and Supplies Inventory effective January 1, 2006.

11. End of Life Last Core Nuclear Fuel Values

The estimated cost of unburned fuel remaining in the reactor at the end of life (end of license) for each unit is:

- Unit No. 3 $37,900,000
- Unit No. 4 $35,500,000

The actual balances accrued as of 12/31/05 are:

- Unit No. 3 $8,091,820
- Unit No. 4 $3,468,828

See Support Schedule F ("End-of-Life Unamortized Nuclear Fuel Expense Accrual) for annual expense accrual calculations based on an amortization period consistent with the extended operations resulting from the 20 year license extension for each unit. This information is presented in compliance with Order No. PSC-02-0055-PAA-EI., wherein the Commission directed FPL to address the costs associated with the last core in subsequent decommissioning studies so that the related annual accrual can be revised, if warranted. The results of the updated estimates presented in Support Schedule F will be reflected in FPL's accounting for End of Life Last Core Nuclear Fuel Values effective January 1, 2006.

SECTION 4

SUPPORT SCHEDULE A
Nuclear Decommissioning Reserve Balance
December 31, 2000 through October 31, 2005

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Reserve Balances (1)
December 31, 2000 through October 31, 2005
$000

December 31, 2001	Beginning Balance	Revenues Collected	Earnings to Reserve	Ending Balance
NONQUALIFIED				
Turkey Point Unit No. 3	136,681	2,812	7,579	147,072
Turkey Point Unit No. 4	148,112	3,504	8,158	159,774
St. Lucie Unit No. 1	130,099	1,883	6,948	138,929
St. Lucie Unit No. 2	72,752	0	3,632	76,384
TOTAL	487,644	8,199	26,317	522,159
QUALIFIED				
Turkey Point Unit No. 3	174,579	15,144	8,257	197,980
Turkey Point Unit No. 4	200,358	19,224	9,197	228,778
St. Lucie Unit No. 1	237,529	22,540	11,279	271,347
St. Lucie Unit No. 2	212,764	19,546	9,952	242,263
TOTAL	825,230	76,454	38,685	940,368
TOTAL RESERVES				
Turkey Point Unit No. 3	311,260	17,956	15,836	345,052
Turkey Point Unit No. 4	348,470	22,728	17,355	388,552
St. Lucie Unit No. 1	367,628	24,423	18,227	410,276
St. Lucie Unit No. 2	285,516	19,546	13,584	318,647
TOTAL	1,312,874	84,653	65,002	1,462,527
December 31, 2002				
NONQUALIFIED				
Turkey Point Unit No. 3	147,072	6,424	6,071	159,567
Turkey Point Unit No. 4	159,774	7,195	6,554	173,523
St. Lucie Unit No. 1	138,929	4,592	5,665	149,186
St. Lucie Unit No. 2	76,384	49	2,908	79,341
TOTAL	522,159	18,260	21,198	561,617
QUALIFIED				
Turkey Point Unit No. 3	197,980	14,106	8,770	220,856
Turkey Point Unit No. 4	228,778	17,195	9,949	255,922
St. Lucie Unit No. 1	271,347	16,006	11,723	299,076
St. Lucie Unit No. 2	242,263	14,999	10,626	267,888
TOTAL	940,368	62,306	41,068	1,043,742
TOTAL RESERVES				
Turkey Point Unit No. 3	345,052	20,530	14,841	380,423
Turkey Point Unit No. 4	388,552	24,390	16,503	429,446
St. Lucie Unit No. 1	410,276	20,598	17,388	448,262
St. Lucie Unit No. 2	318,647	15,048	13,534	347,228
TOTAL	1,462,527	80,566	62,266	1,605,359

(1) Balances exclude unrealized market gains/losses.

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Reserve Balances (1)
December 31, 2000 through October 31, 2005
$000

December 31, 2003	Beginning Balance	Revenues Collected	Earnings to Reserve	Ending Balance
NONQUALIFIED				
Turkey Point Unit No. 3	159,567	8,841	7,332	175,740
Turkey Point Unit No. 4	173,523	8,051	7,921	189,496
St. Lucie Unit No. 1	149,186	5,575	6,802	161,564
St. Lucie Unit No. 2	79,341	1	3,561	82,903
TOTAL	561,617	22,468	25,616	609,703
QUALIFIED				
Turkey Point Unit No. 3	220,856	12,976	6,336	240,168
Turkey Point Unit No. 4	255,922	17,171	7,447	280,541
St. Lucie Unit No. 1	299,076	13,110	8,746	320,932
St. Lucie Unit No. 2	267,888	12,798	7,921	288,606
TOTAL	1,043,742	56,055	30,450	1,130,246
TOTAL RESERVES				
Turkey Point Unit No. 3	380,423	21,817	13,668	415,908
Turkey Point Unit No. 4	429,446	25,222	15,368	470,037
St. Lucie Unit No. 1	448,262	18,685	15,548	482,496
St. Lucie Unit No. 2	347,228	12,799	11,482	371,509
TOTAL	1,605,359	78,523	56,066	1,739,949
December 31, 2004				
NONQUALIFIED				
Turkey Point Unit No. 3	175,740	8,568	6,609	190,917
Turkey Point Unit No. 4	189,496	8,409	7,117	205,022
St. Lucie Unit No. 1	161,564	5,693	6,072	173,329
St. Lucie Unit No. 2	82,903	1	3,114	86,018
TOTAL	609,703	22,671	22,912	655,286
QUALIFIED				
Turkey Point Unit No. 3	240,168	13,249	7,207	260,624
Turkey Point Unit No. 4	280,541	16,814	8,202	305,557
St. Lucie Unit No. 1	320,932	12,992	9,424	343,347
St. Lucie Unit No. 2	288,606	12,797	8,553	309,957
TOTAL	1,130,246	55,852	33,386	1,219,485
TOTAL RESERVES				
Turkey Point Unit No. 3	415,908	21,817	13,816	451,541
Turkey Point Unit No. 4	470,037	25,223	15,319	510,579
St. Lucie Unit No. 1	482,496	18,685	15,496	516,676
St. Lucie Unit No. 2	371,509	12,798	11,667	395,974
TOTAL	1,739,949	78,523	56,298	1,874,771

(1) Balances exclude unrealized market gains/losses.

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Reserve Balances (1)
December 31, 2000 through October 31, 2005
$000

October 31, 2005	Beginning Balance	Revenues Collected	Earnings to Reserve	Ending Balance
NONQUALIFIED				
Turkey Point Unit No. 3	190,917	1,818	5,971	198,706
Turkey Point Unit No. 4	205,022	2,102	6,416	213,539
St. Lucie Unit No. 1	173,329	1,557	5,428	180,314
St. Lucie Unit No. 2	86,018	1,067	2,703	89,787
TOTAL	655,286	6,544	20,518	682,347
QUALIFIED				
Turkey Point Unit No. 3	260,624	12,727	7,340	280,691
Turkey Point Unit No. 4	305,557	14,713	7,700	327,970
St. Lucie Unit No. 1	343,347	10,900	8,800	363,047
St. Lucie Unit No. 2	309,957	7,466	8,032	325,455
TOTAL	1,219,485	45,806	31,872	1,297,162
TOTAL RESERVES				
Turkey Point Unit No. 3	451,541	14,545	13,311	479,397
Turkey Point Unit No. 4	510,579	16,815	14,116	541,510
St. Lucie Unit No. 1	516,676	12,457	14,228	543,361
St. Lucie Unit No. 2	395,974	8,533	10,735	415,242
TOTAL	1,874,771	52,350	52,390	1,979,509

(1) Balances exclude unrealized market gains/losses.

SECTION 5

SUPPORT SCHEDULE B
Nuclear Decommissioning Fund Balance
December 31, 2000 through October 31, 2005

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Fund Balances (1)
December 31, 2000 through October 31, 2005
$000

	Beginning Balance	Contribution	Fund Earnings	Ending Balance
December 31, 2001				
NONQUALIFIED				
Turkey Point Unit No. 3	83,956	1,728	4,655	90,339
Turkey Point Unit No. 4	90,978	2,152	5,011	98,141
St Lucie Unit No. 1	79,913	1,156	4,268	85,337
St Lucie Unit No. 2	44,688	0	2,231	46,919
Total	299,535	5,036	16,165	320,736
QUALIFIED				
Turkey Point Unit No. 3	174,579	15,144	8,257	197,980
Turkey Point Unit No. 4	200,358	19,224	9,197	228,778
St Lucie Unit No. 1	237,529	22,540	11,279	271,347
St Lucie Unit No. 2	212,764	19,546	9,952	242,263
Total	825,230	76,454	38,685	940,368
TOTAL				
Turkey Point Unit No. 3	258,535	16,872	12,912	288,319
Turkey Point Unit No. 4	291,336	21,376	14,208	326,919
St Lucie Unit No. 1	317,442	23,696	15,547	356,685
St Lucie Unit No. 2	257,452	19,546	12,183	289,182
Total	1,124,765	81,490	54,850	1,261,104
December 31, 2002				
NONQUALIFIED				
Turkey Point Unit No. 3	90,339	3,946	3,729	98,014
Turkey Point Unit No. 4	98,141	4,420	4,026	106,587
St Lucie Unit No. 1	85,337	2,821	3,480	91,638
St Lucie Unit No. 2	46,919	30	1,786	48,735
Total	320,736	11,217	13,021	344,973
QUALIFIED				
Turkey Point Unit No. 3	197,980	14,106	8,770	220,856
Turkey Point Unit No. 4	228,778	17,195	9,949	255,922
St Lucie Unit No. 1	271,347	16,006	11,723	299,076
St Lucie Unit No. 2	242,263	14,999	10,626	267,888
Total	940,368	62,306	41,068	1,043,742
TOTAL				
Turkey Point Unit No. 3	288,319	18,052	12,499	318,870
Turkey Point Unit No. 4	326,919	21,615	13,975	362,509
St Lucie Unit No. 1	356,685	18,827	15,203	390,713
St Lucie Unit No. 2	289,182	15,029	12,412	316,623
Total	1,261,104	73,523	54,089	1,388,715

(1) Balances exclude unrealized market gains/losses.

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Fund Balances (1)
December 31, 2000 through October 31, 2005
$000

	Beginning Balance	Contribution	Fund Earnings	Ending Balance
December 31, 2003				
NONQUALIFIED				
Turkey Point Unit No. 3	98,014	5,430	4,504	107,948
Turkey Point Unit No. 4	106,587	4,945	4,866	116,398
St Lucie Unit No. 1	91,638	3,425	4,178	99,241
St Lucie Unit No. 2	48,735	1	2,187	50,923
Total	344,973	13,801	15,735	374,510
QUALIFIED				
Turkey Point Unit No. 3	220,856	12,976	6,336	240,168
Turkey Point Unit No. 4	255,922	17,171	7,447	280,541
St Lucie Unit No. 1	299,076	13,110	8,746	320,932
St Lucie Unit No. 2	267,888	12,798	7,921	288,606
Total	1,043,742	56,055	30,450	1,130,246
TOTAL				
Turkey Point Unit No. 3	318,870	18,406	10,840	348,116
Turkey Point Unit No. 4	362,509	22,116	12,313	396,939
St Lucie Unit No. 1	390,713	16,535	12,924	420,172
St Lucie Unit No. 2	316,623	12,799	10,108	339,529
Total	1,388,715	69,856	46,185	1,504,756
December 31, 2004				
NONQUALIFIED				
Turkey Point Unit No. 3	107,948	5,263	4,060	117,271
Turkey Point Unit No. 4	116,398	5,165	4,372	125,935
St Lucie Unit No. 1	99,241	3,497	3,730	106,467
St Lucie Unit No. 2	50,923	1	1,913	52,837
Total	374,510	13,926	14,075	402,509
QUALIFIED				
Turkey Point Unit No. 3	240,168	13,249	7,207	260,624
Turkey Point Unit No. 4	280,541	16,814	8,202	305,557
St Lucie Unit No. 1	320,932	12,992	9,424	343,347
St Lucie Unit No. 2	288,606	12,798	8,553	309,957
Total	1,130,246	55,853	33,386	1,219,485
TOTAL				
Turkey Point Unit No. 3	348,116	18,512	11,267	377,895
Turkey Point Unit No. 4	396,939	21,979	12,574	431,491
St Lucie Unit No. 1	420,172	16,489	13,154	449,815
St Lucie Unit No. 2	339,529	12,799	10,466	362,793
Total	1,504,756	69,779	47,461	1,621,994

(1) Balances exclude unrealized market gains/losses.

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Nuclear Decommissioning Fund Balances (1)
December 31, 2000 through October 31, 2005
$000

October 31, 2005	Beginning Balance	Contribution	Fund Earnings	Ending Balance
NONQUALIFIED				
Turkey Point Unit No. 3	117,271	1,117	3,668	122,055
Turkey Point Unit No. 4	125,935	1,291	3,941	131,167
St Lucie Unit No. 1	106,467	956	3,334	110,758
St Lucie Unit No. 2	52,837	655	1,660	55,152
Total	402,509	4,019	12,603	419,132
QUALIFIED				
Turkey Point Unit No. 3	260,624	12,727	7,340	280,691
Turkey Point Unit No. 4	305,557	14,713	7,700	327,970
St Lucie Unit No. 1	343,347	10,900	8,800	363,047
St Lucie Unit No. 2	309,957	7,466	8,032	325,455
Total	1,219,485	45,806	31,872	1,297,162
TOTAL				
Turkey Point Unit No. 3	377,895	13,844	11,008	402,746
Turkey Point Unit No. 4	431,491	16,004	11,641	459,137
St Lucie Unit No. 1	449,815	11,856	12,134	473,805
St Lucie Unit No. 2	362,793	8,121	9,692	380,606
Total	1,621,994	49,825	44,475	1,716,294

(1) Balances exclude unrealized market gains/losses.

SECTION 6

SUPPORT SCHEDULE C
Projected Fund and Reserve Balance
at December 31, 2005

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Projected Fund and Reserve Balance at December 31, 2005 [a]
$000

	TURKEY POINT UNIT 3	TURKEY POINT UNIT 4	ST. LUCIE UNIT 1	ST. LUCIE UNIT 2 (Note 1)	TOTALS
NON-QUALIFIED FUND					
Actual Fund Balance @10/31/05	122,055	131,167	110,758	55,152	419,132
Add: Estimate Income Nov. - Dec. 2005 (after-tax)	999	1,073	906	451	3,429
Est/Actual Fund Balance @ 12/31/05	123,054	132,240	111,664	55,603	422,561
QUALIFIED FUND					
Actual Fund Balance @10/31/05	280,691	327,970	363,047	325,455	1,297,162
Add: Estimate Income Nov. - Dec. 2005 (after-tax)	2,297	2,684	2,971	2,663	10,615
Est/Actual Fund Balance @ 12/31/05	282,988	330,654	366,018	328,118	1,307,778
TOTAL FUND					
Actual Fund Balance @10/31/05	402,746	459,137	473,805	380,606	1,716,294
Add: Estimate Income Nov. - Dec. 2005 (after-tax)	3,296	3,757	3,877	3,114	14,044
Est/Actual Fund Balance @ 12/31/05	406,042	462,894	477,682	383,720	1,730,338
NON-QUALIFIED RESERVE					
Actual Reserve Balance@10/31/05	198,706	213,539	180,314	89,787	682,347
Add: Estimate Income Nov. - Dec. 2005	1,626	1,747	1,475	734	5,582
Est/Actual Reserve Balance@12/31/05	200,332	215,286	181,789	90,521	687,928
QUALIFIED RESERVE					
Actual Reserve Balance@10/31/05	280,691	327,970	363,047	325,455	1,297,162
Add: Estimate Income Nov. - Dec. 2005	2,297	2,684	2,971	2,663	10,615
Est/Actual Reserve Balance@12/31/05	282,988	330,654	366,018	328,118	1,307,778
TOTAL RESERVE					
Actual Reserve Balance@10/31/05	479,397	541,510	543,361	415,242	1,979,509
Add: Estimate Income Nov. - Dec. 2005	3,923	4,431	4,446	3,397	16,197
Est/Actual Reserve Balance@12/31/05	483,320	545,941	547,807	418,639	1,995,706

(a) Balances exclude unrealized market gains/losses.

Note (1): Amounts for St Lucie Common are included with Unit No. 2

SECTION 7

SUPPORT SCHEDULE D
Reconciliation of Projected Fund and Reserve Balance at December 31, 2005

Florida Power & Light Company
2005 Decommissioning Study
Support Schedule: Reconciliation of Projected Fund and Reserve Balance at December 31, 2005[a]
$000

RECONCILIATION FUND/RESERVE
Projected 12/31/05

	TURKEY POINT UNIT 3	TURKEY POINT UNIT 4	ST. LUCIE UNIT 1	ST. LUCIE UNIT 2 (Note 1)	TOTALS
NON-QUALIFIED					
Projected Fund Balance @12/31/05	123,054	132,240	111,664	55,603	422,561
Deferred Tax @ 12/31/05	77,278	83,046	70,125	34,918	265,367
Projected Reserve Balance @ 12/31/05	200,332	215,286	181,789	90,521	687,928
QUALIFIED					
Projected Fund Balance @12/31/05	282,988	330,654	366,018	328,118	1,307,778
Deferred Tax @ 12/31/05	0	0	0	0	0
Projected Reserve Balance @ 12/31/05	282,988	330,654	366,018	328,118	1,307,778
TOTAL					
Projected Fund Balance @12/31/05	406,042	462,894	477,682	383,720	1,730,338
Deferred Tax @ 12/31/05	77,278	83,046	70,125	34,918	265,367
Projected Reserve Balance @ 12/31/05	483,320	545,940	547,807	418,638	1,995,705

DEFERRED TAXES
Projected balance @ 12/31/05

NON-QUALIFIED FUND					
Balance @ 10/31/05 (Fed & State)	76,651	82,373	69,556	34,635	263,215
Add: Tax on Earnings Nov. - December	627	673	569	283	2,152
Balance @ 12/31/05 (Fed & State)	77,278	83,046	70,125	34,918	265,367

(a) Balances exclude unrealized market gains/losses.

Note (1): Amounts for St Lucie Common are included with Unit No. 2

SECTION 8

SUPPORT SCHEDULE E
End-of-Life Materials and Supplies Inventory
Expense Accrual Calculation

Florida Power and Light Company
2005 Decommissioning Study
Support Schedule: End-of-Life Materials and Supplies Inventory
Expense Accrual Calculation

Line Number		Turkey Point Unit 4
1	Adjusted Ending Inventory Value @ End of License	$ 28,982,195
2	Estimated Salvage	(365,176)
3	**Inventory Subject to Write-off**	**$ 28,617,019**
4		
5	**FPL's Ownership Share 100%**	**$ 28,617,019**
6		
7	Estimated/Actual Reserve Balance Accrued as of 12/31/05	6,408,292
8		
9	**Remaining Amount to be Recovered as of 12/31/05**	**$ 22,208,727**
10		
11		
12	Total Number of Months From:	
13	12/31/05 to End of License	327
14		
15	**Required Accrual From 1/1/06 to End of License**	
16	Monthly	$ 67,917
17	Annual	$ 814,999
18		
19	**Current Accrual Effective 05/01/02**	
20	Monthly	$ 145,643
21	Annual	$ 1,747,716
22		
23	**Increase (Decrease) Required as of 1/1/06**	
24	**Monthly**	$ (77,726)
25	**Annual**	$ (932,717)
26		
27		
28	(1) The Participants' obligation is assumed to be treated the same as "Common Facility Cost"	
29	which is calculated at one-half their ownership percentage. (0.5 * 14.89551% = 7.447755%)	
30	Therefore, FPL's ownership share is 92.552245%.	
31	(2) The results of this updated estimate will be reflected in FPL's accounting for End of Life	
32	Mateial & Supplies Inventory effective January 1, 2006.	

SECTION 9

SUPPORT SCHEDULE F
End-of-Life Unamortized Nuclear Fuel
Expense Accrual Calculation

Florida Power and Light Company
2005 Decommissioning Study
Support Schedule: End-of-Life Unamortized Nuclear Fuel
Expense Accrual Calculation

Line Number		Turkey Point Unit 3	Turkey Point Unit 4
1	**Estimated Cost of Unburned Fuel @ End of License**	$ 37,900,000	$ 35,500,000
2			
3			
4			
5	**FPL's Ownership Share (100%)**	**$ 37,900,000**	**$ 35,500,000**
6			
7	Estimated/Actual Reserve Balance Accrued as of 12/31/05	8,091,820	3,468,828
8			
9	**Remaining Amount to be Recovered as of 12/31/05**	**$ 29,808,180**	**$ 32,031,172**
10			
11			
12	Total Number of Months From:		
13	**12/31/05 to End of License**	318	327
14			
15	**Required Accrual From 1/1/06 to End of License (1)**		
16	Monthly	$ 93,736	$ 97,955
17	Annual	$ 1,124,837	$ 1,175,456
18			
19	**Current Accrual Effective 05/01/02**		
20	Monthly	$ 183,905	$ 78,837
21	Annual	$ 2,206,860	$ 946,044
22			
23	**Increase (Decrease) Required as of 1/1/06**		
24	**Monthly**	**$ (90,169)**	**$ 19,118**
25	**Annual**	**$ (1,082,023)**	**$ 229,412**
26			
27			
28			
29			
30	(1) The results of the updated estimates will be reflected in FPL's accounting for End of Life		
31	Nuclear Fuel Last Core values effective January 1, 2006.		

SECTION 10

SUPPORT SCHEDULE G
Inflation and Funding Analysis

INFLATION FORECAST

The U.S. Economy
The 30 - Year Focus Third Quarter 2005
GLOBAL INSIGHT

YEAR	GDP	HRLY COMP	PPI INT M&S	GDP Transport	Burial	CPI	CPI MULTIPLIER
2004	**2.6%**	**4.8%**	**6.6%**	**2.2%**	6.6%	**2.7%**	**1.000**
2005	2.5%	5.7%	6.6%	3.2%	6.6%	3.1%	1.031
2006	2.1%	3.9%	1.0%	3.3%	6.6%	2.2%	1.054
2007	2.0%	4.1%	-1.8%	2.6%	6.6%	1.7%	1.072
2008	2.1%	4.3%	-1.0%	2.6%	6.6%	1.9%	1.092
2009	2.1%	4.4%	-0.4%	2.6%	6.6%	2.1%	1.115
2010	2.2%	4.4%	0.0%	2.7%	6.6%	2.2%	1.139
2011	2.4%	4.5%	0.9%	3.0%	6.6%	2.6%	1.169
2012	2.5%	4.5%	1.1%	3.0%	6.6%	2.7%	1.201
2013	2.5%	4.4%	1.0%	2.9%	6.6%	2.7%	1.233
2014	2.4%	4.3%	0.9%	2.9%	6.6%	2.6%	1.265
2015	2.4%	4.4%	0.8%	3.0%	6.6%	2.6%	1.298
2016	2.5%	4.6%	0.9%	3.0%	6.6%	2.7%	1.333
2017	2.5%	4.7%	0.9%	3.0%	6.6%	2.7%	1.369
2018	2.5%	4.7%	1.0%	3.0%	6.6%	2.7%	1.406
2019	2.5%	4.7%	1.0%	3.0%	6.6%	2.7%	1.444
2020	2.5%	4.7%	0.9%	3.0%	6.6%	2.7%	1.483
2021	2.5%	4.7%	0.9%	3.0%	6.6%	2.7%	1.523
2022	2.5%	4.6%	0.9%	3.0%	6.6%	2.7%	1.564
2023	2.5%	4.6%	0.9%	3.0%	6.6%	2.7%	1.606
2024	2.5%	4.5%	0.9%	3.0%	6.6%	2.7%	1.650
2025	2.5%	4.5%	0.9%	3.0%	6.6%	2.7%	1.694
2026	2.5%	4.5%	0.9%	2.9%	6.6%	2.7%	1.740
2027	2.5%	4.5%	0.9%	2.9%	6.6%	2.7%	1.787
2028	2.5%	4.5%	0.8%	2.9%	6.6%	2.7%	1.835
2029	2.5%	4.5%	0.8%	2.9%	6.6%	2.7%	1.885
2030	2.5%	4.5%	0.8%	2.9%	6.6%	2.7%	1.936
2031	2.5%	4.5%	0.9%	2.9%	6.6%	2.7%	1.988
2032	2.5%	4.5%	0.8%	2.9%	6.6%	2.7%	2.042
2033	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.097
2034	2.5%	4.5%	0.8%	2.9%	6.6%	2.7%	2.153
2035	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.211
2036	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.271
2037	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.332
2038	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.395
2039	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.460
2040	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.527
2041	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.595
2042	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.665
2043	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.737
2044	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.811
2045	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.887
2046	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	2.964
2047	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.045
2048	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.127
2049	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.211
2050	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.298
2051	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.387
2052	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.478
2053	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.572
2054	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.669
2055	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.768
2056	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.869
2057	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	3.974
2058	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	4.081
2059	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	4.191
2060	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	4.305
2061	2.5%	4.5%	0.7%	2.9%	6.6%	2.7%	4.421

2.6% = AVERAGE COMPOUND CPI INFLATION MULTILPLIER 2000-2054
2.6% = AVERAGE COMPOUND CPI INFLATION MULTILPLIER 2004-2061

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Support Schedule : Inflation and Funding Analysis

TURKEY POINT UNIT 3 WITH LICENSE EXTENSION

AVERAGE INFLATION RATE = 4.500% 2004-End

	4.500% LABOR HRLY COMP	0.800% MATERIAL PPI INT M&S	2.900% SHIPPING GDP Transp	6.600% BURIAL	2.500% OTHER GDP	TOTAL
2004	**246,796,000**	**56,814,000**	**10,705,000**	**57,234,000**	**61,196,000**	**432,745,000**
2005	260,863,372	60,563,724	11,047,560	61,011,444	62,725,900	456,212,000
2006	271,037,044	61,169,361	11,412,129	65,038,199	64,043,144	472,699,877
2007	282,149,562	60,068,313	11,708,845	69,330,720	65,324,007	488,581,447
2008	294,281,993	59,467,630	12,013,275	73,906,548	66,695,811	506,365,257
2009	307,230,401	59,229,759	12,325,620	78,784,380	68,096,423	525,666,583
2010	320,748,539	59,229,759	12,658,412	83,984,149	69,594,544	546,215,403
2011	335,182,223	59,762,827	13,038,164	89,527,103	71,264,813	568,775,130
2012	350,265,423	60,420,218	13,429,309	95,435,892	73,046,434	592,597,276
2013	365,677,102	61,024,420	13,818,759	101,734,661	74,872,594	617,127,536
2014	381,401,217	61,573,640	14,219,503	108,449,148	76,669,537	642,313,045
2015	398,182,871	62,066,229	14,646,088	115,606,792	78,509,606	669,011,586
2016	416,499,283	62,624,825	15,085,471	123,236,840	80,472,346	697,918,765
2017	436,074,749	63,188,449	15,538,035	131,370,472	82,484,154	728,655,859
2018	456,570,262	63,820,333	16,004,176	140,040,923	84,546,258	760,981,953
2019	478,029,065	64,458,536	16,484,301	149,283,624	86,659,915	794,915,441
2020	500,496,431	65,038,663	16,978,830	159,136,343	88,826,413	830,476,680
2021	524,019,763	65,624,011	17,488,195	169,639,342	91,047,073	867,818,384
2022	548,124,672	66,214,627	18,012,841	180,835,538	93,323,250	906,510,928
2023	573,338,407	66,810,559	18,553,226	192,770,684	95,656,331	947,129,207
2024	599,138,635	67,411,854	19,109,823	205,493,549	98,047,739	989,201,600
2025	626,099,874	68,018,561	19,683,118	219,056,123	100,498,933	1,033,356,608
2026	654,274,368	68,630,728	20,253,928	233,513,827	103,011,406	1,079,684,257
2027	683,716,715	69,248,404	20,841,292	248,925,740	105,586,691	1,128,318,842
2028	714,483,967	69,802,391	21,445,689	265,354,839	108,226,359	1,179,313,245
2029	746,635,745	70,360,811	22,067,614	282,868,258	110,932,017	1,232,864,446
2030	780,234,354	70,923,697	22,707,575	301,537,563	113,705,318	1,289,108,507
2031	815,344,900	71,562,010	23,366,095	321,439,043	116,547,951	1,348,259,998
2032	852,035,420	72,134,506	24,043,712	342,654,019	119,461,650	1,410,329,307
2033	890,377,014	72,639,448	24,740,979	365,269,185	122,448,191	1,475,474,817
2034	930,443,980	73,220,564	25,458,468	389,376,951	125,509,396	1,544,009,357
2035	972,313,959	73,733,108	26,196,763	415,075,830	128,647,131	1,615,966,790
2036	1,016,068,087	74,249,239	26,956,469	442,470,834	131,863,309	1,691,607,939
2037	1,061,791,151	74,768,984	27,738,207	471,673,909	135,159,892	1,771,132,143
2038	1,109,571,753	75,292,367	28,542,615	502,804,387	138,538,889	1,854,750,011
2039	1,159,502,481	75,819,413	29,370,351	535,989,477	142,002,361	1,942,684,084
2040	1,211,680,093	76,350,149	30,222,091	571,364,782	145,552,420	2,035,169,536
2041	1,266,205,697	76,884,600	31,098,532	609,074,858	149,191,231	2,132,454,918
2042	1,323,184,954	77,422,793	32,000,389	649,273,799	152,921,011	2,234,802,945
2043	1,382,728,277	77,964,752	32,928,400	692,125,869	156,744,037	2,342,491,335
2044	1,444,951,049	78,510,505	33,883,324	737,806,177	160,662,638	2,455,813,693
2045	1,509,973,846	79,060,079	34,865,940	786,501,385	164,679,203	2,575,080,454
2046	1,577,922,669	79,613,499	35,877,053	838,410,476	168,796,184	2,700,619,881
2047	1,648,929,190	80,170,794	36,917,487	893,745,567	173,016,088	2,832,779,126
2048	1,723,131,003	80,731,990	37,988,094	952,732,775	177,341,490	2,971,925,352
2049	1,800,671,898	81,297,113	39,089,749	1,015,613,138	181,775,028	3,118,446,926
2050	1,881,702,134	81,866,193	40,223,352	1,082,643,605	186,319,403	3,272,754,687
2051	1,966,378,730	82,439,257	41,389,829	1,154,098,083	190,977,388	3,435,283,286
2052	2,054,865,772	83,016,331	42,590,134	1,230,268,556	195,751,823	3,606,492,617
2053	2,147,334,732	83,597,446	43,825,248	1,311,466,281	200,645,619	3,786,869,325
2054	2,243,964,795	84,182,628	45,096,180	1,398,023,056	205,661,759	3,976,928,418

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Support Schedule : Inflation and Funding Analysis

TURKEY POINT UNIT 4 WITH LICENSE EXTENSION

AVERAGE INFLATION RATE = 4.600% 2004-End

	4.500%	0.800%	2.900%	6.600%	2.500%	
	LABOR HRLY COMP	MATERIAL PPI INT M&S	SHIPPING GDP Transp	BURIAL	OTHER GDP	TOTAL
2004	**312,754,000**	**85,373,000**	**17,644,000**	**83,533,000**	**60,277,000**	**559,581,000**
2005	330,580,978	91,007,618	18,208,608	89,046,178	61,783,925	590,627,307
2006	343,473,636	91,917,694	18,809,492	94,923,226	63,081,387	612,205,436
2007	357,556,055	90,263,176	19,298,539	101,188,159	64,343,015	632,648,944
2008	372,930,966	89,360,544	19,800,301	107,866,577	65,694,218	655,652,606
2009	389,339,928	89,003,102	20,315,109	114,985,771	67,073,797	680,717,707
2010	406,470,885	89,003,102	20,863,617	122,574,832	68,549,421	707,461,856
2011	424,762,075	89,804,130	21,489,525	130,664,771	70,194,607	736,915,107
2012	443,876,368	90,791,975	22,134,211	139,288,646	71,949,472	768,040,672
2013	463,406,928	91,699,895	22,776,103	148,481,697	73,748,209	800,112,831
2014	483,333,426	92,525,194	23,436,610	158,281,489	75,518,166	833,094,884
2015	504,600,097	93,265,395	24,139,708	168,728,067	77,330,602	868,063,869
2016	527,811,701	94,104,784	24,863,900	179,864,119	79,263,867	905,908,371
2017	552,618,851	94,951,727	25,609,817	191,735,151	81,245,463	946,161,009
2018	578,591,937	95,901,244	26,378,111	204,389,671	83,276,600	988,537,564
2019	605,785,758	96,860,257	27,169,454	217,879,389	85,358,515	1,033,053,374
2020	634,257,689	97,731,999	27,984,538	232,259,429	87,492,478	1,079,726,133
2021	664,067,801	98,611,587	28,824,074	247,588,551	89,679,790	1,128,771,803
2022	694,614,919	99,499,091	29,688,796	263,929,396	91,921,785	1,179,653,987
2023	726,567,206	100,394,583	30,579,460	281,348,736	94,219,829	1,233,109,814
2024	759,262,730	101,298,134	31,496,844	299,917,752	96,575,325	1,288,550,786
2025	793,429,553	102,209,818	32,441,749	319,712,324	98,989,708	1,346,783,152
2026	829,133,883	103,129,706	33,382,560	340,813,337	101,464,451	1,407,923,937
2027	866,444,907	104,057,873	34,350,654	363,307,018	104,001,062	1,472,161,515
2028	905,434,928	104,890,336	35,346,823	387,285,281	106,601,088	1,539,558,457
2029	946,179,500	105,729,459	36,371,881	412,846,109	109,266,116	1,610,393,065
2030	988,757,577	106,575,295	37,426,666	440,093,953	111,997,769	1,684,851,259
2031	1,033,251,668	107,534,472	38,512,039	469,140,153	114,797,713	1,763,236,046
2032	1,079,747,993	108,394,748	39,628,888	500,103,404	117,667,656	1,845,542,689
2033	1,128,336,653	109,153,511	40,778,126	533,110,228	120,609,347	1,931,987,866
2034	1,179,111,803	110,026,739	41,960,692	568,295,503	123,624,581	2,023,019,318
2035	1,232,171,834	110,796,927	43,177,552	605,803,006	126,715,195	2,118,664,514
2036	1,287,619,566	111,572,505	44,429,701	645,786,005	129,883,075	2,219,290,852
2037	1,345,562,447	112,353,513	45,718,162	688,407,881	133,130,152	2,325,172,154
2038	1,406,112,757	113,139,987	47,043,989	733,842,801	136,458,406	2,436,597,940
2039	1,469,387,831	113,931,967	48,408,264	782,276,426	139,869,866	2,553,874,355
2040	1,535,510,283	114,729,491	49,812,104	833,906,670	143,366,613	2,677,325,161
2041	1,604,608,246	115,532,597	51,256,655	888,944,511	146,950,778	2,807,292,787
2042	1,676,815,617	116,341,326	52,743,098	947,614,848	150,624,547	2,944,139,436
2043	1,752,272,320	117,155,715	54,272,648	1,010,157,428	154,390,161	3,088,248,272
2044	1,831,124,574	117,975,805	55,846,555	1,076,827,819	158,249,915	3,240,024,667
2045	1,913,525,180	118,801,635	57,466,105	1,147,898,455	162,206,163	3,399,897,538
2046	1,999,633,813	119,633,247	59,132,622	1,223,659,753	166,261,317	3,568,320,751
2047	2,089,617,335	120,470,680	60,847,468	1,304,421,296	170,417,850	3,745,774,628
2048	2,183,650,115	121,313,974	62,612,044	1,390,513,102	174,678,296	3,932,767,532
2049	2,281,914,370	122,163,172	64,427,794	1,482,286,967	179,045,254	4,129,837,556
2050	2,384,600,517	123,018,314	66,296,200	1,580,117,906	183,521,385	4,337,554,322
2051	2,491,907,540	123,879,443	68,218,789	1,684,405,688	188,109,420	4,556,520,880
2052	2,604,043,379	124,746,599	70,197,134	1,795,576,464	192,812,155	4,787,375,731
2053	2,721,225,331	125,619,825	72,232,851	1,914,084,510	197,632,459	5,030,794,977
2054	**2,843,680,471**	**126,499,164**	**74,327,604**	**2,040,414,088**	**202,573,270**	**5,287,494,597**

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Support Schedule : Inflation and Funding Analysis

GENERAL ASSUMPTIONS

JURISDICTIONAL FACTOR =	99.5614%
FPL'S SHARE OF ST. LUCIE 2 COST (NET OF PARTICIPANTS)	85.16123%
CORPORATE TAX RATE	38.575%

	ANNUAL	MONTHLY
EARNINGS RATE QUALIFIED FUND	5.000%	0.407412%
EARNINGS RATE NON-QUALIFIED FUND	5.000%	0.407412%

	TP3	TP4	SL1	SL2
Adjusted QUALIFIED FUNDING % (at 12/31/05)	58.550%	60.570%	66.820%	78.380%
FUND BALANCES ($000's)				
A. QUALIFIED FUND BALANCE 10/31/05	280,691	327,970	363,047	325,455
B. CONTRIBUTIONS Nov.- Dec. 2005	-	-	-	-
C. EARNINGS Estimated Nov.- Dec. 2005	2,297	2,684	2,971	2,663
D.	-	-	-	-
E. QUALIFIED FUND BALANCE 12/31/05	282,988	330,654	366,018	328,118
F. JURISDICTIONAL FACTOR	99.5614%	99.5614%	99.5614%	99.5614%
G. JURIS. QUAL. FUND BAL. 12/31/05	281,747	329,204	364,412	326,678
A. NON-QUALIFIED FUND BALANCE 10/31/05	122,055	131,167	110,758	55,152
B. CONTRIBUTIONS Nov.- Dec. 2005	-	-	-	-
C. EARNINGS Estimated Nov.- Dec. 2005	999	1,073	906	451
D.	-	-	-	-
E. NON-QUALIFIED FUND BALANCE 12/31/05	123,054	132,240	111,664	55,603
F. JURISDICTIONAL FACTOR	99.5614%	99.5614%	99.5614%	99.5614%
G. JURIS. NON-QUAL. FUND BAL. 12/31/05	122,515	131,660	111,174	55,359
Juris. Est/Actual Fund Balance	404,261	460,863	475,587	382,037
Juris. Est/Actual Reserve Balance	481,201	543,546	545,404	416,803
Adjusted/Actual Qualified split	0.5855	0.6057	0.6682	0.7838

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
Support Schedule : Inflation and Funding Analysis

TURKEY POINT UNIT 3 WITH LICENSE EXTENSION

INFLATION RATE 4.500%

	NOMINAL ANNUAL	NOMINAL MONTHLY
EARNINGS RATE QUALIFIED FUND	5.000%	0.407412%
EARNINGS RATE NON-QUALIFIED FUND	5.000%	0.407412%

CORPORATE TAX RATE 38.575%

JURISDICTIONAL FACTOR 99.5614%

Adjusted QUALIFIED % 58.550%

LICENSE ENDS 19-Jul-32
MONTHS TO FUND as of 12/31/05 318

YEAR	SPENDING CURVE	ESTIMATED COST IN ($2004)	**ESTIMATED COST IN ($2004)**	ESTIMATED COST IN NOMINAL $	JURISDICTIONAL AMOUNT	QUALIFIED AMOUNT	NON-QUAL AMOUNT	TAX SAVINGS	PV @ 5.0% QUALIFIED AMOUNT	PV @ 5.0% NON-QUAL AMOUNT
2005	0.0000%	-	-	-	-	-	-	-	-	-
2006	0.0000%	-	-	-	-	-	-	-	-	-
2007	0.0000%	-	-	-	-	-	-	-	-	-
2008	0.0000%	-	-	-	-	-	-	-	-	-
2009	0.0000%	-	-	-	-	-	-	-	-	-
2010	0.0000%	-	-	-	-	-	-	-	-	-
2031	0.0000%	-	-	-	-	-	-	-	-	-
2032	5.1222%	22,166,000	22,166,000	76,022,730	75,689,294	44,316,082	19,270,996	12,102,217	11,869,988	5,161,704
2033	16.7182%	72,347,000	72,347,000	259,294,288	258,157,023	151,150,937	65,728,488	41,277,598	38,557,642	16,766,919
2034	22.3228%	96,601,000	96,601,000	361,801,477	360,214,616	210,905,658	91,713,028	57,595,931	51,238,754	22,281,343
2035	14.4896%	62,703,000	62,703,000	245,410,604	244,334,233	143,057,693	62,209,114	39,067,425	33,100,324	14,393,786
2036	8.9612%	38,779,000	38,779,000	158,605,375	157,909,731	92,456,148	40,204,864	25,248,720	20,373,588	8,859,523
2037	8.9364%	38,672,000	38,672,000	165,285,295	164,560,354	96,350,087	41,898,156	26,312,110	20,220,623	8,793,005
2038	4.6281%	20,028,000	20,028,000	89,452,289	89,059,951	52,144,601	22,675,254	14,240,096	10,422,274	4,532,161
2039	2.9844%	12,915,000	12,915,000	60,278,797	60,014,414	35,138,439	15,280,067	9,595,907	6,688,771	2,908,634
2040	3.1883%	13,797,000	13,797,000	67,293,191	66,998,043	39,227,354	17,058,146	10,712,543	7,111,538	3,092,476
2041	2.9978%	12,973,000	12,973,000	66,121,571	65,831,562	38,544,380	16,761,152	10,526,031	6,654,973	2,893,937
2042	0.6470%	2,800,000	2,800,000	14,913,414	14,848,004	8,693,506	3,780,400	2,374,097	1,429,522	621,632
2043	0.5320%	2,302,000	2,302,000	12,812,700	12,756,503	7,468,933	3,247,890	2,039,680	1,169,675	508,637
2044	0.5336%	2,309,000	2,309,000	13,429,986	13,371,082	7,828,768	3,404,366	2,137,947	1,167,645	507,754
2045	0.5320%	2,302,000	2,302,000	13,991,788	13,930,420	8,156,261	3,546,777	2,227,382	1,158,562	503,804
2046	0.5320%	2,302,000	2,302,000	14,621,419	14,557,289	8,523,293	3,706,382	2,327,614	1,153,045	501,405
2047	0.5320%	2,302,000	2,302,000	15,279,383	15,212,367	8,906,841	3,873,170	2,432,357	1,147,554	499,018
2048	0.5336%	2,309,000	2,309,000	16,015,508	15,945,264	9,335,952	4,059,770	2,549,542	1,145,562	498,152
2049	0.5320%	2,302,000	2,302,000	16,685,468	16,612,285	9,726,493	4,229,598	2,656,194	1,136,651	494,276
2050	0.5320%	2,302,000	2,302,000	17,436,314	17,359,838	10,164,185	4,419,930	2,775,723	1,131,238	491,923
2051	0.5320%	2,302,000	2,302,000	18,220,948	18,141,031	10,621,574	4,618,827	2,900,631	1,125,851	489,580
2052	0.5336%	2,309,000	2,309,000	19,098,791	19,015,024	11,133,296	4,841,351	3,040,376	1,123,898	488,731
2053	2.9477%	12,756,000	12,756,000	110,258,668	109,775,074	64,273,306	27,949,461	17,552,307	6,179,371	2,687,120
2054	0.7318%	3,167,000	3,167,000	28,606,359	28,480,892	16,675,562	7,251,424	4,553,906	1,526,880	663,969
	100.0000%	432,745,000	432,745,000	1,860,936,361	1,852,774,295	1,084,799,349	471,728,610	296,246,335	226,833,929	98,639,490

	QUALIFIED	NON-QUAL	TOTAL
NPV @12/31/05	226,833,929	98,639,490	325,473,419
LESS BALANCE @ 12/31/05	281,746,724	122,514,603	404,261,327
PV OF FUNDING REQUIREMENTS	(54,912,795)	(23,875,113)	(78,787,908)
MONTHLY FUNDING REQUIREMENT	0.00	0.00	0.00
ANNUAL FUNDING REQUIREMENT	0.00	0.00	0.00
MONTHLY ACCRUAL	0.00	0.00	0.00
ANNUAL ACCRUAL	0.00	0.00	0.00

Florida Power & Light Company
2005 Decommissioning Study
Turkey Point Nuclear Units
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TURKEY POINT UNIT 4 WITH LICENSE EXTENSION

INFLATION RATE 4.600%

	NOMINAL ANNUAL	NOMINAL MONTHLY
EARNINGS RATE QUALIFIED FUND	5.000%	0.407412%
EARNINGS RATE NON-QUALIFIED FUND	5.000%	0.407412%
CORPORATE TAX RATE	38.575%	
JURISDICTIONAL FACTOR	99.5614%	
Adjusted QUALIFIED % 60.570%		
LICENSE ENDS	10-Apr-33	
MONTHS TO FUND as of 12/31/05	327	

YEAR	SPENDING CURVE	ESTIMATED COST IN ($2004)	**ESTIMATED COST IN ($2004)**	ESTIMATED COST IN NOMINAL $	JURISDICTIONAL AMOUNT	QUALIFIED AMOUNT	NON-QUAL AMOUNT	TAX SAVINGS	PV @ 5.0% QUALIFIED AMOUNT	PV @ 5.0% NON-QUAL AMOUNT
2005	0.0000%	-	-	-	-	-	-	-	-	-
2006	0.0000%	-	-	-	-	-	-	-	-	-
2007	0.0000%	-	-	-	-	-	-	-	-	-
2008	0.0000%	-	-	-	-	-	-	-	-	-
2009	0.0000%	-	-	-	-	-	-	-	-	-
2010	0.0000%	-	-	-	-	-	-	-	-	-
2011	0.0000%	-	-	-	-	-	-	-	-	-
2032	0.0000%	-	-	-	-	-	-	-	-	-
2033	5.8499%	32,735,000	32,735,000	120,623,297	120,094,244	72,741,083	29,086,679	18,266,482	18,555,788	7,419,827
2034	15.0186%	84,041,000	84,041,000	323,922,971	322,502,245	195,339,610	78,109,649	49,052,987	47,457,040	18,976,452
2035	19.8434%	111,040,000	111,040,000	447,673,795	445,710,298	269,966,728	107,950,488	67,793,082	62,464,213	24,977,309
2036	14.0107%	78,401,000	78,401,000	330,624,861	329,174,741	199,381,140	79,725,719	50,067,881	43,935,523	17,568,318
2037	11.4496%	64,070,000	64,070,000	282,618,322	281,378,758	170,431,114	68,149,591	42,798,054	35,767,725	14,302,293
2038	10.9260%	61,140,000	61,140,000	282,099,755	280,862,465	170,118,395	68,024,545	42,719,525	34,001,996	13,596,239
2039	6.5996%	36,930,000	36,930,000	178,233,061	177,451,331	107,482,271	42,978,495	26,990,565	20,459,766	8,181,163
2040	4.3883%	24,556,000	24,556,000	123,964,767	123,421,057	74,756,134	29,892,429	18,772,494	13,552,561	5,419,207
2041	4.2780%	23,939,000	23,939,000	126,409,098	125,854,668	76,230,172	30,481,846	19,142,649	13,161,704	5,262,917
2042	0.5979%	3,346,000	3,346,000	18,481,191	18,400,132	11,144,960	4,456,489	2,798,683	1,832,629	732,806
2043	0.4182%	2,340,000	2,340,000	13,519,217	13,459,922	8,152,675	3,259,977	2,047,271	1,276,753	510,530
2044	0.4194%	2,347,000	2,347,000	14,183,404	14,121,196	8,553,208	3,420,136	2,147,851	1,275,694	510,106
2045	0.4182%	2,340,000	2,340,000	14,791,592	14,726,716	8,919,972	3,566,793	2,239,952	1,267,044	506,647
2046	0.4182%	2,340,000	2,340,000	15,472,005	15,404,145	9,330,291	3,730,865	2,342,989	1,262,217	504,717
2047	0.4182%	2,340,000	2,340,000	16,183,718	16,112,736	9,759,484	3,902,485	2,450,767	1,257,408	502,795
2048	0.4194%	2,347,000	2,347,000	16,978,808	16,904,339	10,238,958	4,094,210	2,571,171	1,256,365	502,378
2049	0.4182%	2,340,000	2,340,000	17,706,864	17,629,202	10,678,008	4,269,771	2,681,423	1,247,846	498,971
2050	0.4182%	2,340,000	2,340,000	18,521,380	18,440,145	11,169,196	4,466,181	2,804,769	1,243,093	497,070
2051	0.4182%	2,340,000	2,340,000	19,373,364	19,288,392	11,682,979	4,671,625	2,933,788	1,238,357	495,177
2052	0.4194%	2,347,000	2,347,000	20,325,159	20,236,013	12,256,953	4,901,137	3,077,922	1,237,330	494,766
2053	2.2860%	12,792,000	12,792,000	115,875,332	115,367,103	69,877,854	27,941,771	17,547,478	6,718,204	2,686,381
2054	0.5665%	3,170,000	3,170,000	30,036,096	29,904,358	18,113,070	7,242,799	4,548,489	1,658,504	663,179
	100.0000%	559,581,000	559,581,000	2,547,618,059	2,536,444,206	1,536,324,256	614,323,680	385,796,271	312,127,757	124,809,246

	QUALIFIED	NON-QUAL	TOTAL
NPV @12/31/05	312,127,757	124,809,246	436,937,003
LESS BALANCE @ 12/31/05	329,203,903	131,659,552	460,863,455
PV OF FUNDING REQUIREMENTS	(17,076,146)	(6,850,306)	(23,926,453)
MONTHLY FUNDING REQUIREMENT	0.00	0.00	0.00
ANNUAL FUNDING REQUIREMENT	0.00	0.00	0.00
MONTHLY ACCRUAL	0.00	0.00	0.00
ANNUAL ACCRUAL	0.00	0.00	0.00

SECTION 11

DECOMMISSIONING COST ANALYSIS FOR THE TURKEY POINT PLANT UNITS 3 AND 4

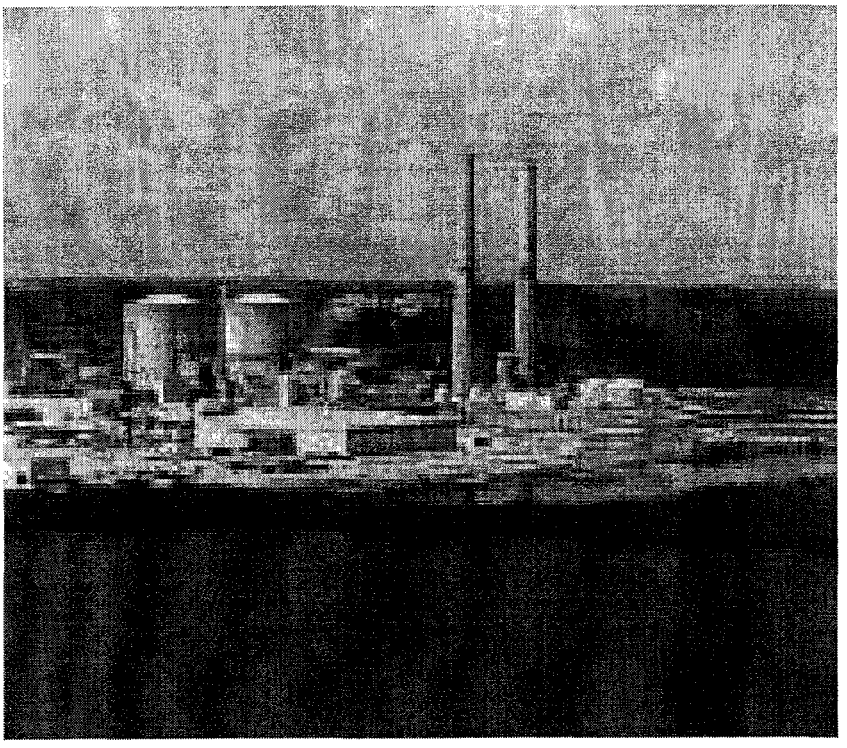
Prepared By

TLG SERVICES, INC.

DECOMMISSIONING COST ANALYSIS

for the

TURKEY POINT PLANT, UNITS 3 and 4



prepared for the

Florida Power & Light Company

prepared by

TLG Services, Inc.
Bridgewater, Connecticut

October 2005

APPROVALS

Project Manager	William A. Cloutier, Jr.	10-18-05 Date
Project Engineer	Mark S. Houghton	10-18-05 Date
Technical Manager	Francis W. Seymore	10/18/05 Date
Quality Assurance Manager	Thomas L. Williamson	10/19/05 Date

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REVISION LOG

No.	CRA No.	Date	Item Revised	Reason for Revision
0		10-18-05		Original Issue

EXECUTIVE SUMMARY

This report presents estimates of the cost to decommission the Turkey Point Plant, Units 3 and 4 (Turkey Point) for the identified decommissioning scenarios following the scheduled cessation of plant operations. The analysis relies upon site-specific, technical information from an evaluation for the Florida Power & Light Company (FPL) in 1999,[1] updated to reflect current assumptions pertaining to the disposition of the nuclear units and relevant industry experience in undertaking such projects. The updated estimates are designed to provide FPL with sufficient information to assess its financial obligations, as they pertain to the eventual decommissioning of the nuclear station.

The primary goal of the decommissioning is the removal and disposal of the contaminated systems and structures so that the plant's operating licenses can be terminated. The analysis recognizes that spent fuel will be stored at the site in the plant's storage pools and/or in an independent spent fuel storage installation (ISFSI) until such time that it can be transferred to a U.S. Department of Energy (DOE) facility. Consequently, the estimates also include those costs to manage and subsequently decommission these storage facilities.

The estimates are based on numerous fundamental assumptions, including regulatory requirements, project contingencies, low-level radioactive waste disposal practices, high-level radioactive waste management options, and site restoration requirements. The estimates incorporate a minimum cooling period for the spent fuel that resides in the storage pools when operations cease. The estimates also include the dismantling of non-essential structures and limited restoration of the site.

Alternatives and Regulations

The Nuclear Regulatory Commission (NRC or Commission) provided initial decommissioning requirements in its rule adopted on June 27, 1988.[2] In this rule, the NRC set forth financial criteria for decommissioning licensed nuclear power facilities. The regulations addressed planning needs, timing, funding methods, and environmental review requirements for decommissioning. The rule also defined

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1 "Decommissioning Cost Study for the Turkey Point Plant, Units 3 and 4," Document No. F02-1297-003, Rev. 1, TLG Services, Inc., October 1999.

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.

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.

The 60-year restriction has limited the practicality for the ENTOMB alternative at commercial reactors that generate significant amounts of long-lived radioactive material. In 1997, the Commission directed its staff to re-evaluate this alternative and identify the technical requirements and regulatory actions that would be necessary for entombment to become a viable option. The resulting evaluation provided several recommendations, however, rulemaking has been deferred pending the completion of additional research studies, *e.g.*, on engineered barriers.

In 1996, the NRC amended its decommissioning regulations to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in the decommissioning process.[6] The amendments allow for greater

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3 Ibid. Page FR24022, Column 3.
4 Ibid.
5 Ibid. Page FR24023, Column 2.
6 U.S. Code of Federal Regulations, Title 10, Parts 2, 50, and 51, "Decommissioning of Nuclear Power Reactors," US NRC, Federal Register Volume 61, (p 39278 et seq.), July 29, 1996.

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 acceptable to the NRC staff for implementing the requirements of the 1996 amendments relating to the initial activities and major phases of the decommissioning process. The costs and schedules presented in this analysis follow the general guidance and processes described in the amended regulations.

Decommissioning Scenarios

Two decommissioning scenarios were evaluated for the Turkey Point units. The scenarios selected are representative of alternatives available to the owner and are defined as follows:

1. DECON: The operating licenses for Units 3 and 4 currently expire in July 2032 and April 2033, respectively. The first scenario assumes that decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes. Any residual spent fuel is transferred to the ISFSI so as to facilitate decontamination and dismantling activities within the fuel handling buildings. Spent fuel storage operations continue at the site until the transfer of the fuel to the DOE is complete, assumed to be in the year 2053.

2. SAFSTOR: The units are placed into safe-storage shortly after the permanent cessation of operations and defueling. Spent fuel remaining in the spent fuel storage pools after a minimum cooling period is transferred to the ISFSI for interim storage, consistent with the DECON spent fuel management plan. Decommissioning is deferred beyond the fuel storage period to the maximum extent possible; termination of the licenses would conclude within the required 60-year period. As with the DECON scenario, decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes.

Methodology

The methodology used to develop the estimate described within this document follows the basic approach originally presented in the cost estimating guidelines[7] developed by the Atomic Industrial Forum (now Nuclear Energy Institute). This reference describes a unit factor method for determining decommissioning activity

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

costs. The unit factors used in this analysis incorporate site-specific costs and the latest available information on worker productivity in decommissioning.

An activity duration critical path is used to determine the total decommissioning program schedule. The schedule is relied upon in calculating the carrying costs, which include program management, administration, field engineering, equipment rental, and support services such as quality control and security. This systematic approach for assembling decommissioning estimates ensures a high degree of confidence in the reliability of the resulting costs.

Contingency

Consistent with cost estimating practice, contingencies are applied to the decontamination and dismantling costs developed as "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."[8] The cost elements in the estimates are based on ideal conditions; therefore, the types of unforeseeable events that are almost certain to occur in decommissioning, based on industry experience, are 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 and inflation in the cost of decommissioning over the remaining operating life of the station.

The use and role of contingency within decommissioning estimates is not a safety factor issue. Safety factors provide additional security and address situations that may never occur. Contingency funds, by contrast, are expected to be fully expended throughout the program. Inclusion of contingency is necessary to provide assurance that sufficient funding will be available to accomplish the intended tasks.

Low-Level Radioactive Waste 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,[9] and its

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

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

Amendments of 1985,[10] the states became ultimately responsible for the disposition of low-level radioactive waste generated within their own borders.

FPL is currently able to access the disposal facility in Barnwell, South Carolina. However, in June 2000, South Carolina formally joined with Connecticut and New Jersey to form the Atlantic Compact. The legislation provides for South Carolina to gradually limit access to the Barnwell facility, with only Atlantic Compact members having access to the facility after mid-year 2008. Despite the closing of one of the two currently accessible commercial disposal sites, it is reasonable to assume that additional disposal capacity will be available to support reactor decommissioning, particularly for the isolation of the more highly radioactive material that is not suitable for disposal elsewhere. However, for estimating purposes, and as a proxy for future disposal facilities, waste disposal costs are estimated using available pricing schedules for the currently operating facilities, *i.e.*, at Barnwell and the Envirocare facility in Utah.

High-Level Radioactive Waste Management

Congress passed the "Nuclear Waste Policy Act"[11] (NWPA) in 1982, assigning the responsibility for disposal of the spent nuclear fuel created by the commercial nuclear generating plants to the DOE. Two permanent disposal facilities were envisioned, as well as an interim storage facility. To recover the cost, the legislation created a Nuclear Waste Fund through which money is collected from the sale of electricity generated by the power plants. The NWPA, along with the individual disposal 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 initiate the disposal of spent nuclear fuel and high level waste, as required by the NWPA and the utility contracts. As a result, utilities have initiated legal action against the DOE. While legal actions continue, the DOE has no plans to receive spent fuel prior to completing the construction of its geologic repository.

Operation of DOE's yet-to-be constructed repository is contingent upon the review and approval of the facility's license application by the NRC, the successful resolution of pending litigation, and the development of a national transportation system. For comparison, the Private Fuel Storage consortium submitted an

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

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

application for an interim storage facility in 1997. It was eight years before the NRC issued a license for the facility. With a more technically complex and politically sensitive application for permanent disposal, it is not unreasonable to expect that the NRC's approval to construct the repository at Yucca Mountain would require at least as long a review period. The DOE has no plans for receiving spent fuel from commercial nuclear plant sites prior to the opening of the repository and startup operations may be phased in, creating additional delays. As such, for estimating purposes, FPL has assumed that the high-level waste repository, or some interim storage facility, will not be fully operational until 2015, at the earliest. This timetable is consistent with the findings of an evaluation issued to Congress by the Government Accounting Office.[12]

The NRC requires that licensees establish a program to manage and provide funding for the caretaking of all irradiated fuel at the reactor site until title of the fuel is transferred to the DOE.[13] The fuel will be stored in the storage pools and/or an ISFSI located on the Turkey Point site until the DOE has completed the transfer.

The ISFSI will be operational prior to the cessation of plant operations. The facility is expanded following plant shutdown to accommodate the inventory of spent fuel residing in the plant's storage pools at the conclusion of the required cooling period. Once emptied, the fuel handling buildings can be either decontaminated and dismantled or prepared for long-term storage. The ISFSI will be independently licensed once the plant's operating license is terminated.

The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. Given this scenario and an anticipated rate of transfer, spent fuel is projected to remain at the site for approximately 20 years after the cessation of Unit 4 operations. Consequently, costs are included within the estimates for the long-term caretaking of the spent fuel at the Turkey Point site until the year 2053 in both the DECON and SAFSTOR scenarios.

Site Restoration

The efficient removal of the contaminated materials at the site may result in damage to many of the site structures. Blasting, coring, drilling, and the other decontamination activities will substantially damage power block structures,

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12 "Technical, Schedule, and Cost Uncertainties of the Yucca Mountain Repository Project," GAO-02-191, December 2001.

13 "Domestic Licensing of Production and Utilization Facilities," U.S. Code of Federal Regulations, Title 10, Part 50.54 (bb).

potentially weakening the footings and structural supports. Prompt demolition once the license is terminated is clearly the most appropriate and cost-effective option. It is unreasonable to anticipate that these structures would be repaired and preserved after the radiological contamination is removed. The cost to dismantle site structures with a work force already mobilized is more efficient and less costly than if the process were deferred. Experience at shutdown generating stations has shown that plant facilities quickly degrade without maintenance, adding additional expense and creating potential hazards to the public and the demolition work force. Consequently, this analysis assumes that non-essential site structures within the restricted access area are removed to a nominal depth of three feet below the local grade level wherever possible. The site is then graded and stabilized.

Summary

The costs to decommission Turkey Point were evaluated for the identified decommissioning scenarios, incorporating the attributes of both the DECON and SAFSTOR decommissioning alternatives. Regardless of the timing of the decommissioning activities, the estimates assume the eventual removal of all the contaminated and activated plant components and structural materials, such that the facility operator may then have unrestricted use of the site with no further requirement for an NRC license. Delayed decommissioning is initiated after the spent fuel has been removed from the site and is accomplished within the 60-year period required by current NRC regulations. In the interim, the spent fuel remains in storage at the site until such time that the transfer to a DOE facility can be completed. Once the transfer is complete, the storage facilities are also decommissioned.

The scenarios analyzed for the purpose of generating the estimates are described in Section 2. The assumptions are presented in Section 3, along with schedules of annual expenditures. The major cost contributors are identified in Section 6, with detailed activity costs, waste volumes, and associated manpower requirements delineated in Appendices C and D. Cost summaries for the scenarios are provided at the end of this section for the major cost components.

SUMMARY OF DECOMMISSIONING COST ELEMENTS
DECON
(thousands of 2004 dollars)

Cost Element	Unit 3	Unit 4	Total
Decontamination	8,394	11,049	19,443
Removal	52,621	70,140	122,762
Packaging	10,972	12,029	23,002
Transportation	10,706	17,646	28,352
Waste Disposal	58,642	73,070	131,711
Off-site Waste Processing	8,989	20,860	29,849
Program Management [1]	203,308	249,261	452,569
Spent Fuel Pool Isolation	9,612	7,244	16,856
ISFSI Related	19,150	47,929	67,079
Insurance and Regulatory Fees	14,627	14,687	29,315
Energy	5,067	5,237	10,305
Characterization and Licensing Surveys	5,686	6,533	12,220
Property Taxes	12,072	11,673	23,745
Miscellaneous Equipment	5,909	5,902	11,811
Fixed Overhead	6,988	6,320	13,308
Total [2]	432,745	559,581	992,326
NRC License Termination	359,361	434,907	794,267
Spent Fuel Management [3]	48,307	79,909	128,216
Site Restoration	25,077	44,765	69,842

[1] Includes engineering and security
[2] Columns may not add due to rounding
[3] Includes "ISFSI Related" capital and loading costs as well as the associated period-dependent expenditures, *e.g.*, program management, security, fees and taxes

SUMMARY OF DECOMMISSIONING COST ELEMENTS
SAFSTOR
(thousands of 2004 dollars)

Cost Element	Unit 3	Unit 4	Total
Decontamination	6,235	7,890	14,125
Removal	53,689	70,634	124,324
Packaging	8,488	9,349	17,838
Transportation	7,494	14,542	22,036
Waste Disposal	37,122	48,286	85,407
Off-site Waste Processing	11,324	24,768	36,092
Program Management [1]	291,205	294,124	585,330
Spent Fuel Pool Isolation	9,612	6,408	16,020
ISFSI Related	17,569	46,351	63,920
Insurance and Regulatory Fees	44,324	44,374	88,698
Energy	11,193	11,168	22,361
Characterization and Licensing Surveys	7,164	8,011	15,175
Property Taxes	34,051	33,652	67,703
Miscellaneous Equipment	14,837	16,486	31,323
Fixed Overhead	17,029	16,444	33,472
Total [2]	571,337	652,488	1,223,825
NRC License Termination	482,869	533,489	1,016,358
Spent Fuel Management [3]	60,782	71,147	131,929
Site Restoration	27,687	47,852	75,539

[1] Includes engineering and security
[2] Columns may not add due to rounding
[3] Includes "ISFSI Related" capital and loading costs as well as the associated period-dependent expenditures, *e.g.*, program management, security, fees and taxes

1. INTRODUCTION

This report presents estimates of the cost to decommission the Turkey Point Plant, Units 3 and 4 (Turkey Point), for the scenarios described in Section 2, following a scheduled cessation of plant operations. The analysis is designed to provide the Florida Power & Light Company (FPL) with sufficient information to assess its financial obligations, as they pertain to the eventual decommissioning of the nuclear station. It is not a detailed engineering document, but a financial analysis prepared in advance of the detailed engineering that will be required to carry out the decommissioning.

1.1 OBJECTIVES OF STUDY

The objectives of this study are to prepare comprehensive estimates of the cost to decommission the Turkey Point nuclear units, to provide a sequence or schedule for the associated activities, and to develop waste stream projections from the decontamination and dismantling activities. For the purposes of this study, the cessation of operations is assumed to be on July 19, 2032 and April 10, 2033 for Units 3 and 4, respectively. These dates were used to schedule the decommissioning activities.

1.2 SITE DESCRIPTION

The Turkey Point site is located on the shore of Biscayne Bay, approximately 25 miles south of Miami, Florida, 8 miles east of Florida City and 9 miles southeast of Homestead, Florida. Units 3 and 4 are essentially identical pressurized water reactors, each with a maximum dependable capacity of 693 Megawatts electric (MWe). The two nuclear units are located adjacent to two oil and gas fired units (which are not considered in this study). The nuclear units were designed and constructed by Bechtel Energy Corporation.

The nuclear steam supply systems (NSSS) consist of a pressurized water reactor system designed by Westinghouse Electric Corporation. The reactor coolant system consists of three similar heat transfer loops connected in parallel to the reactor pressure vessel. Each loop contains a reactor coolant pump, steam generator, and associated piping and valves. In addition, the system includes a pressurizer, a pressurizer relief tank, interconnecting piping, and the instrumentation necessary for operational control. All system equipment, except for the digital pressure indicator, three wide range pressure transmitters, and the containment isolation and process actuated

valves located in the lines connected to the pressurizer relief tank, are located in the containment building.

The containment is a steel lined, post-tensioned, reinforced-concrete structure consisting of a vertical cylinder with a hemispherical dome, supported on a flat foundation mat. The cylinder and dome are post-tensioned with high-strength unbounded wire tendons.

Heat produced in the reactor is converted to electrical energy by the steam and power conversion system. The function of the turbine generator is to receive steam from the steam generators, economically convert a portion of the thermal energy contained in the steam to electrical energy, and provide extract steam for six stages of feedwater heating. The turbine generator serves no safety function and has two reheaters before entering the low pressure turbines. The exhaust steam from the two low pressure turbines is condensed in the condenser.

Heat rejected in the main condensers is removed by the circulating water system. The system provides cooling water for removal of heat loads developed in the plant's main condenser which condenses the steam exhaust from the turbine. Cooling water for the condenser is supplied by a network of cooling canals.

1.3 REGULATORY GUIDANCE

The Nuclear Regulatory Commission (NRC or Commission) provided initial decommissioning requirements in its rule "General Requirements for Decommissioning Nuclear Facilities," issued in June 1988.[1]* This rule set forth financial criteria for decommissioning licensed nuclear power facilities. The regulation addressed decommissioning planning needs, timing, funding methods, and environmental review requirements. The intent of the rule was to ensure that decommissioning would be accomplished in a safe and timely manner and that adequate funds would be available for this purpose. Subsequent to the rule, the NRC issued Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors,"[2] which provided additional guidance to the licensees of nuclear facilities on the financial methods acceptable to the NRC staff for complying with the requirements of the rule. The regulatory guide addressed the funding requirements and provided guidance on the content and form of the financial assurance mechanisms indicated in the rule.

* Annotated references for citations in Sections 1-6 are provided in Section 7.

The rule defined three decommissioning alternatives as being acceptable to the NRC: DECON, SAFSTOR, and ENTOMB. The DECON alternative assumes that any contaminated or activated portion of the plant's systems, structures, and facilities are removed or decontaminated to levels that permit the site to be released for unrestricted use shortly after the cessation of plant operations. The rule also placed limits on the time allowed to complete the decommissioning process. For SAFSTOR, the process is restricted in overall duration to 60 years, unless it can be shown that a longer duration is necessary to protect public health and safety. The guidelines for ENTOMB are similar, providing the NRC with both sufficient leverage and flexibility to ensure that these deferred options are only used in situations where it is reasonable and consistent with the definition of decommissioning. At the conclusion of a 60-year dormancy period (or longer for ENTOMB if the NRC approves such a case), the site would still require significant remediation to meet the unrestricted release limits for license termination.

The ENTOMB alternative has not been viewed as a viable option for power reactors due to the significant time required to isolate the long-lived radionuclides for decay to permissible levels. However, with recent rulemaking permitting the controlled release of a site, the NRC has re-evaluated this alternative.[3] The resulting feasibility study, based upon an assessment by Pacific Northwest National Laboratory, concluded that the method did have conditional merit for some, if not most, reactors. However, the staff also found that additional rulemaking would be needed before this option could be treated as a generic alternative. The NRC had considered rulemaking to alter the 60-year time for completing decommissioning and to clarify the use of engineered barriers for reactor entombments.[4] However, the NRC staff has recommended that rulemaking be deferred, based upon several factors, *e.g.*, no licensee has committed to pursuing the entombment option, the unresolved issues associated with the disposition of greater-than-Class C material (GTCC), and the NRC's current priorities, at least until after the additional research studies are complete. The Commission concurred with the staff's recommendation.

The NRC published revisions to the general requirements for decommissioning nuclear power plants in 1996.[5] When the regulations were originally adopted in 1988, it was assumed that the majority of licensees would decommission at the end of the facility's operating licensed life. Since that time, several licensees permanently and prematurely ceased operations. Exemptions from certain operating requirements were required once the reactor was defueled to facilitate the decommissioning. Each case was

handled individually, without clearly defined generic requirements. The NRC amended the decommissioning regulations in 1996 to clarify ambiguities and codify procedures and terminology as a means of enhancing efficiency and uniformity in the decommissioning process. The new amendments allow for greater public participation and better define the transition process from operations to decommissioning.

Under the revised regulations, licensees will submit written certification to the NRC within 30 days after the decision to cease operations. Certification will also be required once the fuel is permanently removed from the reactor vessel. Submittal of these notices will entitle the licensee to a fee reduction and eliminate the obligation to follow certain requirements needed only during operation of the reactor. Within two years of submitting notice of permanent cessation of operations, the licensee is required to submit a Post-Shutdown Decommissioning Activities Report (PSDAR) to the NRC. The PSDAR describes the planned decommissioning activities, the associated sequence and schedule, and an estimate of expected costs. Prior to completing decommissioning, the licensee is required to submit an application to the NRC to terminate the license, which will include a License Termination Plan (LTP).

1.3.1 Nuclear Waste Policy Act

Congress passed the Nuclear Waste Policy Act[6] (NWPA) in 1982, assigning the responsibility for disposal of the spent nuclear fuel created by the commercial nuclear generating plants to the U.S. Department of Energy (DOE). Two permanent disposal facilities and an interim storage facility were envisioned. To recover the cost, the legislation created a Nuclear Waste Fund through which money is collected from the sale of electricity generated by the power plants. The NWPA, along with the individual disposal contracts with the utilities, specified that the DOE was to begin accepting spent fuel by January 31, 1998.

After pursuing a national site selection process, the NWPA was amended in 1987 to designate Yucca Mountain, Nevada, as the only site to be evaluated for geologic disposal of high-level waste. Also in 1987, the DOE announced a five-year delay (1998 to 2003) in the opening date for the repository. Two years later, in 1989, an additional seven-year delay was announced, primarily due to problems in obtaining the permits necessary from the state of Nevada to perform

the required characterization of the site. In 2005, the DOE delayed the projected opening of Yucca Mountain to 2012.

Generators have responded to this impasse by initiating legal action against the DOE and constructing supplemental storage as a means of maintaining necessary fuel storage operating margins. In an August 2000 ruling,[7] the U.S. Court of Appeals for the Federal Circuit reaffirmed the utility position that DOE had breached its contractual obligation. Legal actions seeking the recovery of damages for DOE's failure to begin spent fuel disposal continue; however, the DOE has no plans to receive spent fuel from the commercial reactors until the repository is operational.

The NRC requires that licensees establish a program to manage and provide funding for the management of all irradiated fuel at the reactor until title of the fuel is transferred to the Secretary of Energy, pursuant to Title 10 of the Code of Federal Regulations (10 CFR), §50.54 (bb).[8] This funding requirement is fulfilled through inclusion of certain high-level waste cost elements in the decommissioning estimates, as identified in Section 3.

With the delays in developing a national waste management system, the plant's existing fuel storage facilities need to be supplemented to support long-term plant operations. This analysis assumes that an independent spent fuel storage installation (ISFSI) is constructed at the site prior to shutdown to support plant operations. The cost for the initial construction of the ISFSI is not included in the estimates, however, it is expected that this facility can be augmented to support decommissioning. As such, only the cost to expand the facility is included as a decommissioning expense.

For estimating purposes, the DOE is assumed to commence geologic repository operations in 2015, with the first assemblies from Turkey Point being received in 2016. The DOE's generator allocation/receipt schedules are based upon the oldest fuel receiving the highest priority. Given this scenario, an anticipated rate of transfer and the sharing of allocations with St. Lucie, spent fuel is projected to remain on the Turkey Point site for 20 years after the cessation of Unit 4 operations in 2033. Consequently, costs are included within the estimate for the long-term caretaking of the spent fuel at the site until the year 2053.

1.3.2 Low-Level Radioactive Waste Acts

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. Congress passed the "Low-Level Radioactive Waste Policy Act" in 1980,[9] declaring the states as being 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,"[10] extended the implementation schedule, with specific milestones and stiff sanctions for non-compliance. However, with the sanctions negated, no new compact facilities have been successfully sited, licensed, and constructed.

FPL is currently able to access the disposal facility in Barnwell, South Carolina. However, in June 2000, South Carolina formally joined with Connecticut and New Jersey to form the Atlantic Compact. The legislation provides for South Carolina to gradually limit access to the Barnwell facility, with only Atlantic Compact members having access to the facility after mid-year 2008. Despite the closing of one of the two currently accessible commercial disposal sites, it is reasonable to assume that additional disposal capacity will be available to support reactor decommissioning, particularly for the isolation of the more highly radioactive material that is not suitable for disposal elsewhere. However, for estimating purposes, and as a proxy for future disposal facilities, waste disposal costs are estimated using available pricing schedules for the currently operating facilities, *i.e.*, at Barnwell and the Envirocare facility in Utah.

1.3.3 Radiological Criteria for License Termination

In 1997, the NRC published Subpart E, "Radiological Criteria for License Termination,"[11] amending 10 CFR §20. This subpart provides radiological criteria for releasing a facility for unrestricted use. The regulation states that the site can be released for unrestricted use if radioactivity levels are such that the average member of a critical group would not receive a Total Effective Dose Equivalent (TEDE) in

excess of 25 millirem per year, and provided that residual radioactivity has been reduced to levels that are As Low As Reasonably Achievable (ALARA). The decommissioning estimates assume that the Turkey Point site will be remediated to a residual level consistent with the NRC-prescribed level.

It should be noted that the NRC and the Environmental Protection Agency (EPA) differ on the amount of residual radioactivity considered acceptable in site remediation. The EPA has two limits that apply to radioactive materials. An EPA limit of 15 millirem per year is derived from criteria established by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund).[12] An additional and separate limit of 4 millirem per year, as defined in 40 CFR §141.16, is applied to drinking water.[13]

On October 9, 2002, the NRC signed an agreement with the EPA on the radiological decommissioning and decontamination of NRC-licensed sites. The Memorandum of Understanding (MOU)[14] provides that EPA will defer exercise of authority under CERCLA for the majority of facilities decommissioned under NRC authority. The MOU also includes provisions for NRC and EPA consultation for certain sites when, at the time of license termination, (1) groundwater contamination exceeds EPA-permitted levels; (2) NRC contemplates restricted release of the site; and/or (3) residual radioactive soil concentrations exceed levels defined in the MOU.

The MOU does not impose any new requirements on NRC licensees and should reduce the involvement of the EPA with NRC licensees who are decommissioning. Most sites are expected to meet the NRC criteria for unrestricted use, and the NRC believes that only a few sites will have groundwater or soil contamination in excess of the levels specified in the MOU that trigger consultation with the EPA. However, if there are other hazardous materials on the site, the EPA and the Florida Department of Environmental Protection may be involved in the cleanup. As such, the possibility of dual regulation remains for certain licensees. The present study does not include any costs for this occurrence.

2. DECOMMISSIONING ALTERNATIVES

Detailed cost estimates were developed to decommission the Turkey Point nuclear units utilizing a combination of the approved decommissioning alternatives: DECON and SAFSTOR. Although the alternatives differ with respect to technique, process, cost, and schedule, they attain the same result: the ultimate release of the site for unrestricted use.

The following sections describe the basic activities associated with each alternative. Although detailed procedures for each activity identified are not provided, and the actual sequence of work may vary, the activity descriptions provide a basis not only for estimating but also for the expected scope of work, *i.e.*, engineering and planning at the time of decommissioning.

The conceptual approach that the NRC has described in its regulations divides decommissioning into three phases. The initial phase commences with the effective date of permanent cessation of operations and involves the transition of both plant and licensee from reactor operations (*i.e.*, power production) to facility de-activation and closure. During the first phase, notification is to be provided to the NRC certifying the permanent cessation of operations and the removal of fuel from the reactor vessel. The licensee is then prohibited from reactor operation.

The second phase encompasses activities during the storage period or during major decommissioning activities, or a combination of the two. The third phase pertains to the activities involved in license termination. The decommissioning estimates developed for Turkey Point are also divided into phases or periods; however, demarcation of the phases is based upon major milestones within the project or significant changes in the projected expenditures.

2.1 DECON

The DECON alternative, as defined by the NRC, is "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." This study does not address the cost to dispose of the spent fuel residing at the site; such costs are funded through a surcharge on electrical generation. However, the study does estimate the costs incurred with the interim on-site storage of the fuel pending shipment by the DOE to an off-site disposal facility.

The operating licenses for Units 3 and 4 currently expire in July 2032 and April 2033, respectively. The scenarios, as described in this report, assume that decommissioning activities at the two units are sequenced and integrated so as to minimize the total duration of the physical dismantling processes. Any residual spent fuel is transferred to the ISFSI so as to facilitate decontamination and dismantling activities within the fuel handling buildings. Spent fuel storage operations continue at the site until the transfer of the fuel to the DOE is complete, assumed to be in the year 2053.

2.1.1 Period 1 - Preparations

In anticipation of the cessation of plant operations, detailed preparations are undertaken to provide a smooth transition from plant operations to site decommissioning. Through implementation of a staffing transition plan, the organization required to manage the intended decommissioning activities is assembled from available plant staff and outside resources. Preparations include the planning for permanent defueling of the reactor, revision of technical specifications applicable to the operating conditions and requirements, a characterization of the facility and major components, and the development of the PSDAR.

Engineering and Planning

The PSDAR, required within two years of the notice to cease operations, provides a description of the licensee's planned decommissioning activities, a timetable, and the associated financial requirements of the intended decommissioning program. Upon receipt of the PSDAR, the NRC will make the document available to the public for comment in a local hearing to be held in the vicinity of the reactor site. Ninety days following submittal and NRC receipt of the PSDAR, the licensee may begin to perform major decommissioning activities under a modified 10 CFR §50.59 procedure, *i.e.*, without specific NRC approval. Major activities are defined as any activity that results in permanent removal of major radioactive components, permanently modifies the structure of the containment, or results in dismantling components (for shipment) containing GTCC, as defined by 10 CFR §61. Major components are further defined as comprising the reactor vessel and internals, large bore reactor coolant system piping, and other large components that are radioactive. The NRC includes the following additional criteria for use of the §50.59 process in decommissioning. The proposed activity must not:

- foreclose release of the site for possible unrestricted use,
- significantly increase decommissioning costs,
- cause any significant environmental impact, or
- violate the terms of the licensee's existing license.

Existing operational technical specifications are reviewed and modified to reflect plant conditions and the safety concerns associated with permanent cessation of operations. The environmental impact associated with the planned decommissioning activities is also considered. Typically, a licensee will not be allowed to proceed if the consequences of a particular decommissioning activity are greater than that bounded by previously evaluated environmental assessments or impact statements. In this instance, the licensee would have to submit a license amendment for the specific activity and update the environmental report.

The decommissioning program outlined in the PSDAR will be designed to accomplish the required tasks within the ALARA guidelines (as defined in 10 CFR §20) for protection of personnel from exposure to radiation hazards. It will also address the continued protection of the health and safety of the public and the environment during the dismantling activity. Consequently, with the development of the PSDAR, activity specifications, cost-benefit and safety analyses, work packages and procedures, would be assembled to support the proposed decontamination and dismantling activities.

Site Preparations

Following final plant shutdown, and in preparation for actual decommissioning activities, the following activities are initiated:

- Characterization of the site and surrounding environs. This includes radiation surveys of work areas, major components (including the reactor vessel and its internals), internal piping, and primary shield cores.

- Isolation of the spent fuel storage pools and fuel handling systems, such that decommissioning operations can commence on the balance of the plant. The pools will remain operational for approximately 5½ years following the cessation of operations before the inventory resident at shutdown can be transferred to either the ISFSI or a DOE facility.

- Specification of transport and disposal requirements for activated materials and/or hazardous materials, including shielding and waste stabilization.

- Development of procedures for occupational exposure control, control and release of liquid and gaseous effluent, processing of radwaste (including dry-active waste, resins, filter media, metallic and non-metallic components generated in decommissioning), site security and emergency programs, and industrial safety.

2.1.2 Period 2 - Decommissioning Operations

This period includes the physical decommissioning activities associated with the removal and disposal of contaminated and activated components and structures, including the successful termination of the 10 CFR §50 operating license. Significant decommissioning activities in this phase include:

- Construction of temporary facilities and/or modification of existing facilities to support dismantling activities. This may include a centralized processing area to facilitate equipment removal and component preparations for off-site disposal.

- Reconfiguration and modification of site structures and facilities as needed to support decommissioning operations. This may include the upgrading of roads (on- and off-site) to facilitate hauling and transport. Modifications may be required to the containment structure to facilitate access of large/heavy equipment. Modifications may also be required to the refueling area of the building to support the segmentation of the reactor vessel internals and component extraction.

- Expansion of the ISFSI and the transfer of the spent fuel from the storage pools to a DOE shipping cask or to the ISFSI pad for interim storage.

- Design and fabrication of temporary and permanent shielding to support removal and transportation activities, construction of contamination control envelopes, and the procurement of specialty tooling.

- Procurement (lease or purchase) of shipping canisters, cask liners, and industrial packages for the disposition of low-level radioactive waste.

- Decontamination of components and piping systems as required to control (minimize) worker exposure.

- Removal of piping and components no longer essential to support decommissioning operations.

- Removal of control rod drive housings and the head service structure from the reactor vessel head. Segmentation of the vessel closure head.

- Removal and segmentation of the upper internals assemblies. Segmentation will maximize the loading of the shielded transport casks, *i.e.*, by weight and activity. The operations are conducted under water using remotely operated tooling and contamination controls.

- Disassembly and segmentation of the remaining reactor internals, including the core shroud and lower core support assembly. Some material is expected to exceed Class C disposal requirements. As such, the segments will be packaged in modified fuel storage canisters for geologic disposal.

- Segmentation of the reactor vessel. A shielded platform is installed for segmentation as cutting operations are performed in-air using remotely operated equipment within a contamination control envelope. The water level is maintained just below the cut to minimize the working area dose rates. Segments are transferred in-air to containers that are stored under water, for example, in an isolated area of the refueling canal.

- Removal of the activated portions of the concrete biological shield and accessible contaminated concrete surfaces. If dictated by the steam generator and pressurizer removal scenarios, those portions of the associated cubicles necessary for access and component extraction are removed.

- Removal of the steam generators and pressurizer for material recovery and controlled disposal. The generators will be moved to an on-site processing center, the steam domes removed and the internal components segregated for recycling. The lower shell and tube bundle will be packaged for direct disposal. These components can serve as their own burial containers provided that all penetrations are properly sealed and the internal contaminants are stabilized, *e.g.*, with grout. Steel shielding will be added, as necessary, to those external areas of the package to meet transportation limits and regulations.

At least two years prior to the anticipated date of license termination, an LTP is required. Submitted as a supplement to the Final Safety Analysis Report (FSAR) or its equivalent, the plan must include: a site characterization, description of the remaining dismantling activities, plans for site remediation, procedures for the final radiation survey, designation of the end use of the site, an updated cost estimate to complete the decommissioning, and any associated environmental concerns. The NRC will notice the receipt of the plan, make the plan available for public comment, and schedule a local hearing. LTP approval will be subject to any conditions and limitations as deemed appropriate by the Commission. The licensee may then commence with the final remediation of site facilities and services, including:

- Removal of remaining plant systems and associated components as they become nonessential to the decommissioning program or worker health and safety (*e.g.*, waste collection and treatment systems, electrical power and ventilation systems).

- Removal of the steel liners from refueling canal, disposing of the activated and contaminated sections as radioactive waste. Removal of any activated/ contaminated concrete.

- Surveys of the decontaminated areas of the containment structure.

- Remediation and removal of the contaminated equipment and material from the reactor auxiliary and fuel buildings and any other contaminated facility. Radiation and contamination controls will be utilized until residual levels indicate that the structures and equipment can be released for unrestricted access and conventional demolition. This activity may necessitate the dismantling and

disposition of most of the systems and components (both clean and contaminated) located within these buildings. This activity facilitates surface decontamination and subsequent verification surveys required prior to obtaining release for demolition.

- Routing of material removed in the decontamination and dismantling to a central processing area. Material certified to be free of contamination is released for unrestricted disposition, *e.g.*, as scrap, recycle, or general disposal. Contaminated material is characterized and segregated for additional off-site processing (disassembly, chemical cleaning, volume reduction, and waste treatment), and/or packaged for controlled disposal at a low-level radioactive waste disposal facility.

Incorporated into the LTP is the Final Survey Plan. This plan identifies the radiological surveys to be performed once the decontamination activities are completed and is developed using the guidance provided in the "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)."[15] This document incorporates the statistical approaches to survey design and data interpretation used by the EPA. It also identifies state-of-the-art, commercially available instrumentation and procedures for conducting radiological surveys. Use of this guidance ensures that the surveys are conducted in a manner that provides a high degree of confidence that applicable NRC criteria are satisfied. Once the survey is complete, the results are provided to the NRC in a format that can be verified. The NRC then reviews and evaluates the information, performs an independent confirmation of radiological site conditions, and makes a determination on final termination of the license.

The NRC will terminate the operating license if it determines that site remediation has been performed in accordance with the LTP, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release.

2.1.3 Period 3 - Site Restoration

Following completion of decommissioning operations, site restoration activities will begin. Efficient removal of the contaminated materials and verification that residual radionuclide concentrations are below the NRC limits will result in substantial damage to many of the structures. Although performed in a controlled, safe manner, blasting,

coring, drilling, scarification (surface removal), and the other decontamination activities will substantially degrade power block structures including the reactor, reactor auxiliary and fuel handling buildings. Under certain circumstances, verifying that subsurface radionuclide concentrations meet NRC site release requirements will require removal of grade slabs and lower floors, potentially weakening footings and structural supports. This removal activity will be necessary for those facilities and plant areas where historical records, when available, indicate the potential for radionuclides having been present in the soil, where system failures have been recorded, or where it is required to confirm that subsurface process and drain lines were not breached over the operating life of the station.

Prompt dismantling of site structures is clearly the most appropriate and cost-effective option. It is unreasonable to anticipate that these structures would be repaired and preserved after the radiological contamination is removed. The cost to dismantle site structures with a work force already mobilized on site is more efficient than if the process were deferred. Site facilities quickly degrade without maintenance, adding additional expense and creating potential hazards to the public as well as to future workers. Abandonment creates a breeding ground for vermin infestation as well as other biological hazards.

This cost study presumes that non-essential structures and site facilities are dismantled as a continuation of the decommissioning activity. Foundations and exterior walls are removed to a nominal depth of three feet below grade. The three-foot depth allows for the placement of gravel for drainage, as well as topsoil, so that vegetation can be established for erosion control. Site areas affected by the dismantling activities are restored and the plant area graded as required to prevent ponding and inhibit the refloating of subsurface materials.

Non-contaminated concrete rubble produced by demolition activities is processed to remove reinforcing steel and miscellaneous embedments. The processed material is then used on site to backfill foundation voids. Excess non-contaminated materials are trucked to an off-site area for recycling and reuse, *e.g.*, for road beds.

2.1.4 ISFSI Operations and Decommissioning

The ISFSI will be licensed for independent operation (10 CFR §72, Specific License) following the termination of the §50 operating licenses. Assuming the DOE starts accepting fuel in 2015, transfer of spent fuel from the ISFSI is anticipated to begin in 2016, and continue through the year 2053.

At the conclusion of the spent fuel transfer process, the ISFSI will be decommissioned. The Commission will terminate the §72 license if it determines that the remediation of the ISFSI has been performed in accordance with an ISFSI license termination plan and that the final radiation survey and associated documentation demonstrate that the facility is suitable for release. Once the requirements are satisfied, the NRC can terminate the license for the ISFSI.

The assumed design for the ISFSI is based upon the use of a multi-purpose canister and a concrete overpack for pad storage. For purposes of this cost analysis, it is assumed that once the inner canisters containing the spent fuel assemblies have been removed, any required decontamination performed on the overpacks (some minor activation is assumed), and the license for the facility terminated, the overpacks can be dismantled using conventional techniques for the demolition of reinforced concrete. The concrete storage pad is then removed and the area regraded.

2.2 SAFSTOR

The NRC defines SAFSTOR 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." The facility is left intact (during the dormancy period), with structures maintained in a sound condition. Systems that are not required to support the spent fuel pools or site surveillance and security are drained, de-energized, and secured. Minimal cleaning/removal of loose contamination and/or fixation and sealing of remaining contamination is performed. Access to contaminated areas is secured to provide controlled access for inspection and maintenance.

The engineering and planning requirements are similar to those for the DECON alternative, although a shorter time period is expected for these

activities due to the more limited work scope. Site preparations are also similar to those for the DECON alternative. However, with the exception of the required radiation surveys and site characterizations, the mobilization and preparation of site facilities is less extensive.

2.2.1 Period 1 - Preparations

Preparations for long-term storage include the planning for permanent defueling of the reactor, revision of technical specifications appropriate to the operating conditions and requirements, a characterization of the facility and major components, and the development of the PSDAR.

The process of placing the plant in safe-storage includes, but is not limited to, the following activities:

- Isolation of the spent fuel storage services and fuel handling systems so that safe-storage operations may commence on the balance of the plant. This activity may be carried out by plant personnel in accordance with existing operating technical specifications. Activities are scheduled around the fuel handling systems to the greatest extent possible.

- Expansion of the ISFSI and transfer of the spent fuel from the storage pools to the DOE and ISFSI pad for interim storage, following the minimum required cooling period in the spent fuel pools.

- Draining and de-energizing of the non-contaminated systems not required to support continued site operations or maintenance.

- Disposing of contaminated filter elements and resin beds not required for processing wastes from layup activities for future operations.

- Draining of the reactor vessel, with the internals left in place and the vessel head secured.

- Draining and de-energizing non-essential, contaminated systems with decontamination as required for future maintenance and inspection.

- Preparing lighting and alarm systems whose continued use is required; de-energizing portions of fire protection, electric power, and HVAC systems whose continued use is not required.

- Cleaning of the loose surface contamination from building access pathways.

- Performing an interim radiation survey of plant, posting warning signs where appropriate.

- Erecting physical barriers and/or securing all access to radioactive or contaminated areas, except as required for inspection and maintenance.

- Installing security and surveillance monitoring equipment and relocating security fence around secured structures, as required.

2.2.2 Period 2 - Dormancy

The second phase identified by the NRC in its rule addresses licensed activities during a storage period and is applicable to the dormancy phases of the deferred decommissioning alternatives. Dormancy activities include a 24-hour security force, preventive and corrective maintenance on security systems, area lighting, general building maintenance, heating and ventilation of buildings, routine radiological inspections of contaminated structures, maintenance of structural integrity, and a site environmental and radiation monitoring program. Resident maintenance personnel perform equipment maintenance, inspection activities, routine services to maintain safe conditions, adequate lighting, heating, and ventilation, and periodic preventive maintenance on essential site services.

An environmental surveillance program is carried out during the dormancy period to ensure that releases of radioactive material to the environment are prevented and/or detected and controlled. Appropriate emergency procedures are established and initiated for potential releases that exceed prescribed limits. The environmental surveillance program constitutes an abbreviated version of the program in effect during normal plant operations.

Security during the dormancy period is conducted primarily to prevent unauthorized entry and to protect the public from the consequences of its own actions. The security fence, sensors, alarms, and other surveillance equipment provide security. Fire and radiation alarms are also monitored and maintained.

Consistent with the DECON scenario, the spent fuel storage pools are emptied within 5½ years of the cessation of operations. The transfer of the spent fuel from the ISFSI to a DOE facility continues throughout the dormancy period until completed in 2053. Once emptied, the ISFSI is secured for storage and decommissioned along with the power block structures in Period 4.

After an optional period of storage (such that license termination is accomplished within 60 years of final shutdown), it is required that the licensee submit an application to terminate the license, along with an LTP (described in Section 2.1.2), thereby initiating the third phase.

2.2.3 Periods 3 and 4 - Delayed Decommissioning

Prior to the commencement of decommissioning operations, preparations are undertaken to reactivate site services and prepare for decommissioning. Preparations include engineering and planning, a detailed site characterization, and the assembly of a decommissioning management organization. Final planning for activities and the writing of activity specifications and detailed procedures are also initiated at this time.

Much of the work in developing a termination plan is relevant to the development of the detailed engineering plans and procedures. The activities associated with this phase and the follow-on decontamination and dismantling processes are detailed in Sections 2.1.1 and 2.1.2. The primary difference between the sequences anticipated for the DECON and this deferred scenario is the absence, in the latter, of any constraint on the availability of the fuel storage facilities for decommissioning.

Variations in the length of the dormancy period are expected to have little effect upon the quantities of radioactive wastes generated from system and structure removal operations. Given the levels of radioactivity and spectrum of radionuclides expected from fifty to sixty years of plant operation, no plant process system identified as being

contaminated upon final shutdown will become releasable due to the decay period alone, *i.e.*, there is no significant reduction in the waste generated from the decommissioning activities. However, due to the lower activity levels, a greater percentage of the waste volume can be designated for off-site processing and recovery.

The delay in decommissioning also yields lower working area radiation levels. As such, the estimate for this delayed scenario incorporates reduced ALARA controls for the SAFSTOR's lower occupational exposure potential.

Although the initial radiation levels due to ^{60}Co will decrease during the dormancy period, the internal components of the reactor vessel will still exhibit sufficiently high radiation dose rates to require remote sectioning under water due to the presence of long-lived radionuclides such as ^{94}Nb, ^{59}Ni, and ^{63}Ni. Therefore, the dismantling procedures described for the DECON alternative would still be employed during this scenario. Portions of the biological shield will still be radioactive due to the presence of activated trace elements with long half-lives (^{152}Eu and ^{154}Eu). Decontamination will require controlled removal and disposal. It is assumed that radioactive corrosion products on inner surfaces of piping and components will not have decayed to levels that will permit unrestricted use or allow conventional removal. These systems and components will be surveyed as they are removed and disposed of in accordance with the existing radioactive release criteria.

2.2.4 Period 5 - Site Restoration

Following completion of decommissioning operations, site-restoration activities can begin. Dismantling, as a continuation of the decommissioning process, is clearly the most appropriate and cost-effective option, as described in Section 2.1.3. The basis for the dismantling cost in this scenario is consistent with that described for DECON, presuming the removal of structures and site facilities to a nominal depth of three feet below grade and the limited restoration of the site.

3. COST ESTIMATE

The cost estimates prepared for decommissioning Turkey Point consider the unique features of the site, including the NSSS, power generation systems, support services, site buildings, and ancillary facilities. The basis of the estimates, including the sources of information relied upon, the estimating methodology employed, site-specific considerations, and other pertinent assumptions, is described in this section.

3.1 BASIS OF ESTIMATE

The estimates were developed with site-specific, technical information from an evaluation prepared for FPL in 1999.[16] The information was reviewed for the current analysis and updated as deemed appropriate. The site-specific considerations and assumptions used in the previous evaluation were also revisited. Modifications were incorporated where new information was available or experience from ongoing decommissioning programs provided viable alternatives or improved processes.

3.2 METHODOLOGY

The methodology used to develop the estimates follows the basic approach originally presented in the AIF/NESP-036 study report, "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates,"[17] and the DOE "Decommissioning Handbook."[18] These documents present a unit factor method for estimating decommissioning activity costs, which simplifies the estimating 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 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.[19]

This analysis reflects lessons learned from TLG's involvement in the Shippingport Station Decommissioning Project, 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, Oyster Creek, 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.

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. Appendix A presents the detailed development of a typical unit factor. Appendix B provides the values contained within one set of factors developed for this analysis.

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 were assigned to each unique set of unit factors, commensurate with the inefficiencies associated with working in confined, hazardous environments. The ranges used for the WDFs are as follows:

- Access Factor 10% to 20%
- Respiratory Protection Factor 10% to 50%
- Radiation/ALARA Factor 10% to 40%
- Protective Clothing Factor 10% to 30%
- Work Break Factor 8.33%

The factors and their associated range of values were developed in conjunction with the AIF/NESP-036 study. The application of the factors is discussed in more detail in that publication.

Scheduling Program Durations

The unit factors, adjusted by the WDFs as described above, are applied against the inventory of materials to be removed in the radiologically controlled areas. The resulting man-hours, or crew-hours, are used in the development of the decommissioning program schedule, using resource loading and event sequencing considerations. The scheduling of conventional removal and dismantling activities are based upon productivity information available from the "Building Construction Cost Data" publication.

An activity duration critical path is used to determine the total decommissioning program schedule. The schedule is relied upon in

calculating the carrying costs, which include program management, administration, field engineering, equipment rental, and support services such as quality control and security. This systematic approach for assembling decommissioning estimates ensures a high degree of confidence in the reliability of the resulting costs.

3.3 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.

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 expenses.

3.3.1 Contingency

The activity- and period-dependent costs are combined to develop the total decommissioning cost. A contingency is then applied on a line-item basis, using one or more of the contingency types listed in the AIF/NESP-036 study. "Contingencies" are defined in the American Association of Cost Engineers "Project and Cost Engineers' Handbook[20] as "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." The cost elements in this analysis are based upon ideal conditions and maximum efficiency; therefore, consistent with industry practice, a contingency factor has been applied. In the AIF/NESP-036 study, the types of unforeseeable events that are likely to occur in decommissioning are discussed and guidelines are provided for percentage contingency in each category. It should be noted that contingency, as used in this analysis, does not account for price

escalation and inflation in the cost of decommissioning over the remaining operating life of the station.

The use and role of contingency within decommissioning estimates is not a "safety factor issue." Safety factors provide additional security and address situations that may never occur. Contingency funds are expected to be fully expended throughout the program. They also provide assurance that sufficient funding is available to accomplish the intended tasks. An estimate without contingency, or from which contingency has been removed, can disrupt the orderly progression of events and jeopardize a successful conclusion to the decommissioning process.

For example, the most technologically challenging task in decommissioning a commercial nuclear station is the disposition of the reactor vessel and internal components, now highly radioactive after a lifetime of exposure to core activity. The disposition of these components forms the basis of the critical path (schedule) for decommissioning operations. Cost and schedule are interdependent, and any deviation in schedule has a significant impact on cost for performing a specific activity.

Disposition of the reactor vessel internals involves the underwater cutting of complex components that are highly radioactive. Costs are based upon optimum segmentation, handling, and packaging scenarios. The schedule is primarily dependent upon the turnaround time for the heavily shielded shipping casks, including preparation, loading, and decontamination of the containers for transport. The number of casks required is a function of the pieces generated in the segmentation activity, a value calculated on optimum performance of the tooling employed in cutting the various subassemblies. The expected optimization, however, may not be achieved, resulting in delays and additional program costs. For this reason, contingency must be included to mitigate the consequences of the expected inefficiencies inherent in this complex activity, along with related concerns associated with the operation of highly specialized tooling, field conditions, and water clarity.

Contingency funds are an integral part of the total cost to complete the decommissioning process. Exclusion of this component puts at risk a successful completion of the intended tasks and, potentially,

subsequent related activities. For this study, TLG examined the major activity-related problems (decontamination, segmentation, equipment handling, packaging, transport, and waste disposal) that necessitate a contingency. Individual activity contingencies ranged from 10% to 75%, depending on the degree of difficulty judged to be appropriate from TLG's actual decommissioning experience. The contingency values used in this study are as follows:

Decontamination	50%
Contaminated Component Removal	25%
Contaminated Component Packaging	10%
Contaminated Component Transport	15%
Low-Level Radioactive Waste Disposal	25%
Reactor Segmentation	75%
NSSS Component Removal	25%
Reactor Waste Packaging	25%
Reactor Waste Transport	25%
Reactor Vessel Component Disposal	50%
GTCC Disposal	15%
Non-Radioactive Component Removal	15%
Heavy Equipment and Tooling	15%
Supplies	25%
Engineering	15%
Energy	15%
Characterization and Termination Surveys	30%
Construction	15%
Taxes and Fees	10%
Insurance	10%
Staffing	15%

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 each estimate. For example, the composite contingency values reported for the DECON alternative are 18.5% and 18.4% for Units 3 and 4, respectively. Values for the SAFSTOR alternative are delineated within the detailed cost tables in Appendix D.

3.3.2 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 proposed decommissioning plans due to intervention, public participation in local community meetings, 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 such, *e.g.*, the start and rate of acceptance of spent fuel by the DOE.

- Pricing changes for basic inputs, such as labor, energy, materials, and burial. Some of these inputs may vary slightly, *e.g.* -10% to +20%; burial could vary from -50% to +200% or more.

It has been TLG's experience that the results of a risk analysis, when compared with the base case estimate for decommissioning, indicate that the chances of the base decommissioning estimate's being too high is a low probability, and the chances that the estimate is too low is a higher probability. This is mostly due to the pricing uncertainty for low-level radioactive waste burial, and to a lesser extent due to schedule increases from changes in plant conditions and to pricing variations in the cost of labor (both craft and staff). This cost study, however, does not add any additional cost to the estimate for financial risk, since there is insufficient historical data from which to project future liabilities. Consequently, the areas of uncertainty or risk are revisited periodically and addressed through repeated revisions or updates of the base estimate.

3.4 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 impact of the considerations identified below is included in this cost study.

3.4.1 Spent Fuel Management

The cost to dispose of spent fuel generated from plant operations is not reflected within the estimates to decommission the Turkey Point units. Ultimate disposition of the spent fuel is within the province of the DOE's Waste Management System, as defined by the NWPA. As such, the disposal cost is financed by a 1 mill/kWhr surcharge paid into the DOE's waste fund during operations. However, the NRC requires licensees to establish a program to manage and provide funding for the management of all irradiated fuel at the reactors until title of the fuel is transferred to the Secretary of Energy. This funding requirement is fulfilled through inclusion of certain high-level waste cost elements within the estimate, as described below.

The total inventory of assemblies that will require handling during decommissioning is based upon several assumptions. The pickup of commercial fuel is assumed to begin in the year 2015 and will proceed on an oldest fuel first basis. The maximum rate at which the fuel is removed from the commercial sites is based upon a maximum annual capacity at the geologic repository of 3,000 metric tons of uranium

(MTU). Any delay in the startup of the repository or decrease in the rate of acceptance will correspondingly prolong the transfer process and result in the fuel remaining at the site longer.

The ISFSI will continue to operate until such time that the transfer of spent fuel to the DOE can be completed. Assuming that the DOE commences repository operation in 2015, fuel is projected to be removed from the Turkey Point site by the year 2053.

Following the cessation of plant operations, operation and maintenance costs for the storage facilities (the ISFSI and the pools) incurred during the decommissioning period are included within the estimates and address the cost for staffing the facilities, as well as security, insurance, and licensing fees. The estimates include the costs to purchase, load, and transfer the fuel storage canisters. Costs are also provided for the final disposition of the facilities once the transfer is complete.

Repository Startup

Operation of the DOE's yet-to-be constructed geologic repository is contingent upon the review and approval of the facility's license application by the NRC, the successful resolution of pending litigation, and the development of a national transportation system. For comparison, the Private Fuel Storage consortium submitted an application for an interim storage facility in 1997. It was eight years before the NRC issued a license for the facility. With a more technically complex and politically sensitive application for permanent disposal, it is not unreasonable to expect that NRC approval to construct the repository at Yucca Mountain will require at least as long a review period. Construction would therefore begin sometime around the year 2010, at the earliest. Therefore, the spent fuel management plan described in this section is predicated upon the DOE initiating the pickup of commercial fuel in the year 2015. This timetable is consistent with the findings of an evaluation issued to Congress by the Government Accounting Office.[21]

Spent Fuel Management Model

The ability to complete the decommissioning is highly dependent upon when the DOE is assumed to remove spent fuel from the site. DOE's

repository program assumes that spent fuel will be accepted for disposal from the nation's commercial nuclear plants in the order (the "queue") in which it was removed from service ("oldest fuel first").[22] The site residence schedule for the spent fuel is based upon the DOE's most recently published annual acceptance rates of 400 MTU/year for year 1, 600 MTU/year for year 2, 1200 MTU/year for year 3, 2000 MTU/year for year 4, and 3000 MTU/year for year 5 and beyond.[23]

The spent fuel acceptance allocations for the St. Lucie and Turkey Point nuclear units were combined and redistributed to the two sites during the decommissioning time period. Once the pools are off-loaded at Turkey Point, allocations are used to reduce the inventory of assemblies at the St. Lucie site. Pickup at the Turkey Point site resumes after the St. Lucie storage pools are emptied.

Storage Canister Design

An ISFSI, constructed to maintain full-core discharge capability in the spent fuel pools during operations, is expanded to support decommissioning. Only the capital cost to expand the ISFSI is included within the estimates along with the associated fuel transfer equipment needed once the storage pools are decommissioned. The design and capacity of the ISFSI is based upon the Holtec HI-STORM system, with a 32 fuel assembly capacity. A unit cost of $750,000 is used for pricing the internal multi-purpose canister (MPC) and the concrete overpack for the 27 modules required to support decommissioning. For fuel transferred directly from the pool to the DOE, the DOE is assumed to provide the MPC at no additional cost to the owner.

Canister Loading and Transfer

An average cost of $145,000 is used for the labor and equipment to load and transfer each spent fuel canister from the storage pools to the DOE, exclusive of any additional campaign costs. A cost of $290,000 is used for the loading and transfer of the fuel to the ISFSI. Campaign costs for the eight campaigns are $175,000 and $350,000 for the DOE and ISFSI transfers, respectively. An additional cost of $15,000 is used to estimate the cost to transfer the fuel canisters from the ISFSI into a DOE transport cask.

Operations and Maintenance

An annual cost (excluding labor) of approximately $1,000,000 and $75,000 are used for operation and maintenance of the spent fuel pools and the ISFSI, respectively. Pool operations are expected to continue approximately 5½ years after the cessation of operations. ISFSI operating costs are based upon a 20 year period of operations following the cessation of Unit 4 operations.

ISFSI Design Considerations

A multi-purpose (storage and transport) dry shielded storage canister with a vertical, reinforced concrete storage silo is used as a basis for the cost analysis. Approximately 50% of the silos 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. Approximately 10% of the concrete and steel is assumed to be removed from the overpacks for controlled disposal. The cost of the disposition of this material, as well as the demolition of the ISFSI facility, is included in the estimate.

GTCC

The dismantling of the reactor internals will generate 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 Commission for Class C radioactive waste (GTCC). 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 for disposing of GTCC or a schedule for acceptance. As such, the estimates to decommission the Turkey Point reactors include an allowance for the disposition of GTCC material.

For purposes of this study, GTCC is packaged in the same canisters used to store spent fuel. Disposal costs are based upon a cost equivalent to that envisioned for the spent fuel. It is not anticipated that the DOE would accept this waste prior to completing the transfer

of spent fuel. Therefore, until such time the DOE is ready to accept GTCC waste, it is reasonable to assume that this material would remain in storage with the spent fuel in the ISFSI at the Turkey Point site (for the DECON alternative). In the SAFSTOR scenario, the GTCC material is 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.

3.4.2 Reactor Vessel and Internal Components

The NSSS (reactor vessel and reactor coolant system components) will be decontaminated using chemical agents prior to the start of cutting operations (DECON alternative only). A decontamination factor (average reduction) of 10 is assumed for the process.

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 the reactor vessel and internal components can provide 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. 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 this option will be available when the Turkey Point units cease 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, the study assumes the reactor vessel will require segmentation, as a bounding condition.

3.4.3 Primary System Components

The following discussion deals with the removal and disposition of the steam generators, but the techniques involved are also applicable to other large components, such as heat exchangers, component coolers, and the pressurizer. The steam generators' size and weight, as well as their location within the reactor building, will ultimately determine the removal strategy.

A trolley 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 laydown 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 dolly. 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 processing and storage area.

The generators are disassembled on-site with the steam domes and lightly contaminated subassemblies designated for off-site recycling. For cost estimating purposes, the more highly contaminated lower assembly containing the tube sheet and tube bundle are packaged for

direct disposal, although additional processing may be an option. The interior volume is filled with low-density cellular concrete for stabilization of the internal contamination. Each component is then loaded onto a barge for transport to a railhead. The steam generators are then transferred to a dedicated train for transport to the disposal facility.

The lower assemblies of six retired steam generators currently stored at the site will be removed from their storage facility and disposed of along with the installed generators.

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) is dropped below the nozzle zone. The piping is boxed and transported by shielded van. The reactor coolant pumps and motors are lifted out intact, packaged, and transported for processing and/or disposal.

3.4.4 Main Turbine and Condenser

The main turbine will be dismantled using conventional maintenance procedures. The turbine rotors and shafts will be removed to a laydown area. The lower turbine casings will be removed from their anchors by controlled demolition. The main condensers will also be disassembled and moved to a laydown area. Clean material is released on site as scrap metal; radioactive or potentially radioactive 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 will be packaged and readied for transport in accordance with the intended disposition.

3.4.5 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.[24] The contaminated material will be packaged in Industrial Packages (IP 1, 2, or 3, as defined in subpart 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 §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.

Transport of the highly activated metal, produced in the segmentation of the reactor vessel and internal components, will be 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 was 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.

The transport of large intact components, *e.g.*, large heat exchangers and other oversized components will be by a combination of truck, rail, barge, and/or multi-wheeled transporter.

Transportation costs for material requiring controlled disposal are based upon the mileage to the Envirocare facility in Clive, Utah. Memphis, Tennessee, is used as the destination for off-site processing. Transportation costs are estimated using published tariffs from Tri-State Motor Transit.[25]

3.4.6 Low-Level Radioactive Waste Disposal

To the greatest extent practical, metallic material generated in the decontamination and dismantling processes is treated to reduce the total volume requiring controlled disposal. The treated material, meeting the regulatory and/or site release criterion, is released as scrap, requiring no further cost consideration. Conditioning and recovery of the waste stream is performed off site at a licensed processing center.

The Envirocare facility is used as a proxy for the future disposal of decommissioning waste. Since Envirocare does not have a license for Class B or C material, the Barnwell rates are also used, as appropriate. Surcharges are added for the highly activated components, *e.g.*, generated in the segmentation of the reactor vessel.

3.4.7 Site Conditions Following Decommissioning

The NRC will terminate (or amend) the site licenses if it determines that site remediation has been performed in accordance with the license termination plan, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release. The NRC's involvement in the decommissioning process will end at this point. Building codes and environmental regulations will dictate the next step in the decommissioning process, as well as the owner's own future plans for the site.

Non-essential structures or buildings severely damaged in decontamination process are removed to a nominal depth of three feet below grade. Concrete rubble generated from demolition activities is processed and made available as clean fill. The excavations will be regraded such that the power block area will have a final contour consistent with adjacent surroundings.

The Intake and Discharge canals remain in place. Circulating water structures are removed and the canal bank restored.

3.5 ASSUMPTIONS

The following are the major assumptions made in the development of the estimates for decommissioning the site.

3.5.1 Estimating Basis

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.

3.5.2 Labor Costs

The craft labor required to decontaminate and dismantle the nuclear units will be acquired through standard site contracting practices. The current cost of labor at the site is used as an estimating basis. Costs for site administration, operations, construction, and maintenance personnel are based upon average salary information provided by FPL or from comparable industry information.

FPL will hire a Decommissioning Operations Contractor (DOC) to manage the decommissioning. The owner will provide site security, radiological health and safety, quality assurance and overall site administration during the decommissioning and demolition phases. Contract personnel will provide engineering services, *e.g.*, for preparing the activity specifications, work procedures, activation, and structural analyses, under the direction of FPL.

3.5.3 Design Conditions

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 quantities of long-lived isotopes (*e.g.*, ^{137}Cs, ^{90}Sr, or transuranics) has been prevented from reaching levels exceeding those that permit the major NSSS components to be shipped under current transportation regulations and disposal requirements.

The curie contents of the vessel and internals at final shutdown are derived from those listed in NUREG/CR-3474.[26] Actual estimates are derived from the curie/gram values contained therein and adjusted for the different mass of the Turkey Point components, projected operating life, and different periods of decay. Additional short-lived isotopes were derived from CR-0130[27] and CR-0672,[28] and benchmarked to the long-lived values from CR-3474.

The control elements are disposed of along with the spent fuel, *i.e.*, there is no additional cost provided for their disposal.

Activation of the reactor building structures is confined to the biological shield. More extensive activation (at very low levels) of the interior structures within containment has been detected at several reactors and the owners have elected to dispose of the affected material at a controlled facility rather than reuse the material as fill

on site or send it to a landfill. The ultimate disposition of the material removed from the reactor building will depend upon the site release criteria selected, as well as the designated end use for the site.

The estimates do not assume the remediation of any significant volume of contaminated soil. However, the remediation and disposal of 59,300 cubic feet of contaminated soil/grass like material is included. This assumption may be affected by continued plant operations and/or future regulatory actions, such as the development of site-specific release criteria.

3.5.4 General

Transition Activities

Existing warehouses will be cleared of non-essential material and remain for use by FPL and its subcontractors during decommissioning. The plant's operating staff will perform 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, *i.e.*, the estimates do not address the disposition of any legacy wastes; the disposal of operating wastes during this initial period is not considered a decommissioning expense.

Scrap and Salvage

The existing plant equipment is considered obsolete and suitable for scrap as deadweight quantities only. FPL 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 some buyers wanted equipment stripped down to very specific requirements before they would consider purchase. This required expensive rework after the equipment had been removed from its

installed location. Since placing a salvage value on this machinery and equipment would be speculative, and the value would be small in comparison to the overall decommissioning expenses, 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. For example, the recovery of copper from electrical cabling may require the removal and disposition of any contaminated insulation, an added expense. With a volatile market, the potential profit margin in scrap recovery is highly speculative, regardless of the ability to free release this material. This assumption is an implicit recognition of scrap value in the disposal of clean metallic waste at no additional cost to the project.

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

Energy

For estimating purposes, the plant is assumed to be de-energized, with the exception of those facilities associated with spent fuel storage. Replacement power costs are used for the cost of energy consumption 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 based upon the guidance and the limits for coverage defined in the NRC's proposed rulemaking "Financial Protection

Requirements for Permanently Shutdown Nuclear Power Reactors."[29] NRC's financial protection requirements are based on various reactor (and spent fuel) configurations.

Taxes

Property taxes continue to be included as a site operating cost during decommissioning. Assessments are reduced over time to an annual payment of one million dollars. This assessment (split 50/50 between the units) continues to be applied until the site is released for unrestricted use.

Site Modifications

The perimeter fence and in-plant security barriers will be moved, as appropriate, to conform to the Site Security Plan in force during the various stages of the project.

3.6 COST ESTIMATE SUMMARY

Schedules of expenditures are provided for each scenario in Tables 3.1 through 3.4. Decommissioning costs are reported in the year of projected expenditure; however, the values are provided in thousands of 2004 dollars. Costs are not inflated, escalated, or discounted over the period of expenditure. The annual expenditures are based upon the detailed activity costs reported in Appendix C and D, along with the timelines presented in Section 4.

As discussed in Section 3.4.2, it is not anticipated that the DOE would accept the GTCC waste prior to completing the transfer of spent fuel. Therefore, for the DECON scenario, GTCC disposal is shown in the final year of ISFSI operation, *i.e.*, 2053. In SAFSTOR, the fuel is removed prior to the start of reactor vessel dismantling. The disposal of the GTCC, in this scenario, is assumed to be concurrent with the disposal of the other reactor internals. While designated for disposal at the geologic repository along with the spent fuel, GTCC waste is still classified as low-level radioactive waste and, as such, included as a "License Termination" expense in the detailed activity cost tables. It should also be noted that the GTCC costs are assigned to the "Other" category, rather than "Burial," since the disposal charges for GTCC are assumed to be based upon cost recovery, consistent with spent fuel, in contrast to the market pricing offered by commercial low-level radioactive waste facilities.

TABLE 3.1
SCHEDULE OF ANNUAL EXPENDITURES
DECON, UNIT 3
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other *	Total
2032	18,779	859	3	24	2,501	22,166
2033	49,874	10,941	1,231	4,638	5,663	72,347
2034	46,303	14,274	5,326	25,989	4,709	96,600
2035	33,154	8,434	2,596	13,873	4,646	62,703
2036	24,381	4,574	547	4,618	4,659	38,778
2037	24,314	4,561	545	4,606	4,646	38,672
2038	11,494	2,141	402	3,064	2,928	20,028
2039	9,546	854	5	37	2,473	12,915
2040	8,690	3,638	1	7	1,460	13,797
2041	7,716	3,991	0	0	1,266	12,973
2042	1,288	300	0	0	1,212	2,799
2043	974	119	0	0	1,209	2,302
2044	977	120	0	0	1,212	2,309
2045	974	119	0	0	1,209	2,302
2046	974	119	0	0	1,209	2,302
2047	974	119	0	0	1,209	2,302
2048	977	120	0	0	1,212	2,309
2049	974	119	0	0	1,209	2,302
2050	974	119	0	0	1,209	2,302
2051	974	119	0	0	1,209	2,302
2052	977	120	0	0	1,212	2,309
2053	973	167	0	3	11,612	12,756
2054	535	885	50	375	1,321	3,167
	246,796	56,814	10,705	57,234	61,196	432,745

* Includes GTCC disposal expenditures in year 2053

TABLE 3.2
SCHEDULE OF ANNUAL EXPENDITURES
DECON, UNIT 4
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other *	Total
2033	27,262	1,420	5	38	4,010	32,735
2034	47,461	12,438	2,410	15,964	5,768	84,041
2035	48,269	14,667	9,729	33,670	4,705	111,040
2036	41,810	12,460	3,533	15,892	4,706	78,401
2037	38,872	11,463	857	8,191	4,688	64,070
2038	36,803	11,699	808	7,451	4,378	61,140
2039	26,071	5,740	251	1,942	2,927	36,930
2040	17,140	5,940	1	7	1,469	24,556
2041	16,047	6,617	0	0	1,274	23,939
2042	1,683	443	0	0	1,220	3,346
2043	981	141	0	0	1,218	2,340
2044	984	142	0	0	1,221	2,347
2045	981	141	0	0	1,218	2,340
2046	981	141	0	0	1,218	2,340
2047	981	141	0	0	1,218	2,340
2048	984	142	0	0	1,221	2,347
2049	981	141	0	0	1,218	2,340
2050	981	141	0	0	1,218	2,340
2051	981	141	0	0	1,218	2,340
2052	984	142	0	0	1,221	2,347
2053	980	188	0	3	11,621	12,792
2054	535	885	50	375	1,324	3,170
	312,754	85,373	17,644	83,533	60,277	559,581

* Includes GTCC disposal expenditures in year 2053

TABLE 3.3
SCHEDULE OF ANNUAL EXPENDITURES
SAFSTOR, UNIT 3
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other	Total
2032	15,309	675	3	24	2,501	18,512
2033	38,662	8,139	517	1,367	5,278	53,962
2034	7,539	1,276	72	217	3,615	12,720
2035	6,119	1,159	6	52	3,538	10,876
2036	6,136	1,162	6	53	3,548	10,906
2037	6,119	1,159	6	52	3,538	10,876
2038	2,076	369	6	52	2,085	4,590
2039	1,866	328	6	52	2,010	4,264
2040	1,871	329	6	53	2,016	4,275
2041	1,866	328	6	52	2,010	4,264
2042	1,866	328	6	52	2,010	4,264
2043	1,866	328	6	52	2,010	4,264
2044	1,871	329	6	53	2,016	4,275
2045	1,866	328	6	52	2,010	4,264
2046	1,866	328	6	52	2,010	4,264
2047	1,866	328	6	52	2,010	4,264
2048	1,871	329	6	53	2,016	4,275
2049	1,866	328	6	52	2,010	4,264
2050	1,866	328	6	52	2,010	4,264
2051	1,866	328	6	52	2,010	4,264
2052	1,871	329	6	53	2,016	4,275
2053	1,865	328	6	52	2,008	4,260
2054	1,218	239	6	52	1,279	2,795
2055	1,218	239	6	52	1,279	2,795
2056	1,221	240	6	53	1,283	2,803
2057	1,218	239	6	52	1,279	2,795
2058	1,218	239	6	52	1,279	2,795
2059	1,218	239	6	52	1,279	2,795
2060	1,221	240	6	53	1,283	2,803
2061	1,218	239	6	52	1,279	2,795
2062	1,218	239	6	52	1,279	2,795
2063	1,218	239	6	52	1,279	2,795
2064	1,221	240	6	53	1,283	2,803
2065	1,218	239	6	52	1,279	2,795
2066	1,218	239	6	52	1,279	2,795

TABLE 3.3 (continued)
SCHEDULE OF ANNUAL EXPENDITURES
SAFSTOR, UNIT 3
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other *	Total
2067	1,218	239	6	52	1,279	2,795
2068	1,221	240	6	53	1,283	2,803
2069	1,218	239	6	52	1,279	2,795
2070	1,218	239	6	52	1,279	2,795
2071	1,218	239	6	52	1,279	2,795
2072	1,221	240	6	53	1,283	2,803
2073	1,218	239	6	52	1,279	2,795
2074	1,218	239	6	52	1,279	2,795
2075	1,218	239	6	52	1,279	2,795
2076	1,221	240	6	53	1,283	2,803
2077	1,218	239	6	52	1,279	2,795
2078	1,218	239	6	52	1,279	2,795
2079	1,218	239	6	52	1,279	2,795
2080	1,221	240	6	53	1,283	2,803
2081	1,218	239	6	52	1,279	2,795
2082	1,218	239	6	52	1,279	2,795
2083	1,218	239	6	52	1,279	2,795
2084	1,221	240	6	53	1,283	2,803
2085	3,140	303	6	52	1,388	4,890
2086	31,067	1,512	17	66	2,932	35,594
2087	41,487	11,049	3,052	13,011	8,732	77,331
2088	33,661	9,614	2,974	13,850	8,893	68,993
2089	22,996	3,089	244	3,133	3,818	33,280
2090	22,996	3,089	244	3,133	3,818	33,280
2091	7,441	840	43	543	2,277	11,143
2092	11,418	2,643	4	29	1,463	15,558
2093	7,582	4,201	0	0	643	12,427
2094	3,469	1,922	0	0	294	5,686
	333,019	64,547	7,494	38,050	128,227	571,337

* Includes GTCC disposal expenditures in years 2087 and 2088

TABLE 3.4
SCHEDULE OF ANNUAL EXPENDITURES
SAFSTOR, UNIT 4
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other	Total
2033	22,903	1,128	5	38	4,008	28,082
2034	30,461	8,390	1,381	4,006	4,946	49,184
2035	3,665	6,431	6	52	3,543	13,697
2036	3,675	6,448	6	53	3,552	13,734
2037	3,665	6,431	6	52	3,543	13,697
2038	3,255	5,066	6	52	3,204	11,583
2039	1,841	356	6	52	2,034	4,290
2040	1,846	357	6	53	2,040	4,302
2041	1,841	356	6	52	2,034	4,290
2042	1,841	356	6	52	2,034	4,290
2043	1,841	356	6	52	2,034	4,290
2044	1,846	357	6	53	2,040	4,302
2045	1,841	356	6	52	2,034	4,290
2046	1,841	356	6	52	2,034	4,290
2047	1,841	356	6	52	2,034	4,290
2048	1,846	357	6	53	2,040	4,302
2049	1,841	356	6	52	2,034	4,290
2050	1,841	356	6	52	2,034	4,290
2051	1,841	356	6	52	2,034	4,290
2052	1,846	357	6	53	2,040	4,302
2053	1,839	356	6	52	2,032	4,286
2054	1,239	246	6	52	1,288	2,831
2055	1,239	246	6	52	1,288	2,831
2056	1,242	247	6	53	1,291	2,839
2057	1,239	246	6	52	1,288	2,831
2058	1,239	246	6	52	1,288	2,831
2059	1,239	246	6	52	1,288	2,831
2060	1,242	247	6	53	1,291	2,839
2061	1,239	246	6	52	1,288	2,831
2062	1,239	246	6	52	1,288	2,831
2063	1,239	246	6	52	1,288	2,831
2064	1,242	247	6	53	1,291	2,839
2065	1,239	246	6	52	1,288	2,831
2066	1,239	246	6	52	1,288	2,831
2067	1,239	246	6	52	1,288	2,831

TABLE 3.4 (continued)
SCHEDULE OF ANNUAL EXPENDITURES
SAFSTOR, UNIT 4
(thousands, 2004 dollars)

Year	Labor	Equipment & Materials	Transportation	Burial	Other *	Total
2068	1,242	247	6	53	1,291	2,839
2069	1,239	246	6	52	1,288	2,831
2070	1,239	246	6	52	1,288	2,831
2071	1,239	246	6	52	1,288	2,831
2072	1,242	247	6	53	1,291	2,839
2073	1,239	246	6	52	1,288	2,831
2074	1,239	246	6	52	1,288	2,831
2075	1,239	246	6	52	1,288	2,831
2076	1,242	247	6	53	1,291	2,839
2077	1,239	246	6	52	1,288	2,831
2078	1,239	246	6	52	1,288	2,831
2079	1,239	246	6	52	1,288	2,831
2080	1,242	247	6	53	1,291	2,839
2081	1,239	246	6	52	1,288	2,831
2082	1,239	246	6	52	1,288	2,831
2083	1,239	246	6	52	1,288	2,831
2084	1,242	247	6	53	1,291	2,839
2085	1,239	246	6	52	1,288	2,831
2086	11,358	683	6	52	2,029	14,129
2087	27,139	3,668	366	7,564	3,050	41,788
2088	43,093	15,154	9,888	29,459	12,743	110,336
2089	34,705	5,426	1,905	9,172	5,294	56,502
2090	33,085	3,582	368	5,377	3,851	46,262
2091	30,746	3,162	294	4,283	3,499	41,983
2092	18,603	3,948	4	29	1,463	24,047
2093	14,760	6,827	1	0	643	22,232
2094	6,753	3,124	0	0	294	10,172
	355,172	92,697	14,542	62,657	127,419	652,488

* Includes GTCC disposal expenditures in year 2088

4. SCHEDULE ESTIMATE

The schedules for the decommissioning scenarios considered in this study follow the sequence presented in the AIF/NESP-036 study, with minor changes to reflect recent experience and site-specific constraints. In addition, the scheduling has been revised to reflect the spent fuel management plans described in Section 3.4.1.

A schedule or sequence of activities is presented in Figure 4.1 for the DECON decommissioning alternative. The schedule is also representative of the work activities identified in the delayed dismantling scenarios, absent any spent fuel constraints. The scheduling sequence assumes that fuel is removed from the spent fuel pools within the first 5½ years after operations cease. The key activities listed in the schedule do not reflect a one-to-one correspondence with those activities in the cost tables, but reflect dividing some activities for clarity and combining others for convenience. The schedule was prepared using the "Microsoft Project 2002" computer software.[30]

4.1 SCHEDULE ESTIMATE ASSUMPTIONS

The schedule reflects the results of a precedence network developed for the site decommissioning activities, *i.e.*, a PERT (Program Evaluation and Review Technique) Software Package. The work activity durations used in the precedence network reflect the actual man-hour estimates from the cost tables, adjusted by stretching certain activities over their slack range and shifting the start and end dates of others. The following assumptions were made in the development of the decommissioning schedule:

- The fuel handling buildings are isolated until such time that all spent fuel has been discharged from the spent fuel pools to the DOE or to the ISFSI. Decontamination and dismantling of the storage pools is initiated once the transfer of spent fuel to the ISFSI or DOE is complete.

- All work (except vessel and internals removal) is performed during an 8-hour workday, 5 days per week, with no overtime. There are eleven paid holidays per year.

- Reactor and internals removal activities are performed by using separate crews for different activities working on different shifts, with a corresponding backshift charge for the second shift.

- Multiple crews work parallel activities to the maximum extent possible, consistent with optimum efficiency, adequate access for cutting, removal and laydown space, and with the stringent safety measures necessary during demolition of heavy components and structures.

- For plant systems removal, the systems with the longest removal durations in areas on the critical path are considered to determine the duration of the activity.

4.2 PROJECT SCHEDULE

The period-dependent costs presented in the detailed cost tables are based upon the durations developed in the schedule for decommissioning. Durations are established between several milestones in each project period; these durations are used to establish a critical path for the entire project. In turn, the critical path duration for each period is used as the basis for determining the period-dependent costs. A second critical path is also shown for the spent fuel cooling period, which determines the release of the fuel handling buildings for final decontamination.

Project timelines are provided in Figures 4.2 and 4.3. Milestone dates are based on shutdown dates for Units 3 and 4 of July 19, 2032 and April 10, 2033, respectively.

FIGURE 4.1

ACTIVITY SCHEDULE

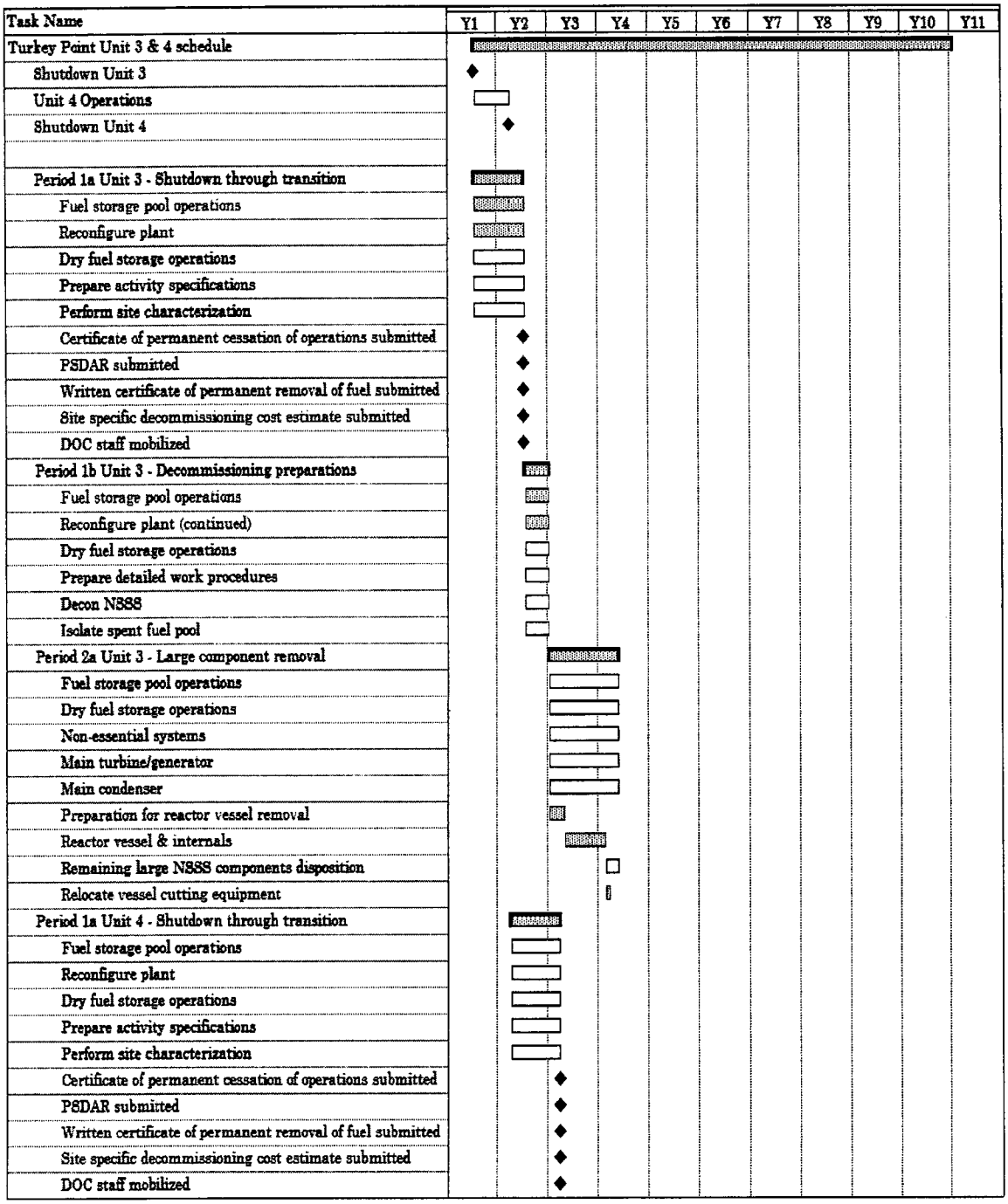


FIGURE 4.1

ACTIVITY SCHEDULE (continued)

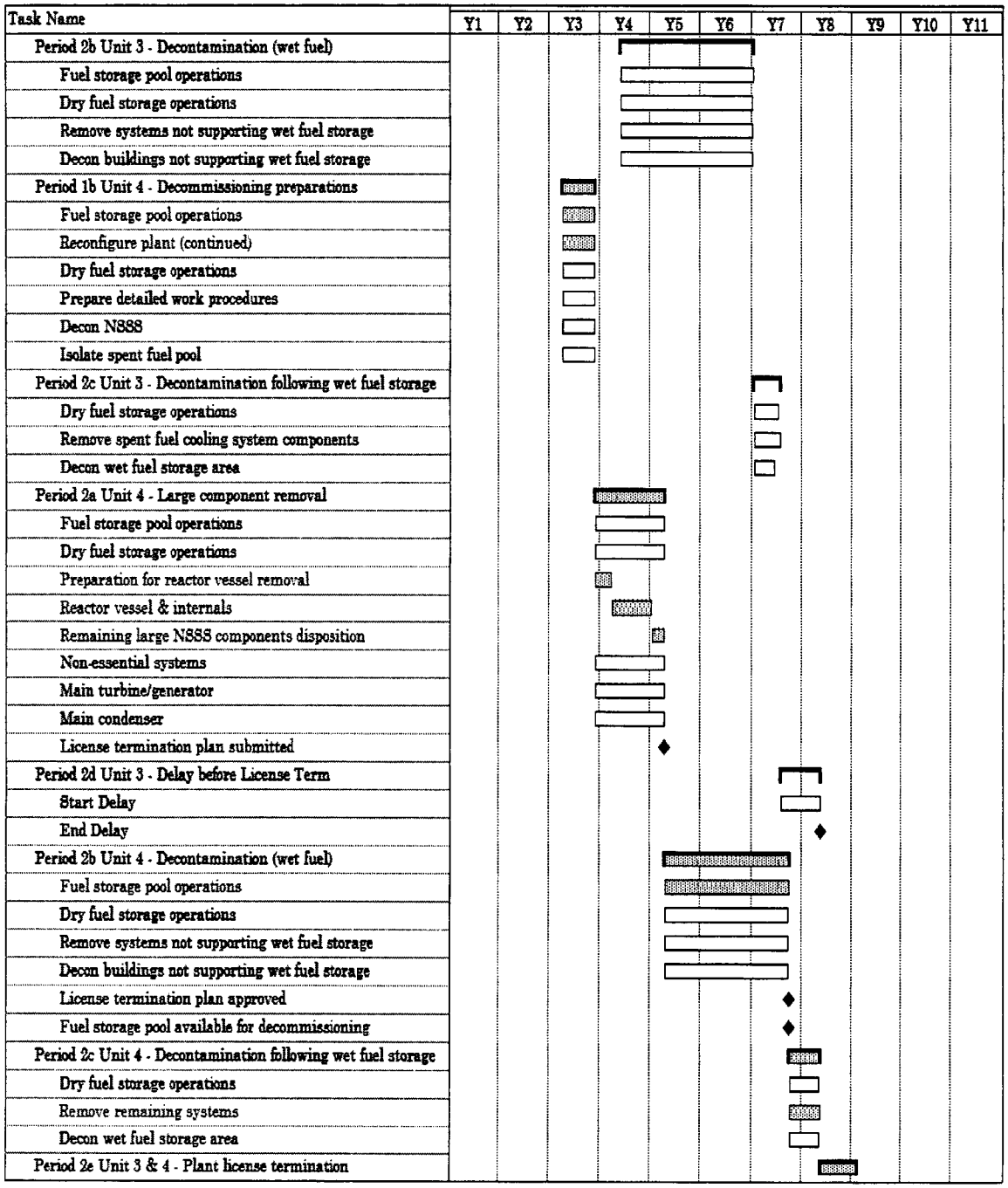


FIGURE 4.1

ACTIVITY SCHEDULE (continued)

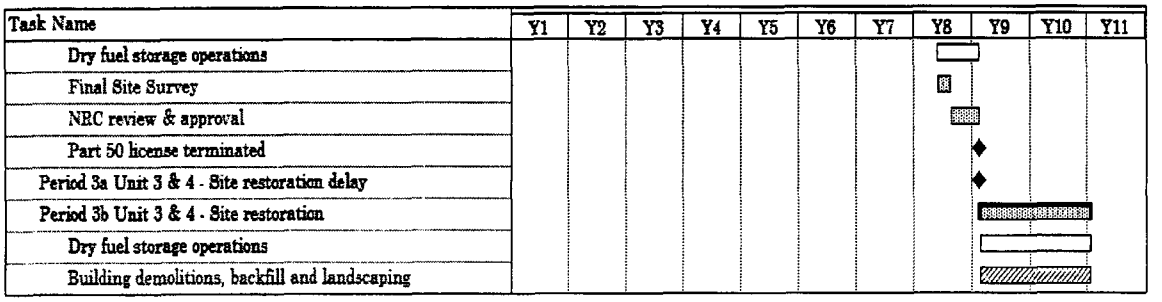


FIGURE 4.2
DECOMMISSIONING TIMELINE
DECON
(not to scale)

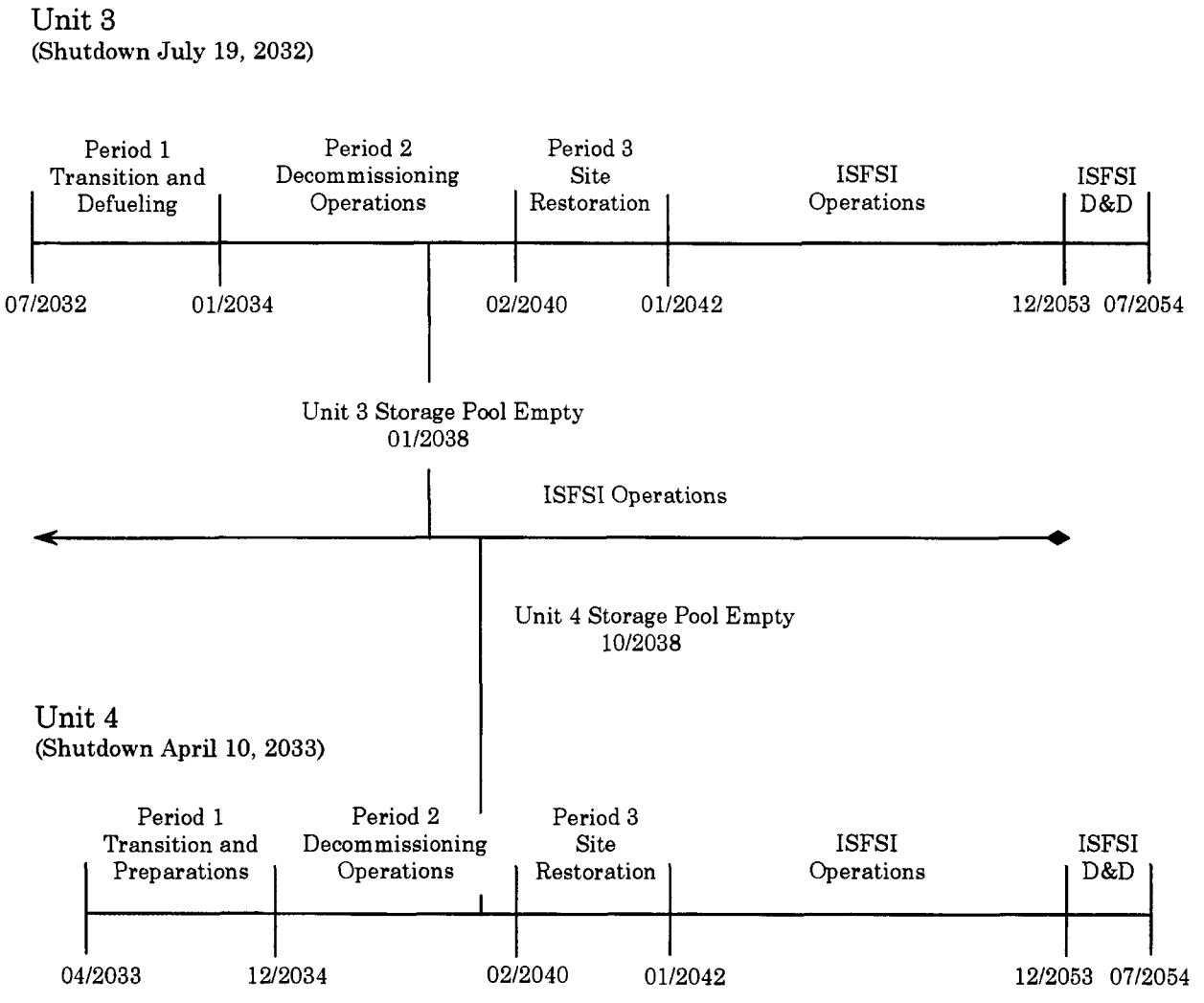
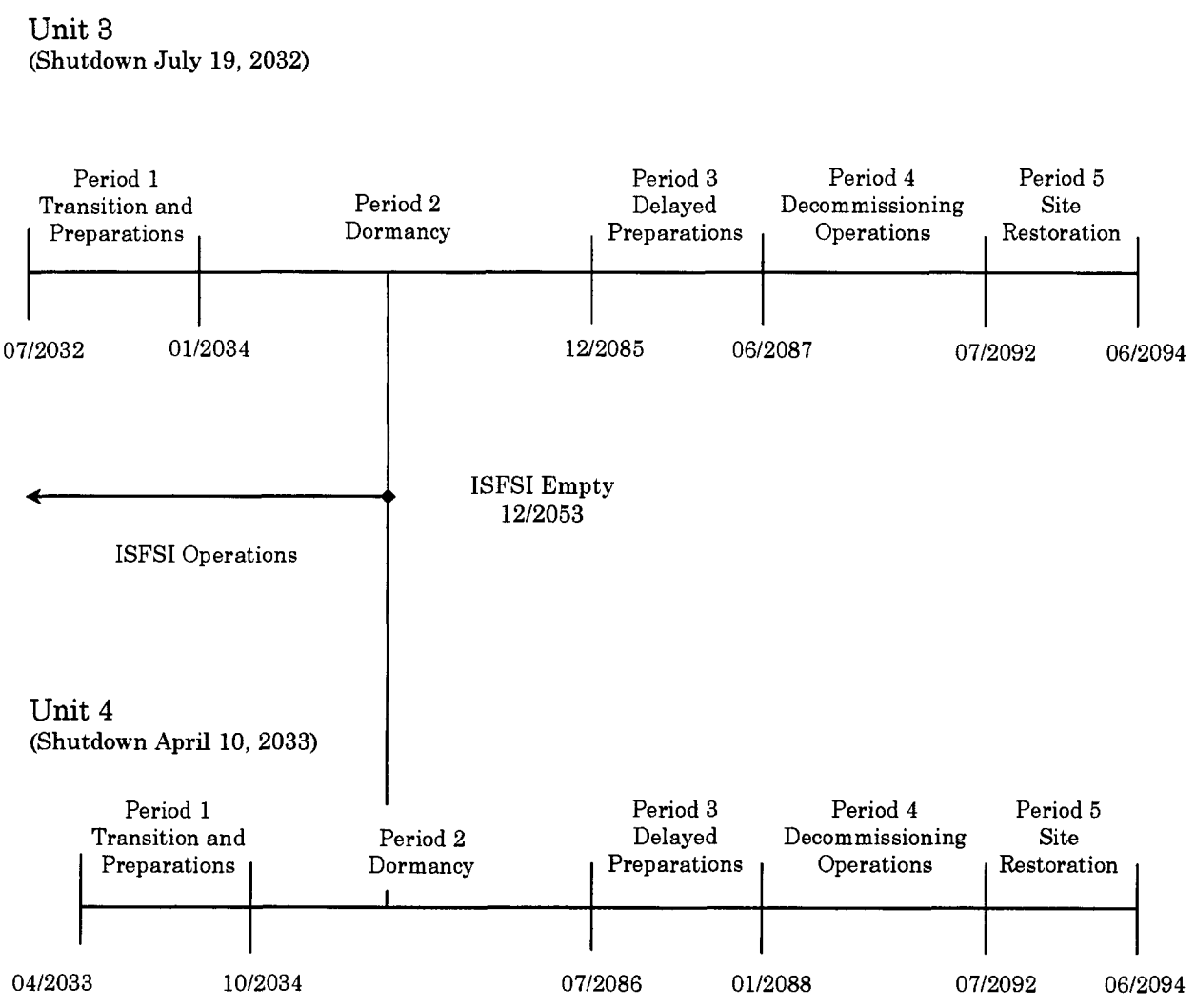


FIGURE 4.3
DECOMMISSIONING TIMELINE
SAFSTOR
(not to scale)



5. RADIOACTIVE WASTES

The objectives of the decommissioning process are the removal of all radioactive material from the site that would restrict its future use and the termination of the NRC license(s). This currently requires the remediation of all radioactive material at the site in excess of applicable legal limits. Under the Atomic Energy Act,[31] the NRC is responsible for protecting the public from sources of ionizing radiation. Title 10 of the Code of Federal Regulations delineates the production, utilization, and disposal of radioactive materials and processes. In particular, §71 defines radioactive material as it pertains to transportation and §61 specifies its disposition.

Most of the materials being transported for controlled burial are categorized as Low Specific Activity (LSA) or Surface Contaminated Object (SCO) materials containing Type A quantities, as defined in 49 CFR §173-178. Shipping containers are required to be Industrial Packages (IP-1, IP-2 or IP-3, as defined in subpart 173.411). For this study, commercially available steel containers are presumed to be used for the disposal of piping, small components, and concrete. Larger components can serve as their own containers, with proper closure of all openings, access ways, and penetrations.

The volumes of radioactive waste generated during the various decommissioning activities at the site are shown on a line-item basis in Appendix C and D and summarized in Tables 5.1 and 5.2. The quantified waste volume summaries shown in these tables are consistent with §61 classifications. The volumes are calculated based on the exterior dimensions for containerized material and on the displaced volume of components serving as their own waste containers.

The reactor vessel and internals are categorized as large quantity shipments and, accordingly, will be shipped in reusable, shielded truck casks with disposable liners. In calculating disposal costs, the burial fees are applied against the liner volume, as well as the special handling requirements of the payload. Packaging efficiencies are lower for the highly activated materials (greater than Type A quantity waste), where high concentrations of gamma-emitting radionuclides limit the capacity of the shipping canisters.

No process system containing/handling radioactive substances at shutdown is presumed to meet material release criteria by decay alone, *i.e.*, systems radioactive at shutdown will still be radioactive over the time period during which the decommissioning is accomplished, due to the presence of long-lived radionuclides.

While the dose rates decrease with time, radionuclides such as ^{137}Cs will still control the disposition requirements.

The waste material generated in the decontamination and dismantling of the nuclear station is primarily generated during Period 2 of DECON and Period 4 of SAFSTOR. Material that is considered potentially contaminated when removed from the radiologically controlled area is sent to processing facilities in Tennessee for conditioning and disposal at a unit cost of $2.50 per pound (excluding transportation). Heavily contaminated components and activated materials are routed for controlled disposal. The disposal volumes reported in the tables reflect the savings resulting from reprocessing and recycling.

For purposes of constructing the estimates, the cost for disposal at the Envirocare facility was used as a proxy for future disposal facilities. A rate of $267 per cubic foot is used for containerized waste and other large components including the reactor coolant pump motors, miscellaneous steel, metal siding, scaffolding, and structural steel. Demolition debris is disposed of at a bulk rate of $163 per cubic foot, with dry active waste processed at $104 per cubic foot. For waste shipped for direct disposal, a State of Florida inspection fee of $1.95 per cubic foot is also included.

Since Envirocare is not able to receive the more highly radioactive components generated in the decontamination and dismantling of the reactor, disposal costs for the Class B and C material are based upon Barnwell rates. An average disposal rate of $462 per cubic foot is used for this material, with additional surcharges for activity, dose rate, and/or handling added as appropriate for the particular package.

TABLE 5.1
DECOMMISSIONING WASTE SUMMARY
DECON

	Waste Class [1]	Volume (cubic feet)	Weight (pounds)
Low-Level Radioactive Waste			
	A	218,688	15,914,692
	B	20,022	3,047,417
	C	1,952	243,314
Geologic Repository (Greater-than Class C)			
	>C	975	200,265
Total [2]		241,637	19,405,688
Processed Waste (Off Site)			10,842,032
Scrap Metal			138,034,000

[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 5.2
DECOMMISSIONING WASTE SUMMARY
SAFSTOR

	Waste Class [1]	Volume (cubic feet)	Weight (pounds)
Low-Level Radioactive Waste			
	A	216,111	12,522,252
	B	8,980	1,022,194
	C	1,972	241,934
Geologic Repository (Greater-than Class C)			
	>C	975	200,265
Total [2]		228,038	13,986,644
Processed Waste (Off Site)			13,125,484
Scrap Metal			138,784,000

[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.

6. RESULTS

The analysis to estimate the costs to decommission Turkey Point relied upon the site-specific, technical information developed for a previous analysis prepared in 1998. While not an engineering study, the estimates provide FPL with sufficient information to assess their financial obligations, as they pertain to the eventual decommissioning of the nuclear station.

The estimates described in this report are based on numerous fundamental assumptions, including regulatory requirements, project contingencies, low-level radioactive waste disposal practices, high-level radioactive waste management options, and site restoration requirements. The decommissioning scenarios assume continued operation of the station's spent fuel pools for a minimum of 5½ years following the cessation of operations for continued cooling of the assemblies. An ISFSI will be used to safeguard the spent fuel, once sufficiently cooled, until such time that the DOE can complete the transfer of the assemblies to its repository.

The cost projected to promptly decommission (DECON) Turkey Point is estimated to be $992.3 million. The majority of this cost (approximately 80.0%) is associated with the physical decontamination and dismantling of the nuclear units so that the licenses can be terminated. Another 12.9% is associated with the management, interim storage, and eventual transfer of the spent fuel. The remaining 7.0% is for the demolition of the designated structures and limited restoration of the site.

The cost projected for deferred decommissioning (SAFSTOR) is estimated to be $1.224 billion. The majority of this cost (approximately 83.0%) is associated with the placement of the two units in safe-storage, securing and maintaining the facilities over the dormancy period as well as the eventual physical decontamination and dismantling of the nuclear units so that the licenses can be terminated. Another 10.8% is associated with the management, interim storage, and eventual transfer of the spent fuel. The remaining 6.2% is for the demolition of the designated structures and limited restoration of the site.

The primary cost contributors, identified in Tables 6.1 and 6.2, are either labor-related or associated with the management and disposition of the radioactive waste. Program management is the largest single contributor to the overall cost. The magnitude of the expense is a function of both the size of the organization required to manage the decommissioning, as well as the duration of the program. It is assumed, for purposes of this analysis, that FPL will oversee the decommissioning program, using a DOC to manage the decommissioning labor force and the

associated subcontractors. The size and composition of the management organization varies with the decommissioning phase and associated site activities. However, once the operating licenses are terminated, the staff is substantially reduced for the conventional demolition and restoration of the site, and the long-term care of the spent fuel (for the DECON alternative).

As described in this report, the spent fuel pools will remain operational for a minimum of 5½ years following the cessation of operations. The pools will be isolated and an independent spent fuel island created. This will allow decommissioning operations to proceed in and around the pool area. Over the 5½-year period, the spent fuel will be packaged into transportable steel canisters for loading into a DOE-provided transport cask. The canisters will be stored in concrete overpacks at the ISFSI until the DOE is able to receive them. Dry storage of the fuel under a separate license provides additional flexibility in the event the DOE is not able to meet the current timetable for completing the transfer of assemblies to an off-site facility and minimizes the associated caretaking expenses.

The cost for waste disposal includes only those costs associated with the controlled disposition of the low-level radioactive waste generated from decontamination and dismantling activities, including plant equipment and components, structural material, filters, resins and dry-active waste. As described in Section 5, disposition of the low-level radioactive material required controlled disposal is at the Envirocare facility. Highly activated components, requiring additional isolation from the environment, are packaged for geologic disposal. The cost of geologic disposal is based upon a cost equivalent for spent fuel.

A significant portion of the metallic waste is designated for additional processing and treatment at an off-site facility. Processing reduces the volume of material requiring controlled disposal through such techniques and processes as survey and sorting, decontamination, and volume reduction. The material that cannot be unconditionally released is packaged for controlled disposal at one of the currently operating facilities. The cost identified in the summary tables for processing is all-inclusive, incorporating the ultimate disposition of the material.

Removal costs reflect the labor-intensive nature of the decommissioning process, as well as the management controls required to ensure a safe and successful program. Decontamination and packaging costs also have a large labor component that is based upon prevailing union wages. Non-radiological demolition is a natural extension of the decommissioning process. The methods employed in decontamination and dismantling are generally destructive and indiscriminate in inflicting collateral damage. With a work force mobilized to support

decommissioning operations, non-radiological demolition can be an integrated activity and a logical expansion of the work being performed in the process of terminating the operating license(s). Prompt demolition reduces future liabilities and can be more cost effective than deferral, due to the deterioration of the facilities (and therefore the working conditions) with time.

The reported cost for transport includes the tariffs and surcharges associated with moving large components and/or overweight shielded casks overland, as well as the general expense, *e.g.*, labor and fuel, of transporting material to the destinations identified in this report. For purposes of this analysis, material is primarily moved overland by truck.

Decontamination is used to reduce the plant's radiation fields and minimize worker exposure. Slightly contaminated material or material located within a contaminated area is sent to an off-site processing center, *i.e.*, this analysis does not assume that contaminated plant components and equipment can be decontaminated for uncontrolled release in-situ. Centralized processing centers have proven to be a more economical means of handling the large volumes of material produced in the dismantling of a nuclear unit.

License termination survey costs are associated with the labor intensive and complex activity of verifying that contamination has been removed from the site to the levels specified by the regulating agency. This process involves a systematic survey of all remaining plant surface areas and surrounding environs, sampling, isotopic analysis, and documentation of the findings. The status of any plant components and materials not removed in the decommissioning process will also require confirmation and will add to the expense of surveying the facilities alone.

The remaining costs include allocations for heavy equipment and temporary services, as well as for other expenses such as regulatory fees and the premiums for nuclear insurance. While site operating costs are greatly reduced following the final cessation of plant operations, certain administrative functions do need to be maintained either at a basic functional or regulatory level.

TABLE 6.1
SUMMARY OF DECOMMISSIONING COST ELEMENTS
DECON
(thousands of 2004 dollars)

Cost Element	Total	Percent of Total Cost
Decontamination	19,443	2.0
Removal	122,762	12.4
Packaging	23,002	2.3
Transportation	28,352	2.9
Waste Disposal	131,711	13.3
Off-site Waste Processing	29,849	3.0
Program Management [1]	452,569	45.6
Spent Fuel Pool Isolation	16,856	1.7
ISFSI Related	67,079	6.8
Insurance and Regulatory Fees	29,315	3.0
Energy	10,305	1.0
Characterization and Licensing Surveys	12,220	1.2
Property Taxes	23,745	2.4
Miscellaneous Equipment	11,811	1.2
Fixed Overhead	13,308	1.3
Total [2]	992,326	100.0
NRC License Termination	794,267	80.0
Spent Fuel Management [3]	128,216	12.9
Site Restoration	69,842	7.0

[1] Includes engineering and security
[2] Columns may not add due to rounding
[3] Includes "ISFSI Related" capital and loading costs as well as the associated period-dependent expenditures, *e.g.*, program management, security, fees and taxes

TABLE 6.2
SUMMARY OF DECOMMISSIONING COST ELEMENTS
SAFSTOR
(thousands of 2004 dollars)

Cost Element	Total	Percent of Total Cost
Decontamination	14,125	1.2
Removal	124,324	10.2
Packaging	17,838	1.5
Transportation	22,036	1.8
Waste Disposal	85,407	7.0
Off-site Waste Processing	36,092	2.9
Program Management [1]	585,330	47.8
Spent Fuel Pool Isolation	16,020	1.3
ISFSI Related	63,920	5.2
Insurance and Regulatory Fees	88,698	7.2
Energy	22,361	1.8
Characterization and Licensing Surveys	15,175	1.2
Property Taxes	67,703	5.5
Miscellaneous Equipment	31,323	2.6
Fixed Overhead	33,472	2.7
Total [2]	1,223,825	100.0
NRC License Termination	1,016,358	83.0
Spent Fuel Management [3]	131,929	10.8
Site Restoration	75,539	6.2

[1] Includes engineering and security
[2] Columns may not add due to rounding
[3] Includes "ISFSI Related" capital and loading costs as well as the associated period-dependent expenditures, *e.g.*, program management, security, fees and taxes

7. REFERENCES

1. 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.

2. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors," October 2003.

3. U.S. Code of Federal Regulations, Title 10, Part 20, Subpart E, "Radiological Criteria for License Termination."

4. U.S. Code of Federal Regulations, Title 10, Parts 20 and 50, "Entombment Options for Power Reactors," Advanced Notice of Proposed Rulemaking, Federal Register Volume 66, Number 200, October 16, 2001.

5. 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.

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

7. Maine Yankee Atomic Power Company, Connecticut Yankee Atomic Power Company, and Yankee Atomic Power Company v. United States, U.S. Court of Appeals for the Federal Circuit decision, Docket No. 99-5138, -5139, -5140, August 31, 2000.

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

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

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

7. REFERENCES
(continued)

11. U.S. Code of Federal Regulations, Title 10, Part 20, Subpart E, "Radiological Criteria for License Termination," Federal Register, Volume 62, Number 139 (p 39058 et seq.), July 21, 1997.

12. "Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination," EPA Memorandum OSWER No. 9200.4-18, August 22, 1997.

13. U.S. Code of Federal Regulations, Title 40, Part 141.16, "Maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides in community water systems."

14. "Memorandum of Understanding Between the Environmental Protection Agency and the Nuclear Regulatory Commission: Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites," OSWER 9295.8-06a, October 9, 2002.

15. "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)," NUREG/CR-1575, Rev. 1, EPA 402-R-97-016, Rev. 1, August 2000.

16. "Decommissioning Cost Study for the Turkey Point Plant, Units 3 and 4," Document No. F02-1297-003, Rev. 1, TLG Services, Inc., October 1999.

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

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19. "Building Construction Cost Data 2004," Robert Snow Means Company, Inc., Kingston, Massachusetts.

20. Project and Cost Engineers' Handbook, Second Edition, p. 239, American Association of Cost Engineers, Marcel Dekker, Inc., New York, New York, 1984.

21. "Technical, Schedule, and Cost Uncertainties of the Yucca Mountain Repository Project," GAO-02-191, December 2001.

7. REFERENCES
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22. "Acceptance Priority Ranking & Annual Capacity Report," DOE/RW-0567, July 2004.

23. "Civilian Radioactive Waste Management System Total System Description," Revision 02 (TDR-CRW-SE-000002), DOE/RW-0500, September 2001.

24. U.S. Department of Transportation, Title 49 of the Code of Federal Regulations, "Transportation," Parts 173 through 178, 1996.

25. Tri-State Motor Transit Company, published tariffs, Interstate Commerce Commission (ICC), Docket No. MC-427719 Rules Tariff, March 2004, Radioactive Materials Tariff, January 2004.

26. 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.

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28. 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.

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30. "Microsoft Project Professional 2002," Microsoft Corporation, Redmond, WA.

31. "Atomic Energy Act of 1954," (68 Stat. 919).

APPENDIX A

UNIT COST FACTOR DEVELOPMENT

APPENDIX A
UNIT COST FACTOR DEVELOPMENT

Example: Unit Factor for Removal of Contaminated Heat Exchanger < 3,000 lbs.

1. SCOPE

Heat exchangers weighing < 3,000 lbs. will be removed in one piece using a crane or small hoist. They will be disconnected from the inlet and outlet piping. The heat exchanger will be sent to the waste processing area.

2. CALCULATIONS

Act ID	Activity Description	Activity Duration (minutes)	Critical Duration (minutes)*
a	Remove insulation	60	(b)
b	Mount pipe cutters	60	60
c	Install contamination controls	20	(b)
d	Disconnect inlet and outlet lines	60	60
e	Cap openings	20	(d)
f	Rig for removal	30	30
g	Unbolt from mounts	30	30
h	Remove contamination controls	15	15
i	Remove, wrap, send to waste processing area	60	60
	Totals (Activity/Critical)	355	255

Duration adjustment(s):	
+ Respiratory protection adjustment (50% of critical duration)	128
+ Radiation/ALARA adjustment (37% of critical duration)	95
Adjusted work duration	478
+ Protective clothing adjustment (30% of adjusted duration)	143
Productive work duration	621
+ Work break adjustment (8.33 % of productive duration)	52
Total work duration (minutes)	673

***** Total duration = 11.217 hr *****

* alpha designators indicate activities that can be performed in parallel

APPENDIX A
(continued)

3. LABOR REQUIRED

Crew	Number	Duration (hours)	Rate ($/hr)	Cost
Laborers	3.00	11.217	$27.45	$923.72
Craftsmen	2.00	11.217	$41.18	$923.83
Foreman	1.00	11.217	$42.36	$475.15
General Foreman	0.25	11.217	$44.93	$125.99
Fire Watch	0.05	11.217	$27.45	$15.40
Health Physics Technician	1.00	11.217	$52.31	$586.76
Total labor cost				$3,050.85

4. EQUIPMENT & CONSUMABLES COSTS

Equipment Costs	none
Consumables/Materials Costs	
-Blotting paper 50 @ $0.46 sq ft {1}	$23.00
-Plastic sheets/bags 50 @ $0.11/sq ft {2}	$5.50
-Gas torch consumables 1 @ $8.11/hr x 1 hr {3}	$8.31
Subtotal cost of equipment and materials	$36.11
Overhead & profit on equipment and materials @ 17.00 %	$6.26
Total costs, equipment & material	$43.07

TOTAL COST:

Removal of contaminated heat exchanger <3000 pounds:	**$3,093.92**
Total labor cost:	$3,050.85
Total equipment/material costs:	$43.07
Total craft labor man-hours required per unit:	81.884

5. NOTES AND REFERENCES

- Work difficulty factors were developed in conjunction with the Atomic Industrial Forum's (now NEI) program to standardize nuclear decommissioning cost estimates and are delineated in Volume 1, Chapter 5 of the "Guidelines for Producing Commercial Nuclear Power Plant Decommissioning Cost Estimates," AIF/NESP-036, May 1986.

- References for equipment & consumables costs:

    1. www.mcmaster.com online catalog
    2. R.S. Means (2004) Section 01540-800-0200, page 17
    3. R.S. Means (2004) Section 01590-400-6360, page 25

- Material and consumable costs were adjusted using the regional indices for Miami, Florida.

APPENDIX B

UNIT COST FACTOR LISTING
(DECON: Power Block Structures Only)

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of clean instrument and sampling tubing, $/linear foot	0.31
Removal of clean pipe 0.25 to 2 inches diameter, $/linear foot	3.29
Removal of clean pipe >2 to 4 inches diameter, $/linear foot	4.76
Removal of clean pipe >4 to 8 inches diameter, $/linear foot	9.60
Removal of clean pipe >8 to 14 inches diameter, $/linear foot	18.29
Removal of clean pipe >14 to 20 inches diameter, $/linear foot	23.76
Removal of clean pipe >20 to 36 inches diameter, $/linear foot	34.96
Removal of clean pipe >36 inches diameter, $/linear foot	41.54
Removal of clean valves >2 to 4 inches	62.79
Removal of clean valves >4 to 8 inches	95.97
Removal of clean valves >8 to 14 inches	182.86
Removal of clean valves >14 to 20 inches	237.57
Removal of clean valves >20 to 36 inches	349.56
Removal of clean valves >36 inches	415.41
Removal of clean pipe hangers for small bore piping	20.72
Removal of clean pipe hangers for large bore piping	73.36
Removal of clean pumps, <300 pound	161.50
Removal of clean pumps, 300 to 1000 pound	455.95
Removal of clean pumps, 1000 to 10,000 pound	1,792.31
Removal of clean pumps, >10,000 pound	3,464.91
Removal of clean pump motors, 300 to 1000 pound	191.45
Removal of clean pump motors, 1000 to 10,000 pound	746.02
Removal of clean pump motors, >10,000 pound	1,678.56
Removal of clean heat exchanger <3000 pound	961.58
Removal of clean heat exchanger >3000 pound	2,418.64

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of clean feedwater heater/deaerator	6,824.12
Removal of clean moisture separator/reheater	14,037.14
Removal of clean tanks, <300 gallons	207.77
Removal of clean tanks, 300 to 3000 gallon	655.82
Removal of clean tanks, >3000 gallons, $/square foot surface area	5.59
Removal of clean electrical equipment, <300 pound	88.11
Removal of clean electrical equipment, 300 to 1000 pound	311.70
Removal of clean electrical equipment, 1000 to 10,000 pound	623.41
Removal of clean electrical equipment, >10,000 pound	1,488.65
Removal of clean electrical transformers < 30 tons	1,033.84
Removal of clean electrical transformers > 30 tons	2,977.31
Removal of clean standby diesel generator, <100 kW	1,055.99
Removal of clean standby diesel generator, 100 kW to 1 MW	2,357.04
Removal of clean standby diesel generator, >1 MW	4,879.53
Removal of clean electrical cable tray, $/linear foot	8.24
Removal of clean electrical conduit, $/linear foot	3.60
Removal of clean mechanical equipment, <300 pound	88.11
Removal of clean mechanical equipment, 300 to 1000 pound	311.70
Removal of clean mechanical equipment, 1000 to 10,000 pound	623.41
Removal of clean mechanical equipment, >10,000 pound	1,488.65
Removal of clean HVAC equipment, <300 pound	88.11
Removal of clean HVAC equipment, 300 to 1000 pound	311.70
Removal of clean HVAC equipment, 1000 to 10,000 pound	623.41
Removal of clean HVAC equipment, >10,000 pound	1,488.65
Removal of clean HVAC ductwork, $/pound	0.33

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of contaminated instrument and sampling tubing, $/linear foot	1.15
Removal of contaminated pipe 0.25 to 2 inches diameter, $/linear foot	14.87
Removal of contaminated pipe >2 to 4 inches diameter, $/linear foot	25.59
Removal of contaminated pipe >4 to 8 inches diameter, $/linear foot	42.27
Removal of contaminated pipe >8 to 14 inches diameter, $/linear foot	81.56
Removal of contaminated pipe >14 to 20 inches diameter, $/linear foot	98.04
Removal of contaminated pipe >20 to 36 inches diameter, $/linear foot	135.86
Removal of contaminated pipe >36 inches diameter, $/linear foot	160.67
Removal of contaminated valves >2 to 4 inches	325.29
Removal of contaminated valves >4 to 8 inches	391.11
Removal of contaminated valves >8 to 14 inches	782.25
Removal of contaminated valves >14 to 20 inches	994.63
Removal of contaminated valves >20 to 36 inches	1,325.30
Removal of contaminated valves >36 inches	1,573.39
Removal of contaminated pipe hangers for small bore piping	79.71
Removal of contaminated pipe hangers for large bore piping	247.72
Removal of contaminated pumps, <300 pound	696.48
Removal of contaminated pumps, 300 to 1000 pound	1,601.04
Removal of contaminated pumps, 1000 to 10,000 pound	5,038.15
Removal of contaminated pumps, >10,000 pound	12,271.05
Removal of contaminated pump motors, 300 to 1000 pound	679.65
Removal of contaminated pump motors, 1000 to 10,000 pound	2,051.26
Removal of contaminated pump motors, >10,000 pound	4,605.32
Removal of contaminated heat exchanger <3000 pound	3,093.92
Removal of contaminated heat exchanger >3000 pound	8,960.70

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of contaminated tanks, <300 gallons	1,157.41
Removal of contaminated tanks, >300 gallons, $/square foot	22.50
Removal of contaminated electrical equipment, <300 pound	540.52
Removal of contaminated electrical equipment, 300 to 1000 pound	1,296.57
Removal of contaminated electrical equipment, 1000 to 10,000 pound	2,495.98
Removal of contaminated electrical equipment, >10,000 pound	4,846.62
Removal of contaminated electrical cable tray, $/linear foot	26.07
Removal of contaminated electrical conduit, $/linear foot	11.90
Removal of contaminated mechanical equipment, <300 pound	601.82
Removal of contaminated mechanical equipment, 300 to 1000 pound	1,433.75
Removal of contaminated mechanical equipment, 1000 to 10,000 pound	2,755.64
Removal of contaminated mechanical equipment, >10,000 pound	4,846.62
Removal of contaminated HVAC equipment, <300 pound	601.82
Removal of contaminated HVAC equipment, 300 to 1000 pound	1,433.75
Removal of contaminated HVAC equipment, 1000 to 10,000 pound	2,755.64
Removal of contaminated HVAC equipment, >10,000 pound	4,846.62
Removal of contaminated HVAC ductwork, $/pound	1.65
Removal/plasma arc cut of contaminated thin metal components, $/linear in.	2.78
Additional decontamination of surface by washing, $/square foot	5.66
Additional decontamination of surfaces by hydrolasing, $/square foot	26.37
Decontamination rig hook up and flush	5,112.47
Chemical flush of components/systems, $/gallon	12.48
Removal of clean standard reinforced concrete, $/cubic yard	95.77
Removal of grade slab concrete, $/cubic yard	127.26
Removal of clean concrete floors, $/cubic yard	255.88

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of sections of clean concrete floors, $/cubic yard	743.39
Removal of clean heavily rein concrete w/#9 rebar, $/cubic yard	170.88
Removal of contaminated heavily rein concrete w/#9 rebar, $/cubic yard	1,494.65
Removal of clean heavily rein concrete w/#18 rebar, $/cubic yard	216.17
Removal of contaminated heavily rein concrete w/#18 rebar, $/cubic yard	1,978.96
Removal heavily rein concrete w/#18 rebar & steel embedments, $/cubic yard	320.12
Removal of below-grade suspended floors, $/cubic yard	255.88
Removal of clean monolithic concrete structures, $/cubic yard	614.71
Removal of contaminated monolithic concrete structures, $/cubic yard	1,493.19
Removal of clean foundation concrete, $/cubic yard	482.61
Removal of contaminated foundation concrete, $/cubic yard	1,391.00
Explosive demolition of bulk concrete, $/cubic yard	22.47
Removal of clean hollow masonry block wall, $/cubic yard	65.44
Removal of contaminated hollow masonry block wall, $/cubic yard	250.59
Removal of clean solid masonry block wall, $/cubic yard	65.44
Removal of contaminated solid masonry block wall, $/cubic yard	250.59
Backfill of below-grade voids, $/cubic yard	15.15
Removal of subterranean tunnels/voids, $/linear foot	76.16
Placement of concrete for below-grade voids, $/cubic yard	97.69
Excavation of clean material, $/cubic yard	2.10
Excavation of contaminated material, $/cubic yard	30.13
Removal of clean concrete rubble (tipping fee included), $/cubic yard	93.73
Removal of contaminated concrete rubble, $/cubic yard	19.55
Removal of building by volume, $/cubic foot	0.22
Removal of clean building metal siding, $/square foot	0.77

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Removal of contaminated building metal siding, $/square foot	3.15
Removal of standard asphalt roofing, $/square foot	4.11
Removal of transite panels, $/square foot	1.72
Scarifying contaminated concrete surfaces (drill & spall)	10.88
Scabbling contaminated concrete floors, $/square foot	5.97
Scabbling contaminated concrete walls, $/square foot	6.55
Scabbling contaminated ceilings, $/square foot	58.97
Scabbling structural steel, $/square foot	5.23
Removal of clean overhead cranes/monorails < 10 ton capacity	443.97
Removal of contaminated overhead cranes/monorails < 10 ton capacity	1,379.09
Removal of clean overhead cranes/monorails >10 - 50 ton capacity	1,065.53
Removal of contaminated overhead cranes/monorails >10 - 50 ton capacity	3,309.24
Removal of polar cranes > 50 ton capacity, each	4,460.89
Removal of gantry cranes > 50 ton capacity, each	18,608.12
Removal of structural steel, $/pound	0.27
Removal of clean steel floor grating, $/square foot	3.25
Removal of contaminated steel floor grating, $/square foot	10.11
Removal of clean free standing steel liner, $/square foot	8.38
Removal of contaminated free standing steel liner, $/square foot	26.30
Removal of clean concrete-anchored steel liner, $/square foot	4.19
Removal of contaminated concrete-anchored steel liner, $/square foot	30.65
Placement of scaffolding in clean areas, $/square foot	12.64
Placement of scaffolding in contaminated areas, $/square foot	20.75
Landscaping with topsoil, $/acre	18,184.88
Cost of CPC B-88 LSA box & preparation for use	1,152.56

APPENDIX B

UNIT COST FACTOR LISTING
(Power Block Structures Only)

Unit Cost Factor	Cost/Unit($)
Cost of CPC B-25 LSA box & preparation for use	908.72
Cost of CPC B-12V 12 gauge LSA box & preparation for use	774.33
Cost of CPC B-144 LSA box & preparation for use	4,525.87
Cost of LSA drum & preparation for use	106.78
Cost of cask liner for CNSI 14 195 cask	9,439.98
Cost of cask liner for CNSI 8 120A cask (resins)	6,262.59
Cost of cask liner for CNSI 8 120A cask (filters)	6,262.59
Decontamination of surfaces with vacuuming, $/square foot	0.48

APPENDIX C

DETAILED COST ANALYSES

DECON

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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	Prepare preliminary decommissioning cost	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
1a.1.2	Notification of Cessation of Operations									a											
1a.1.3	Remove fuel & source material									n/a											
1a.1.4	Notification of Permanent Defueling									a											
1a.1.5	Deactivate plant systems & process waste									a											
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	191	29	220	220	-	-	-	-	-	-	-	-	-	2,000
1a.1.7	Review plant dwgs & specs.	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
1a.1.8	Perform detailed rad survey									a											
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1a.1.10	End product description	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
1a.1.12	Define major work sequence	-	-	-	-	-	-	717	108	824	824	-	-	-	-	-	-	-	-	-	7,500
1a.1.13	Perform SER and EA	-	-	-	-	-	-	296	44	341	341	-	-	-	-	-	-	-	-	-	3,100
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	476	72	549	549	-	-	-	-	-	-	-	-	-	5,000
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	391	59	450	450	-	-	-	-	-	-	-	-	-	4,096
1a.1.16	Receive NRC approval of termination plan									a											
Activity Specifications																					
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	470	71	541	487	-	54	-	-	-	-	-	-	-	4,920
1a.1.17.2	Plant systems	-	-	-	-	-	-	398	60	458	412	-	46	-	-	-	-	-	-	-	4,167
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	48	7	55	55	-	-	-	-	-	-	-	-	-	500
1a.1.17.4	Reactor Internals	-	-	-	-	-	-	678	102	780	780	-	-	-	-	-	-	-	-	-	7,100
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	621	93	714	714	-	-	-	-	-	-	-	-	-	6,500
1a.1.17.6	Biological shield	-	-	-	-	-	-	48	7	55	55	-	-	-	-	-	-	-	-	-	500
1a.1.17.7	Steam generators	-	-	-	-	-	-	298	45	343	343	-	-	-	-	-	-	-	-	-	3,120
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	153	23	176	88	-	88	-	-	-	-	-	-	-	1,600
1a.1.17.9	Main Turbine	-	-	-	-	-	-	38	6	44	-	-	44	-	-	-	-	-	-	-	400
1a.1.17.10	Main Condensers	-	-	-	-	-	-	38	6	44	-	-	44	-	-	-	-	-	-	-	400
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	298	45	343	171	-	171	-	-	-	-	-	-	-	3,120
1a.1.17.12	Waste management	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	86	13	99	49	-	49	-	-	-	-	-	-	-	900
1a.1.17	Total	-	-	-	-	-	-	3,815	542	4,157	3,680	-	497	-	-	-	-	-	-	-	37,827
Planning & Site Preparations																					
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	229	34	264	264	-	-	-	-	-	-	-	-	-	2,400
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,419	363	2,782	2,782	-	-	-	-	-	-	-	-	-	-
1a.1.20	Design water clean-up system	-	-	-	-	-	-	134	20	154	154	-	-	-	-	-	-	-	-	-	1,400
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,048	307	2,355	2,355	-	-	-	-	-	-	-	-	-	-
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	118	18	135	135	-	-	-	-	-	-	-	-	-	1,230
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	11,515	1,727	13,242	12,745	-	497	-	-	-	-	-	-	-	73,753
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	784	118	902	-	902	-	-	-	-	-	-	-	-	-
1a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
1a.3.3	Fixed Overhead	-	-	-	-	-	-	800	120	920	920	-	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,585	238	1,823	921	902	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	875	87	962	962	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	-	404	-	-	-	8,103	99	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	704	106	810	810	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 (continued)																					
1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	125	12	137	-	137	-	-	-	-	-	-	-	-	-
1a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	997	149	1,146	-	1,146	-	-	-	-	-	-	-	-	-
1a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	37	5	42	-	42	-	-	-	-	-	-	-	-	-
1a.4.11	INPO Fees	-	-	-	-	-	-	450	45	495	495	-	-	-	-	-	-	-	-	-	-
1a.4.12	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-
1a.4.13	Security Staff Cost	-	-	-	-	-	-	544	82	625	625	-	-	-	-	-	-	-	-	-	27,114
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	24,097	3,615	27,712	27,712	-	-	-	-	-	-	-	-	-	438,000
1a.4	Subtotal Period 1a Period-Dependent Costs	-	582	5	6	-	42	26,724	4,315	33,674	32,348	1,325	-	-	404	-	-	-	8,103	99	465,114
1a.0	TOTAL PERIOD 1a COST	-	582	5	6	-	42	41,824	6,280	48,739	46,015	2,227	497	-	404	-	-	-	8,103	99	538,867
PERIOD 1b - Decommissioning Preparations																					
Period 1b Direct Decommissioning Activities																					
Detailed Work Procedures																					
1b.1.1.1	Plant systems	-	-	-	-	-	-	452	68	520	468	-	52	-	-	-	-	-	-	-	4,733
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.3	Reactor internals	-	-	-	-	-	-	239	36	275	275	-	-	-	-	-	-	-	-	-	2,500
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	129	19	148	37	-	111	-	-	-	-	-	-	-	1,350
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	347	52	399	399	-	-	-	-	-	-	-	-	-	3,630
1b.1.1.9	Facility closeout	-	-	-	-	-	-	115	17	132	66	-	66	-	-	-	-	-	-	-	1,200
1b.1.1.10	Missile shields	-	-	-	-	-	-	43	6	49	49	-	-	-	-	-	-	-	-	-	450
1b.1.1.11	Biological shield	-	-	-	-	-	-	115	17	132	132	-	-	-	-	-	-	-	-	-	1,200
1b.1.1.12	Steam generators	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	96	14	110	55	-	55	-	-	-	-	-	-	-	1,000
1b.1.1.14	Main Turbine	-	-	-	-	-	-	149	22	171	-	-	171	-	-	-	-	-	-	-	1,580
1b.1.1.15	Main Condensers	-	-	-	-	-	-	149	22	171	-	-	171	-	-	-	-	-	-	-	1,580
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	261	39	300	270	-	30	-	-	-	-	-	-	-	2,730
1b.1.1.17	Reactor building	-	-	-	-	-	-	261	39	300	270	-	30	-	-	-	-	-	-	-	2,730
1b.1.1	Total	-	-	-	-	-	-	3,177	477	3,653	2,966	-	687	-	-	-	-	-	-	-	33,243
1b.1.2	Decon primary loop	919	-	-	-	-	-	-	460	1,379	1,379	-	-	-	-	-	-	-	-	1,067	-
1b.1	Subtotal Period 1b Activity Costs	919	-	-	-	-	-	3,177	936	5,032	4,345	-	687	-	-	-	-	-	-	1,067	33,243
Period 1b Additional Costs																					
1b.2.1	Site Characterization Survey	-	-	-	-	-	-	852	256	1,108	1,108	-	-	-	-	-	-	-	-	-	-
1b.2.2	Spent Fuel Pool Isolation	-	-	-	-	-	-	8,358	1,254	9,612	9,612	-	-	-	-	-	-	-	-	-	-
1b.2.3	Asbestos removal program	-	381	0	71	-	84	-	127	663	663	-	-	-	6,219	-	-	-	51,498	6,948	-
1b.2	Subtotal Period 1b Additional Costs	-	381	0	71	-	84	9,211	1,636	11,384	11,384	-	-	-	6,219	-	-	-	51,498	6,948	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	720	-	-	-	-	-	-	108	828	828	-	-	-	-	-	-	-	-	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process liquid waste	42	-	378	1,115	-	4,003	-	1,227	6,764	6,764	-	-	-	-	4,379	-	-	726,343	155	-
1b.3.4	Small tool allowance	-	6	-	-	-	-	-	1	7	7	-	-	-	-	-	-	-	-	-	-
1b.3.5	Pipe cutting equipment	-	957	-	-	-	-	-	143	1,100	1,100	-	-	-	-	-	-	-	-	-	-
1b.3.6	Decon rig	1,243	-	-	-	-	-	-	186	1,430	1,430	-	-	-	-	-	-	-	-	-	-
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	146	22	167	-	167	-	-	-	-	-	-	-	-	-
1b.3.8	Florida LLRW Inspection Fee	-	-	-	-	-	-	21	2	23	23	-	-	-	-	-	-	-	-	-	-
1b.3.9	Fixed Overhead	-	-	-	-	-	-	406	61	466	466	-	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	2,005	963	378	1,115	-	4,003	1,861	1,944	12,268	12,100	167	-	-	-	4,379	-	-	726,343	155	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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																					
1b.4.1	Decon supplies	22	-	-	-	-	-	-	5	27	27	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	443	44	488	488	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	253	25	279	279	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	152	-	-	-	-	-	38	190	190	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	171	-	-	-	-	-	26	197	197	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	3	3	-	23	-	6	35	35	-	-	-	221	-	-	-	4,439	54	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	714	107	821	821	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	134	13	148	148	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	63	6	70	-	70	-	-	-	-	-	-	-	-	-
1b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	505	76	581	-	581	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-	-	-	-	-	-	19	3	21	-	21	-	-	-	-	-	-	-	-	-
1b.4.12	NEI Fees	-	-	-	-	-	-	66	7	73	73	-	-	-	-	-	-	-	-	-	-
1b.4.13	Security Staff Cost	-	-	-	-	-	-	278	41	317	317	-	-	-	-	-	-	-	-	-	13,743
1b.4.14	DOC Staff Cost	-	-	-	-	-	-	4,310	647	4,957	4,957	-	-	-	-	-	-	-	-	-	64,486
1b.4.15	Utility Staff Cost	-	-	-	-	-	-	12,285	1,843	14,128	14,128	-	-	-	-	-	-	-	-	-	223,057
1b.4	Subtotal Period 1b Period-Dependent Costs	22	323	3	3	-	23	19,069	2,868	22,330	21,659	672	-	-	221	-	-	-	4,439	54	301,286
1b.0	TOTAL PERIOD 1b COST	2,946	1,666	381	1,189	-	4,110	33,318	7,404	51,014	49,467	839	687	-	6,440	4,379	-	-	782,280	8,224	334,529
PERIOD 1 TOTALS		2,946	2,249	386	1,195	-	4,152	75,142	13,684	99,752	95,502	3,067	1,184	-	6,845	4,379	-	-	790,383	8,323	873,398
PERIOD 2a - Large Component Removal																					
Period 2a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
2a.1.1.1	Reactor Coolant Piping	45	35	4	14	-	152	-	72	321	321	-	-	-	401	-	-	-	48,444	1,954	-
2a.1.1.2	Pressurizer Relief Tank	19	16	3	9	-	92	-	38	178	178	-	-	-	265	-	-	-	29,424	863	-
2a.1.1.3	Reactor Coolant Pumps & Motors	35	51	28	378	114	1,847	-	569	3,022	3,022	-	-	183	2,364	-	-	-	633,930	2,418	-
2a.1.1.4	Pressurizer	26	41	421	481	-	479	-	257	1,706	1,706	-	-	-	1,793	-	-	-	197,230	2,243	-
2a.1.1.5	Steam Generators	248	2,162	1,725	2,758	1,931	2,625	-	2,196	13,645	13,645	-	-	10,819	9,831	-	-	-	2,166,271	23,142	-
2a.1.1.6	CRDMs/RCIs/Service Structure Removal	108	71	86	60	-	247	-	151	724	724	-	-	-	3,474	-	-	-	78,625	4,149	-
2a.1.1.7	Reactor Vessel Internals	81	1,894	4,412	1,290	-	6,643	183	6,235	20,739	20,739	-	-	-	626	527	976	-	228,003	24,263	1,103
2a.1.1.8	Reactor Vessel	55	3,604	1,199	836	-	6,834	183	6,664	19,395	19,395	-	-	-	5,367	1,753	-	-	790,717	24,263	1,103
2a.1.1	Totals	617	7,874	7,879	5,827	2,045	18,919	367	16,203	59,730	59,730	-	-	11,002	24,121	2,280	976	-	4,172,644	83,294	2,205
Removal of Major Equipment																					
2a.1.2	Main Turbine/Generator	-	227	141	25	540	460	-	271	1,665	1,665	-	-	2,542	2,825	-	-	-	498,612	5,877	-
2a.1.3	Main Condensers	-	766	63	83	466	338	-	365	2,081	2,081	-	-	4,145	2,073	-	-	-	393,620	20,426	-
Cascading Costs from Clean Building Demolition																					
2a.1.4.1	Containment	-	547	-	-	-	-	-	82	629	629	-	-	-	-	-	-	-	-	8,302	-
2a.1.4.2	Fuel Handling	-	43	-	-	-	-	-	6	49	49	-	-	-	-	-	-	-	-	708	-
2a.1.4	Totals	-	590	-	-	-	-	-	89	679	679	-	-	-	-	-	-	-	-	9,010	-
Disposal of Plant Systems																					
2a.1.5.1	Amsetap	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,715	-
2a.1.5.2	Auxiliary Feedwater	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	98	-
2a.1.5.3	Auxiliary Feedwater - Insulated	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	411	-
2a.1.5.4	Auxiliary Feedwater - Insulated - RCA	-	94	2	7	31	93	-	53	279	279	-	-	308	191	-	-	-	29,619	2,372	-
2a.1.5.5	Auxiliary Feedwater - RCA	-	20	1	2	8	22	-	12	65	65	-	-	75	46	-	-	-	7,205	507	-
2a.1.5.6	Auxiliary Steam	-	0	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	10	-
2a.1.5.7	Auxiliary Steam - Insulated	-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	734	-
2a.1.5.8	Auxiliary Steam - Insulated - RCA	-	5	0	0	3	6	-	3	19	19	-	-	31	12	-	-	-	2,380	133	-
2a.1.5.9	Auxiliary Steam - RCA	-	-	-	-	-	-	-	-	0	0	-	-	-	0	-	-	-	16	1	-
2a.1.5.10	Breathing Air - Insulated - RCA	-	4	-	0	1	3	-	2	10	10	-	-	9	7	-	-	-	963	92	-
2a.1.5.11	Breathing Air - RCA	-	12	0	1	4	13	-	7	37	37	-	-	36	28	-	-	-	3,793	307	-
2a.1.5.12	Chemical & Volume Control	46	81	6	15	53	223	-	110	533	533	-	-	521	521	-	-	-	62,170	3,035	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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)																					
2a1.5.13	Chemical & Volume Control - Insulated	129	197	7	16	17	271	-	187	823	823	-	-	167	557	-	-	-	56,721	7,804	-
2a1.5.14	Circulating Water	-	74	-	-	-	-	-	11	85	-	-	85	-	-	-	-	-	-	2,204	-
2a1.5.15	Component Cooling Water	-	118	-	-	-	-	-	18	136	-	-	136	-	-	-	-	-	-	3,558	-
2a1.5.16	Component Cooling Water - RCA	-	283	14	43	411	439	-	250	1,440	1,440	-	-	4,044	902	-	-	-	245,115	7,187	-
2a1.5.17	Condensate	-	135	-	-	-	-	-	20	155	-	-	155	-	-	-	-	-	-	3,960	-
2a1.5.18	Condensate - Insulated	-	43	-	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	1,309	-
2a1.5.19	Condensate Polishing	-	25	-	-	-	-	-	4	29	-	-	29	-	-	-	-	-	-	734	-
2a1.5.20	Condensate Polishing - Ins	-	66	-	-	-	-	-	10	76	-	-	76	-	-	-	-	-	-	1,986	-
2a1.5.21	Condensate Recovery	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	373	-
2a1.5.22	Condensate Recovery - Insulated	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	60	-
2a1.5.23	Condensate Recovery - Insulated - RCA	-	4	0	0	1	4	-	2	11	11	-	-	10	8	-	-	-	1,127	98	-
2a1.5.24	Condensate Recovery - RCA	-	16	0	1	4	18	-	9	49	49	-	-	43	36	-	-	-	5,028	388	-
2a1.5.25	Condensate Storage	-	55	-	-	-	-	-	8	63	-	-	63	-	-	-	-	-	-	1,572	-
2a1.5.26	Condenser	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	545	-
2a1.5.27	Containment Post Accident Eval	-	1	-	-	0	0	-	0	1	1	-	-	2	0	-	-	-	130	16	-
2a1.5.28	Electrical - Clean	-	1,082	-	-	-	-	-	162	1,244	-	-	1,244	-	-	-	-	-	-	31,193	-
2a1.5.29	Extraction Steam	-	8	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	-	244	-
2a1.5.30	Extraction Steam - Insulated	-	39	-	-	-	-	-	6	45	-	-	45	-	-	-	-	-	-	1,194	-
2a1.5.31	Feedwater	-	38	-	-	-	-	-	6	43	-	-	43	-	-	-	-	-	-	1,095	-
2a1.5.32	Feedwater - Insulated	-	109	-	-	-	-	-	16	125	-	-	125	-	-	-	-	-	-	3,321	-
2a1.5.33	Feedwater - Insulated - RCA	-	52	2	7	65	69	-	41	236	236	-	-	640	141	-	-	-	38,659	1,330	-
2a1.5.34	Feedwater - RCA	-	5	0	1	6	6	-	4	21	21	-	-	55	13	-	-	-	3,412	116	-
2a1.5.35	Feedwater Heater Drains & Vents	-	35	-	-	-	-	-	5	41	-	-	41	-	-	-	-	-	-	1,053	-
2a1.5.36	Feedwater Heater Drains & Vents - Ins	-	238	-	-	-	-	-	36	273	-	-	273	-	-	-	-	-	-	7,237	-
2a1.5.37	Fire Protection	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	394	-
2a1.5.38	Generator	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	126	-
2a1.5.39	Generator - Insulated	-	1	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	47	-
2a1.5.40	Instrument Air	-	10	-	-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	291	-
2a1.5.41	Instrument Air - Insulated	-	8	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	-	239	-
2a1.5.42	Intake Cooling Water	-	117	-	-	-	-	-	17	134	-	-	134	-	-	-	-	-	-	3,548	-
2a1.5.43	Main Steam - Insulated	-	131	-	-	-	-	-	20	151	-	-	151	-	-	-	-	-	-	3,903	-
2a1.5.44	Main Steam - Insulated - RCA	-	35	2	5	49	49	-	29	170	170	-	-	463	102	-	-	-	28,740	904	-
2a1.5.45	Reactor Coolant - Insulated	32	56	2	4	6	73	-	50	223	223	-	-	62	149	-	-	-	15,924	2,097	-
2a1.5.46	Safety Injection	-	177	5	20	369	54	-	117	742	742	-	-	3,838	145	-	-	-	157,613	4,553	-
2a1.5.47	Safety Injection - Insulated	-	86	3	9	67	112	-	61	338	338	-	-	656	229	-	-	-	47,208	2,172	-
2a1.5.48	Sample - NSSS	-	20	0	1	8	9	-	9	47	47	-	-	83	19	-	-	-	5,051	521	-
2a1.5.49	Sample - NSSS - Ins	-	19	0	1	0	10	-	7	37	37	-	-	4	20	-	-	-	1,923	514	-
2a1.5.50	Screen Wash	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	531	-
2a1.5.51	Secondary Sample	-	3	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	83	-
2a1.5.52	Secondary Sample - RCA	-	4	-	0	3	1	-	2	11	11	-	-	29	3	-	-	-	1,464	108	-
2a1.5.53	Secondary Wet Layup	-	17	-	-	-	-	-	2	19	-	-	19	-	-	-	-	-	-	503	-
2a1.5.54	Secondary Wet Layup - RCA	-	14	0	1	7	18	-	9	50	50	-	-	67	37	-	-	-	6,050	350	-
2a1.5.55	Turbine Building HVAC	-	13	-	-	-	-	-	2	15	-	-	15	-	-	-	-	-	-	390	-
2a1.5.56	Turbine Lube Oil	-	31	-	-	-	-	-	5	35	-	-	35	-	-	-	-	-	-	906	-
2a1.5.57	Turbine Plant Chemical Addition	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	77	-
2a1.5.58	Turbine Plant Cooling Water	-	66	-	-	-	-	-	10	76	-	-	76	-	-	-	-	-	-	1,975	-
2a1.5.59	Turbine Plant Cooling Water - Insulated	-	36	-	-	-	-	-	5	42	-	-	42	-	-	-	-	-	-	1,107	-
2a1.5.60	Turbine Steam	-	49	-	-	-	-	-	7	57	-	-	57	-	-	-	-	-	-	1,498	-
2a1.5.61	Turbine Steam - Insulated	-	22	-	-	-	-	-	3	25	-	-	25	-	-	-	-	-	-	669	-
2a1.5	Totals	207	3,920	46	134	1,113	1,493	-	1,375	8,288	5,143	-	3,145	10,968	3,164	-	-	-	720,311	115,498	-
2a1.6	Scaffolding in support of decommissioning	-	143	2	1	16	1	-	39	202	202	-	-	146	7	-	-	-	7,318	4,238	-
2a1	Subtotal Period 2a Activity Costs	825	13,520	8,130	6,070	4,181	21,211	367	18,341	72,644	69,499	-	3,145	28,804	32,190	2,280	976	-	5,792,704	238,343	2,205
Period 2a Additional Costs																					
2a2.1	Curie Surcharge (excluding RPV)	-	-	-	-	-	704	-	176	880	880	-	-	-	-	-	-	-	-	-	-
2a2	Subtotal Period 2a Additional Costs	-	-	-	-	-	704	-	176	880	880	-	-	-	-	-	-	-	-	-	-

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Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 2a Collateral Costs																					
2a.3.1	Process liquid waste	67	-	38	191	-	521	-	196	1,013	1,013	-	-	-	-	622	-	-	85,066	95	-
2a.3.2	Small tool allowance	-	165	-	-	-	-	-	25	190	171	-	19	-	-	-	-	-	-	-	-
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	112	17	129	-	129	-	-	-	-	-	-	-	-	-
2a.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	133	13	146	146	-	-	-	-	-	-	-	-	-	-
2a.3.5	Fixed Overhead	-	-	-	-	-	-	1,092	164	1,255	1,255	-	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	67	165	38	191	-	521	1,337	415	2,733	2,585	129	19	-	-	622	-	-	85,066	95	-
Period 2a Period-Dependent Costs																					
2a.4.1	Decon supplies	58	-	-	-	-	-	-	15	73	73	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	582	58	641	641	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	682	68	750	675	-	75	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	1,136	-	-	-	-	-	284	1,420	1,420	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	2,366	-	-	-	-	-	355	2,721	2,721	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	-	42	45	-	339	-	98	521	521	-	-	-	3,262	-	-	-	65,363	801	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	913	137	1,050	1,050	-	-	-	-	-	-	-	-	-	-
2a.4.8	NRC Fees	-	-	-	-	-	-	447	45	492	492	-	-	-	-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	170	17	187	-	187	-	-	-	-	-	-	-	-	-
2a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	1,360	204	1,564	-	1,564	-	-	-	-	-	-	-	-	-
2a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	50	7	57	-	57	-	-	-	-	-	-	-	-	-
2a.4.12	NEI Fees	-	-	-	-	-	-	179	18	196	196	-	-	-	-	-	-	-	-	-	-
2a.4.13	Security Staff Cost	-	-	-	-	-	-	2,011	302	2,313	2,313	-	-	-	-	-	-	-	-	-	100,311
2a.4.14	DOC Staff Cost	-	-	-	-	-	-	13,897	2,085	15,981	15,981	-	-	-	-	-	-	-	-	-	216,274
2a.4.15	Utility Staff Cost	-	-	-	-	-	-	23,716	3,557	27,273	27,273	-	-	-	-	-	-	-	-	-	421,849
2a.4	Subtotal Period 2a Period-Dependent Costs	58	3,502	42	45	-	339	44,006	7,247	55,239	53,356	1,808	75	-	3,262	-	-	-	65,363	801	738,434
2a.0	TOTAL PERIOD 2a COST	950	17,167	8,210	6,305	4,181	22,775	45,710	26,178	131,496	126,320	1,937	3,239	28,804	35,452	2,902	976	-	5,943,134	239,239	740,639
PERIOD 2b - Site Decontamination																					
Period 2b Direct Decommissioning Activities																					
Disposal of Plant Systems																					
2b.1.1.1	Containment Emergency Filter	-	4	-	0	5	1	-	2	12	12	-	-	45	1	-	-	-	1,940	111	-
2b.1.1.2	Containment Normal & Emerg Cooling	-	488	9	39	711	112	-	263	1,620	1,620	-	-	7,004	230	-	-	-	305,021	10,768	-
2b.1.1.3	Containment Normal & Emerg Cooling - Ins	-	3	0	0	0	6	-	3	13	13	-	-	3	13	-	-	-	1,282	80	-
2b.1.1.4	Containment Purge	-	39	2	7	74	60	-	37	219	219	-	-	729	124	-	-	-	40,682	968	-
2b.1.1.5	Containment Spray	-	56	4	10	14	163	-	59	305	305	-	-	134	334	-	-	-	35,424	1,417	-
2b.1.1.6	Containment Spray - Insulated	-	44	3	5	4	96	-	37	189	189	-	-	44	198	-	-	-	19,524	1,074	-
2b.1.1.7	EDG Building HVAC	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	39	-
2b.1.1.8	Electrical - Decontaminated	-	1,574	40	128	885	1,604	-	947	5,158	5,158	-	-	8,520	3,292	-	-	-	641,383	39,840	-
2b.1.1.9	Emergency Diesel Engine & Oil	-	52	-	-	-	-	-	8	60	-	-	60	-	-	-	-	-	-	1,507	-
2b.1.1.10	Emergency Diesel Engine & Oil - Ins	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	62	-
2b.1.1.11	Fire Protection - RCA	-	76	3	7	24	105	-	58	284	264	-	-	232	215	-	-	-	28,720	1,816	-
2b.1.1.12	Instrument Air - Insulated - RCA	-	51	1	3	10	45	-	26	136	136	-	-	100	92	-	-	-	12,291	1,303	-
2b.1.1.13	Instrument Air - RCA	-	30	1	2	6	28	-	16	83	83	-	-	63	58	-	-	-	7,789	749	-
2b.1.1.14	Miscellaneous - RCA	-	6	0	1	16	13	-	7	43	43	-	-	155	26	-	-	-	8,613	143	-
2b.1.1.15	Primary Water Makeup	-	58	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,691	-
2b.1.1.16	Refueling Equipment	-	114	5	14	71	194	-	98	488	488	-	-	700	399	-	-	-	64,237	2,945	-
2b.1.1.17	Residual Heat Removal	117	65	29	67	151	1,105	-	386	1,920	1,920	-	-	1,485	2,269	-	-	-	263,705	1,941	-
2b.1.1.18	Residual Heat Removal - Insulated	176	192	14	36	76	594	-	303	1,394	1,394	-	-	769	1,220	-	-	-	140,654	6,589	-
2b.1.1.19	Safety Injection Accumulator	-	176	7	22	273	174	-	132	784	784	-	-	2,887	369	-	-	-	141,108	4,448	-
2b.1.1.20	Service Water	-	0	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	10	-
2b.1.1.21	Service Water - RCA	-	3	0	0	3	4	-	2	13	13	-	-	27	9	-	-	-	1,689	78	-
2b.1.1.22	Steam Generator Wet Layup	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	25	-
2b.1.1.23	Steam Generator Wet Layup - RCA	-	1	-	0	0	2	-	1	4	4	-	-	2	4	-	-	-	438	28	-
2b.1.1.24	Waste Disposal	16	29	1	3	7	48	-	26	131	131	-	-	65	102	-	-	-	11,109	1,098	-
2b.1.1.25	Waste Disposal - Insulated	45	61	3	6	6	102	-	65	288	286	-	-	54	209	-	-	-	20,959	2,458	-
2b.1.1	Totals	354	3,123	123	352	2,316	4,454	-	2,472	13,194	13,063	-	131	22,817	9,164	-	-	-	1,746,769	81,167	-
2b.1.2	Scaffolding in support of decommissioning	-	179	2	1	21	1	-	49	253	253	-	-	183	9	-	-	-	9,147	5,298	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
Decontamination of Site Buildings																					
2b.1.3.1	Containment	684	652	87	128	229	311	-	645	2,735	2,735	-	-	8,960	1,672	-	-	-	756,487	32,392	-
2b.1.3	Totals	684	652	87	128	229	311	-	645	2,735	2,735	-	-	8,960	1,672	-	-	-	756,487	32,392	-
2b.1	Subtotal Period 2b Activity Costs	1,038	3,954	212	481	2,566	4,766	-	3,166	16,182	16,051	-	131	31,960	10,845	-	-	-	2,512,403	118,657	-
Period 2b Additional Costs																					
2b.2.1	Seaweed Remediation & Disposal	-	33	1	339	-	967	-	301	1,641	1,641	-	-	-	29,650	-	-	-	593,000	494	-
2b.2	Subtotal Period 2b Additional Costs	-	33	1	339	-	967	-	301	1,641	1,641	-	-	-	29,650	-	-	-	593,000	494	-
Period 2b Collateral Costs																					
2b.3.1	Process liquid waste	48	-	117	390	-	1,312	-	422	2,288	2,288	-	-	-	-	1,456	-	-	230,882	94	-
2b.3.2	Small tool allowance	-	79	-	-	-	-	-	12	91	91	-	-	-	-	-	-	-	-	-	-
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	4,158	624	4,782	-	4,782	-	-	-	-	-	-	-	-	-
2b.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	150	15	165	165	-	-	-	-	-	-	-	-	-	-
2b.3.5	Fixed Overhead	-	-	-	-	-	-	2,107	316	2,423	2,423	-	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	48	79	117	390	-	1,312	6,414	1,389	9,748	4,987	4,782	-	-	-	1,456	-	-	230,882	94	-
Period 2b Period-Dependent Costs																					
2b.4.1	Decon supplies	351	-	-	-	-	-	-	88	439	439	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	1,124	112	1,236	1,236	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	-	-	-	-	-	-	1,316	132	1,447	1,447	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	1,047	-	-	-	-	-	262	1,309	1,309	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	4,594	-	-	-	-	-	689	5,283	5,283	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	37	39	-	295	-	83	454	454	-	-	-	2,843	-	-	-	56,963	698	-
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,391	209	1,600	1,600	-	-	-	-	-	-	-	-	-	-
2b.4.8	NRC Fees	-	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	329	33	362	-	362	-	-	-	-	-	-	-	-	-
2b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	2,624	394	3,017	-	3,017	-	-	-	-	-	-	-	-	-
2b.4.11	Radwaste Processing Equipment/Services	-	-	-	-	-	-	474	71	545	545	-	-	-	-	-	-	-	-	-	-
2b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	96	14	111	-	111	-	-	-	-	-	-	-	-	-
2b.4.13	NEI Fees	-	-	-	-	-	-	345	34	379	379	-	-	-	-	-	-	-	-	-	-
2b.4.14	Security Staff Cost	-	-	-	-	-	-	1,404	211	1,614	1,614	-	-	-	-	-	-	-	-	-	70,016
2b.4.15	DOC Staff Cost	-	-	-	-	-	-	17,942	2,691	20,633	20,633	-	-	-	-	-	-	-	-	-	296,537
2b.4.16	Utility Staff Cost	-	-	-	-	-	-	30,323	4,548	34,871	34,871	-	-	-	-	-	-	-	-	-	562,871
2b.4	Subtotal Period 2b Period-Dependent Costs	351	5,641	37	39	-	295	58,228	9,857	74,249	70,759	3,490	-	-	2,843	-	-	-	56,963	698	929,424
2b.0	TOTAL PERIOD 2b COST	1,437	9,708	366	1,248	2,566	7,340	64,642	14,513	101,819	93,417	8,272	131	31,960	43,338	1,456	-	-	3,393,247	120,143	929,424
PERIOD 2c - Decontamination Following Wet Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
2c.1.1	Remove spent fuel racks	334	34	73	63	-	343	-	278	1,124	1,124	-	-	-	2,106	-	-	-	210,600	1,023	-
Disposal of Plant Systems																					
2c.1.2.1	Electrical - Contaminated	-	174	2	9	160	20	-	74	439	439	-	-	1,574	42	-	-	-	67,658	4,404	-
2c.1.2.2	Fuel Handling HVAC	-	46	1	4	67	9	-	24	151	151	-	-	662	18	-	-	-	26,461	1,046	-
2c.1.2.3	Spent Fuel Pool Cooling	54	82	5	13	23	217	-	107	501	501	-	-	231	451	-	-	-	49,278	2,961	-
2c.1.2.4	Spent Fuel Pool Cooling - Insulated	32	38	2	5	7	84	-	49	217	217	-	-	68	174	-	-	-	18,305	1,505	-
2c.1.2	Totals	85	341	10	30	257	330	-	254	1,308	1,308	-	-	2,534	684	-	-	-	163,702	9,916	-
Decontamination of Site Buildings																					
2c.1.3.1	Fuel Handling	271	314	4	13	133	39	-	246	1,020	1,020	-	-	1,306	244	-	-	-	76,919	14,348	-
2c.1.3	Totals	271	314	4	13	133	39	-	246	1,020	1,020	-	-	1,306	244	-	-	-	76,919	14,348	-
2c.1.4	Scaffolding in support of decommissioning	-	38	0	0	4	0	-	10	51	51	-	-	37	2	-	-	-	1,829	1,060	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
2c.1	Subtotal Period 2c Activity Costs	690	724	88	106	394	712	-	788	3,503	3,503	-	-	3,877	3,038	-	-	-	453,051	26,348	-
Period 2c Collateral Costs																					
2c.3.1	Process liquid waste	54	-	33	163	-	456	-	169	874	874	-	-	-	-	532	-	-	73,198	80	-
2c.3.2	Small tool allowance	-	24	-	-	-	-	-	4	27	27	-	-	-	-	-	-	-	-	-	-
2c.3.3	Decommissioning Equipment Disposition	-	-	64	48	675	49	-	127	963	963	-	-	6,000	300	-	-	-	300,000	735	-
2c.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	28	3	31	31	-	-	-	-	-	-	-	-	-	-
2c.3.5	Fixed Overhead	-	-	-	-	-	-	441	66	507	507	-	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	54	24	97	211	675	505	469	368	2,402	2,402	-	-	6,000	300	532	-	-	373,198	815	-
Period 2c Period-Dependent Costs																					
2c.4.1	Decon supplies	60	-	-	-	-	-	-	15	75	75	-	-	-	-	-	-	-	-	-	-
2c.4.2	Insurance	-	-	-	-	-	-	235	24	259	259	-	-	-	-	-	-	-	-	-	-
2c.4.3	Property taxes	-	-	-	-	-	-	275	28	303	303	-	-	-	-	-	-	-	-	-	-
2c.4.4	Health physics supplies	-	226	-	-	-	-	-	57	283	283	-	-	-	-	-	-	-	-	-	-
2c.4.5	Heavy equipment rental	-	961	-	-	-	-	-	144	1,105	1,105	-	-	-	-	-	-	-	-	-	-
2c.4.6	Disposal of DAW generated	-	-	9	10	-	74	-	21	115	115	-	-	-	718	-	-	-	14,379	176	-
2c.4.7	Plant energy budget	-	-	-	-	-	-	155	23	178	178	-	-	-	-	-	-	-	-	-	-
2c.4.8	NRC Fees	-	-	-	-	-	-	180	18	198	198	-	-	-	-	-	-	-	-	-	-
2c.4.9	Emergency Planning Fees	-	-	-	-	-	-	28	3	31	-	31	-	-	-	-	-	-	-	-	-
2c.4.10	Radwaste Processing Equipment/Services	-	-	-	-	-	-	198	30	228	228	-	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	20	3	23	-	23	-	-	-	-	-	-	-	-	-
2c.4.12	NEI Fees	-	-	-	-	-	-	72	7	79	79	-	-	-	-	-	-	-	-	-	-
2c.4.13	Security Staff Cost	-	-	-	-	-	-	294	44	338	338	-	-	-	-	-	-	-	-	-	14,644
2c.4.14	DOC Staff Cost	-	-	-	-	-	-	2,547	382	2,929	2,929	-	-	-	-	-	-	-	-	-	41,923
2c.4.15	Utility Staff Cost	-	-	-	-	-	-	4,123	618	4,741	4,741	-	-	-	-	-	-	-	-	-	78,677
2c.4	Subtotal Period 2c Period-Dependent Costs	60	1,187	9	10	-	74	8,127	1,416	10,884	10,831	54	-	-	718	-	-	-	14,379	176	135,244
2c.0	TOTAL PERIOD 2c COST	804	1,935	194	327	1,069	1,292	8,596	2,572	16,789	16,735	54	-	9,877	4,053	532	-	-	840,628	27,337	135,244
PERIOD 2d - Delay before License Termination																					
Period 2d Direct Decommissioning Activities																					
Period 2d Collateral Costs																					
2d.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	0	-	0	0	-	-	-	-	-	-	-	-	-	-
2d.3.2	Fixed Overhead	-	-	-	-	-	-	629	94	723	723	-	-	-	-	-	-	-	-	-	-
2d.3	Subtotal Period 2d Collateral Costs	-	-	-	-	-	-	629	94	724	724	-	-	-	-	-	-	-	-	-	-
Period 2d Period-Dependent Costs																					
2d.4.1	Insurance	-	-	-	-	-	-	305	30	335	335	-	-	-	-	-	-	-	-	-	-
2d.4.2	Property taxes	-	-	-	-	-	-	393	39	432	432	-	-	-	-	-	-	-	-	-	-
2d.4.3	Health physics supplies	-	48	-	-	-	-	-	12	60	60	-	-	-	-	-	-	-	-	-	-
2d.4.4	Disposal of DAW generated	-	-	1	1	-	8	-	2	13	13	-	-	-	79	-	-	-	1,593	20	-
2d.4.5	Plant energy budget	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2d.4.6	NRC Fees	-	-	-	-	-	-	25	2	27	27	-	-	-	-	-	-	-	-	-	-
2d.4.7	Emergency Planning Fees	-	-	-	-	-	-	40	4	44	-	44	-	-	-	-	-	-	-	-	-
2d.4.8	ISFSI Operating Costs	-	-	-	-	-	-	29	4	33	-	33	-	-	-	-	-	-	-	-	-
2d.4.9	NEI Fees	-	-	-	-	-	-	103	10	113	113	-	-	-	-	-	-	-	-	-	-
2d.4.10	Security Staff Cost	-	-	-	-	-	-	230	35	265	265	-	-	-	-	-	-	-	-	-	11,460
2d.4.11	Utility Staff Cost	-	-	-	-	-	-	663	99	763	763	-	-	-	-	-	-	-	-	-	13,120
2d.4	Subtotal Period 2d Period-Dependent Costs	-	48	1	1	-	8	1,787	239	2,084	2,008	77	-	-	79	-	-	-	1,593	20	24,600
2d.0	TOTAL PERIOD 2d COST	-	48	1	1	-	8	2,416	334	2,808	2,731	77	-	-	79	-	-	-	1,593	20	24,600

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 2e - License Termination																					
Period 2e Direct Decommissioning Activities																					
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
2e.1.2	Terminate license									a											
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
Period 2e Additional Costs																					
2e.2.1	License Termination Survey	-	-	-	-	-	-	3,396	1,019	4,415	4,415	-	-	-	-	-	-	-	-	71,027	-
2e.2	Subtotal Period 2e Additional Costs	-	-	-	-	-	-	3,396	1,019	4,415	4,415	-	-	-	-	-	-	-	-	71,027	-
Period 2e Collateral Costs																					
2e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
2e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
2e.3.3	Fixed Overhead	-	-	-	-	-	-	603	90	693	693	-	-	-	-	-	-	-	-	-	-
2e.3	Subtotal Period 2e Collateral Costs	-	-	-	-	-	-	1,892	284	2,176	2,176	-	-	-	-	-	-	-	-	-	-
Period 2e Period-Dependent Costs																					
2e.4.1	Insurance	-	-	-	-	-	-	292	29	321	321	-	-	-	-	-	-	-	-	-	-
2e.4.2	Property taxes	-	-	-	-	-	-	376	38	414	414	-	-	-	-	-	-	-	-	-	-
2e.4.3	Health physics supplies	-	423	-	-	-	-	-	106	529	529	-	-	-	-	-	-	-	-	-	-
2e.4.4	Disposal of DAW generated	-	-	4	4	-	32	-	9	49	49	-	-	-	305	-	-	-	6,105	75	-
2e.4.5	Plant energy budget	-	-	-	-	-	-	106	16	122	122	-	-	-	-	-	-	-	-	-	-
2e.4.6	NRC Fees	-	-	-	-	-	-	247	25	271	271	-	-	-	-	-	-	-	-	-	-
2e.4.7	Emergency Planning Fees	-	-	-	-	-	-	38	4	42	-	42	-	-	-	-	-	-	-	-	-
2e.4.8	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
2e.4.9	NEI Fees	-	-	-	-	-	-	99	10	108	108	-	-	-	-	-	-	-	-	-	-
2e.4.10	Security Staff Cost	-	-	-	-	-	-	221	33	254	254	-	-	-	-	-	-	-	-	-	11,000
2e.4.11	DOC Staff Cost	-	-	-	-	-	-	2,169	325	2,495	2,495	-	-	-	-	-	-	-	-	-	36,143
2e.4.12	Utility Staff Cost	-	-	-	-	-	-	2,365	355	2,720	2,720	-	-	-	-	-	-	-	-	-	40,857
2e.4	Subtotal Period 2e Period-Dependent Costs	-	423	4	4	-	32	5,941	953	7,357	7,284	73	-	-	305	-	-	-	6,105	75	88,000
2e.0	TOTAL PERIOD 2e COST	-	423	4	4	-	32	11,355	2,294	14,111	14,038	73	-	-	305	-	-	-	6,105	71,102	88,000
PERIOD 2 TOTALS		3,190	29,301	6,775	7,685	7,816	31,447	132,718	45,890	267,024	253,241	10,413	3,370	70,641	83,227	4,890	976	-	10,184,710	457,841	1,917,908
PERIOD 3b - Site Restoration																					
Period 3b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
3b.1.1.1	Containment	-	3,149	-	-	-	-	-	472	3,621	-	-	3,621	-	-	-	-	-	-	48,080	-
3b.1.1.2	Miscellaneous Structures	-	137	-	-	-	-	-	21	158	-	-	158	-	-	-	-	-	-	2,631	-
3b.1.1.3	Seawall	-	75	-	-	-	-	-	11	87	-	-	87	-	-	-	-	-	-	1,251	-
3b.1.1.4	Turbine	-	432	-	-	-	-	-	65	498	-	-	498	-	-	-	-	-	-	9,343	-
3b.1.1.5	Turbine Pedestal	-	357	-	-	-	-	-	54	411	-	-	411	-	-	-	-	-	-	5,055	-
3b.1.1.6	Fuel Handling	-	403	-	-	-	-	-	61	464	-	-	464	-	-	-	-	-	-	6,880	-
3b.1.1	Totals	-	4,553	-	-	-	-	-	683	5,236	-	-	5,236	-	-	-	-	-	-	73,241	-
Site Closeout Activities																					
3b.1.2	Grade & landscape site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3b.1.3	Final report to NRC	-	-	-	-	-	-	149	22	171	171	-	-	-	-	-	-	-	-	-	1,560
3b.1	Subtotal Period 3b Activity Costs	-	4,553	-	-	-	-	149	705	5,407	171	-	5,236	-	-	-	-	-	-	73,241	1,560
Period 3b Additional Costs																					
3b.2.1	Concrete Processing	-	166	-	-	-	-	1	25	192	-	-	192	-	-	-	-	-	-	1,104	-
3b.2	Subtotal Period 3b Additional Costs	-	166	-	-	-	-	1	25	192	-	-	192	-	-	-	-	-	-	1,104	-

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 3b Collateral Costs																					
3b.3.1	Small tool allowance	-	48	-	-	-	-	-	7	55	-	-	55	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	48	-	-	-	-	-	7	55	-	-	55	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Insurance	-	-	-	-	-	-	741	74	815	-	815	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	956	96	1,051	-	1,051	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	4,531	-	-	-	-	-	680	5,211	-	-	5,211	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	135	20	155	-	46	108	-	-	-	-	-	-	-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	194	19	213	-	213	-	-	-	-	-	-	-	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	97	10	106	-	106	-	-	-	-	-	-	-	-	-
3b.4.7	ISFSI Operating Costs	-	-	-	-	-	-	70	10	80	-	80	-	-	-	-	-	-	-	-	-
3b.4.8	Security Staff Cost	-	-	-	-	-	-	560	84	644	-	483	161	-	-	-	-	-	-	-	27,920
3b.4.9	DOC Staff Cost	-	-	-	-	-	-	6,088	913	7,002	-	-	7,002	-	-	-	-	-	-	-	95,726
3b.4.10	Utility Staff Cost	-	-	-	-	-	-	3,371	506	3,876	-	1,318	2,558	-	-	-	-	-	-	-	53,846
3b.4	Subtotal Period 3b Period-Dependent Costs	-	4,531	-	-	-	-	12,210	2,412	19,154	-	4,113	15,041	-	-	-	-	-	-	-	177,491
3b.0	TOTAL PERIOD 3b COST	-	9,296	-	-	-	-	12,360	3,149	24,808	171	4,113	20,524	-	-	-	-	-	-	74,345	179,051
PERIOD 3c - Fuel Storage Operations/Shipping																					
Period 3c Direct Decommissioning Activities																					
Period 3c Collateral Costs																					
3c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,650	248	1,898	-	1,898	-	-	-	-	-	-	-	-	-
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	1,650	248	1,898	-	1,898	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs																					
3c.4.1	Insurance	-	-	-	-	-	-	4,617	462	5,078	-	5,078	-	-	-	-	-	-	-	-	-
3c.4.2	Property taxes	-	-	-	-	-	-	5,956	596	6,552	-	6,552	-	-	-	-	-	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	252	38	290	-	290	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	1,209	121	1,330	-	1,330	-	-	-	-	-	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	602	60	662	-	662	-	-	-	-	-	-	-	-	-
3c.4.6	ISFSI Operating Costs	-	-	-	-	-	-	436	65	501	-	501	-	-	-	-	-	-	-	-	-
3c.4.7	Security Staff Cost	-	-	-	-	-	-	2,617	393	3,009	-	3,009	-	-	-	-	-	-	-	-	130,530
3c.4.8	Utility Staff Cost	-	-	-	-	-	-	7,068	1,060	8,126	-	8,126	-	-	-	-	-	-	-	-	121,331
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	22,754	2,794	25,548	-	25,548	-	-	-	-	-	-	-	-	251,861
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	24,404	3,041	27,446	-	27,446	-	-	-	-	-	-	-	-	251,861
PERIOD 3d - GTCC shipping																					
Period 3d Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
3d.1.1	Totals	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
Period 3d Period-Dependent Costs																					
3d.4.1	Insurance	-	-	-	-	-	-	15	1	16	-	16	-	-	-	-	-	-	-	-	-
3d.4.2	Property taxes	-	-	-	-	-	-	19	2	21	-	21	-	-	-	-	-	-	-	-	-
3d.4.3	Plant energy budget	-	-	-	-	-	-	1	0	1	-	1	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	4	0	4	-	4	-	-	-	-	-	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	2	0	2	-	2	-	-	-	-	-	-	-	-	-
3d.4.6	ISFSI Operating Costs	-	-	-	-	-	-	1	0	2	-	2	-	-	-	-	-	-	-	-	-
3d.4.7	Security Staff Cost	-	-	-	-	-	-	8	1	10	-	10	-	-	-	-	-	-	-	-	420
3d.4.8	Utility Staff Cost	-	-	-	-	-	-	23	3	26	-	26	-	-	-	-	-	-	-	-	390
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	73	9	82	-	82	-	-	-	-	-	-	-	-	810

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
3d.0	TOTAL PERIOD 3d COST	-	-	45	-	-	9,040	73	1,370	10,528	10,446	82	-	-	-	-	-	487	100,132	-	810
PERIOD 3e - ISFSI Decontamination																					
Period 3e Direct Decommissioning Activities																					
Period 3e Additional Costs																					
3e.2.1	ISFSI license termination	-	196	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
3e.2	Subtotal Period 3e Additional Costs	-	196	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
Period 3e Collateral Costs																					
3e.3.1	Small tool allowance	-	2	-	-	-	-	-	0	2	-	2	-	-	-	-	-	-	-	-	-
3e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	3	0	4	-	4	-	-	-	-	-	-	-	-	-
3e.3	Subtotal Period 3e Collateral Costs	-	2	-	-	-	-	3	1	6	-	6	-	-	-	-	-	-	-	-	-
Period 3e Period-Dependent Costs																					
3e.4.1	Insurance	-	-	-	-	-	-	128	13	141	-	141	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	166	17	182	-	182	-	-	-	-	-	-	-	-	-
3e.4.3	Heavy equipment rental	-	233	-	-	-	-	-	35	268	-	268	-	-	-	-	-	-	-	-	-
3e.4.4	Plant energy budget	-	-	-	-	-	-	23	4	27	-	27	-	-	-	-	-	-	-	-	-
3e.4.5	NRC ISFSI Fees	-	-	-	-	-	-	34	3	37	-	37	-	-	-	-	-	-	-	-	-
3e.4.6	Security Staff Cost	-	-	-	-	-	-	36	5	42	-	42	-	-	-	-	-	-	-	-	1,616
3e.4.7	Utility Staff Cost	-	-	-	-	-	-	183	27	211	-	211	-	-	-	-	-	-	-	-	2,939
3e.4	Subtotal Period 3e Period-Dependent Costs	-	233	-	-	-	-	571	104	907	-	907	-	-	-	-	-	-	-	-	4,757
3e.0	TOTAL PERIOD 3e COST	-	433	4	44	-	303	1,279	343	2,404	-	2,404	-	-	1,633	-	-	-	165,471	3,760	6,037
PERIOD 3f - ISFSI Site Restoration																					
Period 3f Direct Decommissioning Activities																					
Period 3f Additional Costs																					
3f.2.1	ISFSI site restoration	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
3f.2	Subtotal Period 3f Additional Costs	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
Period 3f Collateral Costs																					
3f.3.1	Small tool allowance	-	1	-	-	-	-	-	0	1	-	1	-	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	1	-	-	-	-	-	0	1	-	1	-	-	-	-	-	-	-	-	-
Period 3f Period-Dependent Costs																					
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	84	8	92	-	92	-	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	77	-	-	-	-	-	12	88	-	88	-	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	12	2	14	-	14	-	-	-	-	-	-	-	-	-
3f.4.5	Security Staff Cost	-	-	-	-	-	-	18	3	21	-	21	-	-	-	-	-	-	-	-	917
3f.4.6	Utility Staff Cost	-	-	-	-	-	-	85	13	98	-	98	-	-	-	-	-	-	-	-	1,307
3f.4	Subtotal Period 3f Period-Dependent Costs	-	77	-	-	-	-	199	37	313	-	313	-	-	-	-	-	-	-	-	2,224
3f.0	TOTAL PERIOD 3f COST	-	464	-	-	-	-	220	98	782	-	782	-	-	-	-	-	-	-	1,129	2,304
PERIOD 3 TOTALS		-	10,196	49	44	-	9,343	38,336	8,002	65,969	10,617	34,827	20,524	-	1,633	-	-	487	265,603	79,234	440,064
TOTAL COST TO DECOMMISSION		6,136	41,746	9,210	9,124	7,816	44,941	246,196	67,576	432,745	359,361	48,307	25,077	70,641	91,705	9,269	976	487	11,240,690	545,396	3,231,367

Table C-1
Turkey Point Plant, Unit 3
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 19.51% CONTINGENCY:	$432,745	thousands of	2004 dollars
TOTAL NRC LICENSE TERMINATION COST IS 83.04% OR:	$359,361	thousands of	2004 dollars
SPENT FUEL MANAGEMENT COST IS 11.16% OR:	$48,307	thousands of	2004 dollars
NON-NUCLEAR DEMOLITION COST IS 5.79% OR:	$25,077	thousands of	2004 dollars
TOTAL RADWASTE VOLUME BURIED (EXCLUDING GTCC):	101,950	cubic feet	
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	487	cubic feet	
TOTAL SCRAP METAL REMOVED:	31,374	tons	
TOTAL CRAFT LABOR REQUIREMENTS:	545,398	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

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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	Prepare preliminary decommissioning cost	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
1a.1.2	Notification of Cessation of Operations									a											
1a.1.3	Remove fuel & source material									n/a											
1a.1.4	Notification of Permanent Defueling									a											
1a.1.5	Deactivate plant systems & process waste									a											
1a.1.6	Prepare and submit PSDAR	-	-	-	-	-	-	82	12	94	94	-	-	-	-	-	-	-	-	-	856
1a.1.7	Review plant dwgs & specs	-	-	-	-	-	-	188	28	216	216	-	-	-	-	-	-	-	-	-	1,969
1a.1.8	Perform detailed rad survey									a											
1a.1.9	Estimate by-product inventory	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1a.1.10	End product description	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1a.1.11	Detailed by-product inventory	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
1a.1.12	Define major work sequence	-	-	-	-	-	-	307	46	353	353	-	-	-	-	-	-	-	-	-	3,210
1a.1.13	Perform SER and EA	-	-	-	-	-	-	127	19	146	146	-	-	-	-	-	-	-	-	-	1,327
1a.1.14	Perform Site-Specific Cost Study	-	-	-	-	-	-	204	31	235	235	-	-	-	-	-	-	-	-	-	2,140
1a.1.15	Prepare/submit License Termination Plan	-	-	-	-	-	-	168	25	193	193	-	-	-	-	-	-	-	-	-	1,753
1a.1.16	Receive NRC approval of termination plan									a											
Activity Specifications																					
1a.1.17.1	Plant & temporary facilities	-	-	-	-	-	-	201	30	231	208	-	23	-	-	-	-	-	-	-	2,108
1a.1.17.2	Plant systems	-	-	-	-	-	-	170	26	196	176	-	20	-	-	-	-	-	-	-	1,783
1a.1.17.3	NSSS Decontamination Flush	-	-	-	-	-	-	20	3	24	24	-	-	-	-	-	-	-	-	-	214
1a.1.17.4	Reactor internals	-	-	-	-	-	-	290	44	334	334	-	-	-	-	-	-	-	-	-	3,039
1a.1.17.5	Reactor vessel	-	-	-	-	-	-	266	40	306	306	-	-	-	-	-	-	-	-	-	2,782
1a.1.17.6	Biological shield	-	-	-	-	-	-	20	3	24	24	-	-	-	-	-	-	-	-	-	214
1a.1.17.7	Steam generators	-	-	-	-	-	-	128	19	147	147	-	-	-	-	-	-	-	-	-	1,335
1a.1.17.8	Reinforced concrete	-	-	-	-	-	-	65	10	75	38	-	38	-	-	-	-	-	-	-	685
1a.1.17.9	Main Turbine	-	-	-	-	-	-	16	2	19	-	-	19	-	-	-	-	-	-	-	171
1a.1.17.10	Main Condensers	-	-	-	-	-	-	16	2	19	-	-	19	-	-	-	-	-	-	-	171
1a.1.17.11	Plant structures & buildings	-	-	-	-	-	-	128	19	147	73	-	73	-	-	-	-	-	-	-	1,335
1a.1.17.12	Waste management	-	-	-	-	-	-	188	28	216	216	-	-	-	-	-	-	-	-	-	1,969
1a.1.17.13	Facility & site closeout	-	-	-	-	-	-	37	6	42	21	-	21	-	-	-	-	-	-	-	385
1a.1.17	Total	-	-	-	-	-	-	1,547	232	1,779	1,567	-	213	-	-	-	-	-	-	-	16,190
Planning & Site Preparations																					
1a.1.18	Prepare dismantling sequence	-	-	-	-	-	-	98	15	113	113	-	-	-	-	-	-	-	-	-	1,027
1a.1.19	Plant prep. & temp. svces	-	-	-	-	-	-	2,419	363	2,782	2,782	-	-	-	-	-	-	-	-	-	-
1a.1.20	Design water clean-up system	-	-	-	-	-	-	57	9	66	66	-	-	-	-	-	-	-	-	-	599
1a.1.21	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,048	307	2,355	2,355	-	-	-	-	-	-	-	-	-	-
1a.1.22	Procure casks/liners & containers	-	-	-	-	-	-	50	8	58	58	-	-	-	-	-	-	-	-	-	526
1a.1	Subtotal Period 1a Activity Costs	-	-	-	-	-	-	7,483	1,123	8,606	8,393	-	213	-	-	-	-	-	-	-	31,566
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	853	128	981	-	981	-	-	-	-	-	-	-	-	-
1a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
1a.3.3	Fixed Overhead	-	-	-	-	-	-	800	120	920	920	-	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,654	248	1,902	921	981	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	878	88	966	966	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	-	404	-	-	-	8,103	99	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	704	106	810	810	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 (continued)																					
1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	125	12	137	-	137	-	-	-	-	-	-	-	-	-
1a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	997	149	1,146	-	1,146	-	-	-	-	-	-	-	-	-
1a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	37	5	42	-	42	-	-	-	-	-	-	-	-	-
1a.4.11	INPO Fees	-	-	-	-	-	-	450	45	495	495	-	-	-	-	-	-	-	-	-	-
1a.4.12	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-
1a.4.13	Security Staff Cost	-	-	-	-	-	-	1,181	177	1,358	1,356	-	-	-	-	-	-	-	-	-	58,921
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	24,097	3,615	27,712	27,712	-	-	-	-	-	-	-	-	-	438,000
1a.4	Subtotal Period 1a Period-Dependent Costs	-	582	5	6	-	42	29,364	4,411	34,411	33,085	1,325	-	-	404	-	-	-	8,103	99	496,921
1a.0	TOTAL PERIOD 1a COST	-	582	5	6	-	42	36,501	5,781	44,918	42,399	2,306	213	-	404	-	-	-	8,103	99	528,488
PERIOD 1b - Decommissioning Preparations																					
Period 1b Direct Decommissioning Activities																					
Detailed Work Procedures																					
1b.1.1.1	Plant systems	-	-	-	-	-	-	194	29	223	200	-	22	-	-	-	-	-	-	-	2,026
1b.1.1.2	NSSS Decontamination Flush	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1b.1.1.3	Reactor internals	-	-	-	-	-	-	102	15	118	118	-	-	-	-	-	-	-	-	-	1,070
1b.1.1.4	Remaining buildings	-	-	-	-	-	-	55	8	63	16	-	48	-	-	-	-	-	-	-	578
1b.1.1.5	CRD cooling assembly	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1b.1.1.6	CRD housings & ICI tubes	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1b.1.1.7	Incore instrumentation	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1b.1.1.8	Reactor vessel	-	-	-	-	-	-	146	22	171	171	-	-	-	-	-	-	-	-	-	1,554
1b.1.1.9	Facility closeout	-	-	-	-	-	-	49	7	56	28	-	28	-	-	-	-	-	-	-	514
1b.1.1.10	Missile shields	-	-	-	-	-	-	18	3	21	21	-	-	-	-	-	-	-	-	-	193
1b.1.1.11	Biological shield	-	-	-	-	-	-	49	7	56	56	-	-	-	-	-	-	-	-	-	514
1b.1.1.12	Steam generators	-	-	-	-	-	-	188	28	216	216	-	-	-	-	-	-	-	-	-	1,969
1b.1.1.13	Reinforced concrete	-	-	-	-	-	-	41	6	47	24	-	24	-	-	-	-	-	-	-	428
1b.1.1.14	Main Turbine	-	-	-	-	-	-	64	10	73	-	-	73	-	-	-	-	-	-	-	668
1b.1.1.15	Main Condensers	-	-	-	-	-	-	64	10	73	-	-	73	-	-	-	-	-	-	-	668
1b.1.1.16	Auxiliary building	-	-	-	-	-	-	112	17	128	116	-	13	-	-	-	-	-	-	-	1,168
1b.1.1.17	Reactor building	-	-	-	-	-	-	112	17	128	116	-	13	-	-	-	-	-	-	-	1,168
1b.1.1	Total	-	-	-	-	-	-	1,360	204	1,564	1,270	-	294	-	-	-	-	-	-	-	14,228
1b.1.2	Decon primary loop	919	-	-	-	-	-	-	460	1,379	1,379	-	-	-	-	-	-	-	-	1,067	-
1b.1	Subtotal Period 1b Activity Costs	919	-	-	-	-	-	1,360	663	2,942	2,648	-	294	-	-	-	-	-	-	1,067	14,228
Period 1b Additional Costs																					
1b.2.1	Site Characterization Survey	-	-	-	-	-	-	852	256	1,108	1,108	-	-	-	-	-	-	-	-	-	-
1b.2.2	Mixed/Hazardous Waste	-	-	648	280	7,237	-	-	1,192	9,357	9,357	-	-	44,914	-	-	-	-	2,348,763	9,449	-
1b.2.3	Spent Fuel Pool Isolation	-	-	-	-	-	-	5,572	1,672	7,244	7,244	-	-	-	-	-	-	-	-	-	-
1b.2.4	Asbestos removal program	-	361	0	71	-	80	-	121	633	633	-	-	-	5,894	-	-	-	48,806	6,508	-
1b.2	Subtotal Period 1b Additional Costs	-	361	648	351	7,237	80	6,425	3,241	18,342	18,342	-	-	44,914	5,894	-	-	-	2,397,569	15,957	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	720	-	-	-	-	-	-	108	828	828	-	-	-	-	-	-	-	-	-	-
1b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
1b.3.3	Process liquid waste	41	-	377	1,114	-	4,000	-	1,225	6,758	6,758	-	-	-	-	4,376	-	-	725,850	154	-
1b.3.4	Small tool allowance	-	6	-	-	-	-	-	1	7	7	-	-	-	-	-	-	-	-	-	-
1b.3.5	Pipe cutting equipment	-	957	-	-	-	-	-	143	1,100	1,100	-	-	-	-	-	-	-	-	-	-
1b.3.6	Decon rig	1,243	-	-	-	-	-	-	186	1,430	1,430	-	-	-	-	-	-	-	-	-	-
1b.3.7	Spent Fuel Capital and Transfer	-	-	-	-	-	-	588	88	676	-	676	-	-	-	-	-	-	-	-	-
1b.3.8	Florida LLRW Inspection Fee	-	-	-	-	-	-	108	11	119	119	-	-	-	-	-	-	-	-	-	-
1b.3.9	Fixed Overhead	-	-	-	-	-	-	524	79	602	602	-	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	2,004	962	377	1,114	-	4,000	2,509	2,035	13,002	12,328	676	-	-	-	4,376	-	-	725,850	154	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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																					
1b.4.1	Decon supplies	28	-	-	-	-	-	-	7	35	35	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	575	57	632	632	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	327	33	360	360	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	218	-	-	-	-	-	55	273	273	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	221	-	-	-	-	-	33	254	254	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	4	4	-	29	-	8	45	45	-	-	-	281	-	-	-	5,637	69	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	922	138	1,061	1,061	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	174	17	191	191	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	82	8	90	-	90	-	-	-	-	-	-	-	-	-
1b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	653	98	750	-	750	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-	-	-	-	-	-	24	4	28	-	28	-	-	-	-	-	-	-	-	-
1b.4.12	NEI Fees	-	-	-	-	-	-	86	9	94	94	-	-	-	-	-	-	-	-	-	-
1b.4.13	Security Staff Cost	-	-	-	-	-	-	773	116	889	889	-	-	-	-	-	-	-	-	-	38,581
1b.4.14	DOC Staff Cost	-	-	-	-	-	-	5,568	835	6,403	6,403	-	-	-	-	-	-	-	-	-	83,309
1b.4.15	Utility Staff Cost	-	-	-	-	-	-	15,871	2,381	18,252	18,252	-	-	-	-	-	-	-	-	-	288,166
1b.4	Subtotal Period 1b Period-Dependent Costs	28	439	4	4	-	29	25,055	3,799	29,358	28,490	868	-	-	281	-	-	-	5,637	69	410,056
1b.0	TOTAL PERIOD 1b COST	2,951	1,763	1,029	1,469	7,237	4,109	35,348	9,738	63,644	61,806	1,544	294	44,914	6,175	4,376	-	-	3,129,056	17,247	424,284
PERIOD 1 TOTALS		2,951	2,345	1,034	1,474	7,237	4,151	73,850	15,520	108,562	104,206	3,850	507	44,914	6,580	4,376	-	-	3,137,159	17,346	952,771
PERIOD 2a - Large Component Removal																					
Period 2a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
2a.1.1.1	Reactor Coolant Piping	45	35	4	14	-	152	-	72	321	321	-	-	-	401	-	-	-	48,444	1,954	-
2a.1.1.2	Pressurizer Relief Tank	19	16	3	9	-	92	-	38	178	178	-	-	-	265	-	-	-	29,424	863	-
2a.1.1.3	Reactor Coolant Pumps & Motors	35	51	28	376	114	1,847	-	569	3,022	3,022	-	-	183	2,364	-	-	-	633,930	2,416	-
2a.1.1.4	Pressurizer	28	41	421	481	-	479	-	257	1,706	1,706	-	-	-	1,793	-	-	-	197,230	2,243	-
2a.1.1.5	Steam Generators	248	2,162	1,725	2,758	1,931	2,825	-	2,196	13,645	13,645	-	-	10,819	9,831	-	-	-	2,166,271	23,142	-
2a.1.1.6	Retired Steam Generator Units	-	-	-	4,793	-	4,942	-	1,954	11,689	11,689	-	-	-	19,662	-	-	-	2,786,023	-	-
2a.1.1.7	CRDMs/ICIs/Service Structure Removal	108	71	86	60	-	247	-	151	724	724	-	-	-	3,474	-	-	-	76,625	4,149	-
2a.1.1.8	Reactor Vessel Internals	81	1,894	4,412	1,290	-	6,639	183	6,234	20,734	20,734	-	-	-	626	527	976	-	226,003	24,263	1,103
2a.1.1.9	Reactor Vessel	55	3,604	1,199	836	-	6,753	183	6,643	19,273	19,273	-	-	-	5,367	1,753	-	-	790,717	24,263	1,103
2a.1.1	Totals	617	7,874	7,879	10,619	2,045	23,777	367	18,115	71,293	71,293	-	-	11,002	43,783	2,280	976	-	6,960,667	83,294	2,205
Removal of Major Equipment																					
2a.1.2	Main Turbine/Generator	-	227	141	25	540	460	-	271	1,665	1,665	-	-	2,542	2,825	-	-	-	498,612	5,877	-
2a.1.3	Main Condensers	-	766	63	83	466	338	-	365	2,081	2,081	-	-	4,145	2,073	-	-	-	393,820	20,428	-
Cascading Costs from Clean Building Demolition																					
2a.1.4.1	Containment	-	547	-	-	-	-	-	82	629	629	-	-	-	-	-	-	-	-	8,302	-
2a.1.4.2	Auxiliary	-	104	-	-	-	-	-	16	119	119	-	-	-	-	-	-	-	-	1,965	-
2a.1.4.3	Miscellaneous Structures - Contaminated	-	4	-	-	-	-	-	1	4	4	-	-	-	-	-	-	-	-	76	-
2a.1.4.4	Radwaste Solidification	-	65	-	-	-	-	-	10	74	74	-	-	-	-	-	-	-	-	1,106	-
2a.1.4.5	Fuel Handling	-	43	-	-	-	-	-	6	49	49	-	-	-	-	-	-	-	-	708	-
2a.1.4	Totals	-	782	-	-	-	-	-	114	877	877	-	-	-	-	-	-	-	-	12,176	-
Disposal of Plant Systems																					
2a.1.5.1	Ameritap	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,847	-
2a.1.5.2	Auxiliary Feedwater	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	352	-
2a.1.5.3	Auxiliary Feedwater - Insulated	-	21	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	623	-
2a.1.5.4	Auxiliary Feedwater - Insulated - RCA	-	141	4	10	52	143	-	81	431	431	-	-	514	294	-	-	-	47,293	3,567	-
2a.1.5.5	Auxiliary Feedwater - RCA	8	29	1	2	11	33	-	22	106	106	-	-	112	67	-	-	-	10,567	938	-
2a.1.5.6	Auxiliary Steam	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	34	-
2a.1.5.7	Auxiliary Steam - Insulated	-	34	-	-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	1,031	-
2a.1.5.8	Auxiliary Steam - Insulated - RCA	-	8	0	1	5	8	-	5	26	26	-	-	46	17	-	-	-	3,386	189	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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)																					
2a.1.5.9	Auxiliary Steam - RCA	-	0	-	-	-	0	-	0	1	1	-	-	1	0	-	-	-	83	5	-
2a.1.5.10	Breathing Air - Insulated - RCA	-	4	-	0	1	3	-	2	11	11	-	-	10	7	-	-	-	1,028	96	-
2a.1.5.11	Breathing Air - RCA	-	58	2	6	48	66	-	39	219	219	-	-	472	135	-	-	-	31,273	1,480	-
2a.1.5.12	Chemical & Volume Control	408	398	37	78	402	1,080	-	649	3,052	3,052	-	-	3,956	2,914	-	-	-	359,830	19,596	-
2a.1.5.13	Chemical & Volume Control - Insulated	208	351	11	27	33	483	-	318	1,410	1,410	-	-	321	951	-	-	-	98,358	13,347	-
2a.1.5.14	Circulating Water	-	90	-	-	-	-	-	13	103	-	-	103	-	-	-	-	-	-	2,697	-
2a.1.5.15	Component Cooling Water	-	158	-	-	-	-	-	24	181	-	-	181	-	-	-	-	-	-	4,791	-
2a.1.5.16	Component Cooling Water - RCA	-	399	19	61	579	625	-	354	2,037	2,037	-	-	5,702	1,283	-	-	-	346,592	10,067	-
2a.1.5.17	Condensate	-	159	-	-	-	-	-	24	183	-	-	183	-	-	-	-	-	-	4,701	-
2a.1.5.18	Condensate - Insulated	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,892	-
2a.1.5.19	Condensate Polishing	-	27	-	-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	784	-
2a.1.5.20	Condensate Polishing - Ins	-	81	-	-	-	-	-	12	93	-	-	93	-	-	-	-	-	-	2,448	-
2a.1.5.21	Condensate Recovery	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	554	-
2a.1.5.22	Condensate Recovery - Insulated	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	99	-
2a.1.5.23	Condensate Recovery - Insulated - RCA	-	7	0	0	2	6	-	4	19	19	-	-	17	13	-	-	-	1,857	188	-
2a.1.5.24	Condensate Recovery - RCA	-	23	1	2	7	25	-	13	70	70	-	-	64	51	-	-	-	7,233	688	-
2a.1.5.25	Condensate Storage	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,651	-
2a.1.5.26	Condensor	-	21	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	636	-
2a.1.5.27	Containment Post Accident Evel	-	12	0	1	6	5	-	5	29	29	-	-	59	10	-	-	-	3,265	320	-
2a.1.5.28	Containment Post Accident Eval - Ins	-	16	1	1	4	20	-	10	54	54	-	-	42	40	-	-	-	5,308	436	-
2a.1.5.29	Containment Purge	-	39	2	7	74	60	-	37	219	219	-	-	729	124	-	-	-	40,682	988	-
2a.1.5.30	Electrical - Clean	-	1,648	-	-	-	-	-	247	1,895	-	-	1,895	-	-	-	-	-	-	47,559	-
2a.1.5.31	Extraction Steam	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	317	-
2a.1.5.32	Extraction Steam - Insulated	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,908	-
2a.1.5.33	Feedwater	-	111	-	-	-	-	-	17	127	-	-	127	-	-	-	-	-	-	3,134	-
2a.1.5.34	Feedwater - Insulated	-	185	-	-	-	-	-	28	212	-	-	212	-	-	-	-	-	-	5,619	-
2a.1.5.35	Feedwater - Insulated - RCA	-	88	3	11	99	114	-	67	383	383	-	-	973	235	-	-	-	60,813	2,238	-
2a.1.5.36	Feedwater - RCA	-	8	0	1	10	11	-	7	38	38	-	-	98	23	-	-	-	6,015	210	-
2a.1.5.37	Feedwater Heater Drains & Vents	-	40	-	-	-	-	-	6	46	-	-	46	-	-	-	-	-	-	1,202	-
2a.1.5.38	Feedwater Heater Drains & Vents - Ins	-	297	-	-	-	-	-	45	342	-	-	342	-	-	-	-	-	-	9,047	-
2a.1.5.39	Fire Protection	-	269	-	-	-	-	-	40	309	-	-	309	-	-	-	-	-	-	7,798	-
2a.1.5.40	Generator	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	126	-
2a.1.5.41	Generator - Insulated	-	1	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	47	-
2a.1.5.42	HVAC - Clean	-	127	-	-	-	-	-	19	145	-	-	145	-	-	-	-	-	-	4,217	-
2a.1.5.43	Instrument Air	-	17	-	-	-	-	-	2	19	-	-	19	-	-	-	-	-	-	501	-
2a.1.5.44	Instrument Air - Insulated	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	445	-
2a.1.5.45	Intake Cooling Water	-	163	-	-	-	-	-	24	188	-	-	188	-	-	-	-	-	-	4,964	-
2a.1.5.46	Main Steam - Insulated	-	158	-	-	-	-	-	24	182	-	-	182	-	-	-	-	-	-	4,732	-
2a.1.5.47	Main Steam - Insulated - RCA	-	48	2	7	67	68	-	40	231	231	-	-	660	139	-	-	-	39,261	1,225	-
2a.1.5.48	Nitrogen & Hydrogen	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	27	-
2a.1.5.49	Nitrogen & Hydrogen - RCA	-	1	-	0	0	2	-	1	4	4	-	-	2	4	-	-	-	438	28	-
2a.1.5.50	Reactor Coolant - Insulated	33	61	2	5	7	79	-	53	239	239	-	-	68	162	-	-	-	17,258	2,225	-
2a.1.5.51	Safety Injection	-	178	5	20	369	54	-	117	743	743	-	-	3,639	145	-	-	-	157,687	4,558	-
2a.1.5.52	Safety Injection - Insulated	-	120	4	13	100	155	-	86	478	478	-	-	983	318	-	-	-	68,456	3,018	-
2a.1.5.53	Sample - NSSS	-	43	1	1	8	18	-	17	88	88	-	-	83	36	-	-	-	6,609	1,142	-
2a.1.5.54	Sample - NSSS - Ins	-	54	1	1	0	22	-	19	96	96	-	-	4	46	-	-	-	4,260	1,445	-
2a.1.5.55	Screen Wash	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	757	-
2a.1.5.56	Secondary Sample	-	3	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	87	-
2a.1.5.57	Secondary Sample - RCA	-	4	-	0	1	1	-	1	6	6	-	-	14	2	-	-	-	782	95	-
2a.1.5.58	Secondary Wet Layup	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	543	-
2a.1.5.59	Secondary Wet Layup - RCA	-	16	1	1	6	20	-	10	55	55	-	-	75	41	-	-	-	6,678	388	-
2a.1.5.60	Turbine Building HVAC	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	433	-
2a.1.5.61	Turbine Lube Oil	-	41	-	-	-	-	-	6	47	-	-	47	-	-	-	-	-	-	1,197	-
2a.1.5.62	Turbine Plant Chemical Addition	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	112	-
2a.1.5.63	Turbine Plant Cooling Water	-	80	-	-	-	-	-	12	92	-	-	92	-	-	-	-	-	-	2,416	-
2a.1.5.64	Turbine Plant Cooling Water - Insulated	-	47	-	-	-	-	-	7	54	-	-	54	-	-	-	-	-	-	1,440	-
2a.1.5.65	Turbine Steam	-	71	-	-	-	-	-	11	82	-	-	82	-	-	-	-	-	-	2,185	-
2a.1.5.66	Turbine Steam - Insulated	-	33	-	-	-	-	-	5	38	-	-	38	-	-	-	-	-	-	1,009	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
2a.1.5	Totals	657	8,354	97	257	1,893	3,082	-	2,595	14,934	10,048	-	4,886	18,642	7,058	-	-	-	1,324,592	194,276	-
2a.1.6	Scaffolding in support of decommissioning	-	352	4	3	46	3	-	97	505	505	-	-	407	20	-	-	-	20,342	10,280	-
2a.1	Subtotal Period 2a Activity Costs	1,275	16,335	8,184	10,987	4,990	27,680	367	21,556	91,354	86,468	-	4,886	38,739	55,759	2,280	976	-	9,198,032	326,330	2,205
Period 2a Additional Costs																					
2a.2.1	Curie Surcharge (excluding RPV)	-	-	-	-	-	691	-	173	864	864	-	-	-	-	-	-	-	-	-	-
2a.2	Subtotal Period 2a Additional Costs	-	-	-	-	-	691	-	173	864	864	-	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Process liquid waste	152	-	78	406	-	1,012	-	396	2,049	2,049	-	-	-	-	1,310	-	-	175,641	215	-
2a.3.2	Small tool allowance	-	221	-	-	-	-	-	33	254	228	-	25	-	-	-	-	-	-	-	-
2a.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	533	80	613	-	613	-	-	-	-	-	-	-	-	-
2a.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	197	20	217	217	-	-	-	-	-	-	-	-	-	-
2a.3.5	Fixed Overhead	-	-	-	-	-	-	1,100	165	1,265	1,265	-	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	152	221	78	406	-	1,012	1,831	696	4,396	3,759	613	25	-	-	1,310	-	-	175,641	215	-
Period 2a Period-Dependent Costs																					
2a.4.1	Decon supplies	59	-	-	-	-	-	-	15	73	73	-	-	-	-	-	-	-	-	-	-
2a.4.2	Insurance	-	-	-	-	-	-	598	60	657	657	-	-	-	-	-	-	-	-	-	-
2a.4.3	Property taxes	-	-	-	-	-	-	687	69	756	680	-	76	-	-	-	-	-	-	-	-
2a.4.4	Health physics supplies	-	1,435	-	-	-	-	-	359	1,793	1,793	-	-	-	-	-	-	-	-	-	-
2a.4.5	Heavy equipment rental	-	2,365	-	-	-	-	-	358	2,743	2,743	-	-	-	-	-	-	-	-	-	-
2a.4.6	Disposal of DAW generated	-	-	51	54	-	413	-	117	636	636	-	-	-	3,981	-	-	-	79,780	977	-
2a.4.7	Plant energy budget	-	-	-	-	-	-	920	138	1,058	1,058	-	-	-	-	-	-	-	-	-	-
2a.4.8	NRC Fees	-	-	-	-	-	-	451	45	496	496	-	-	-	-	-	-	-	-	-	-
2a.4.9	Emergency Planning Fees	-	-	-	-	-	-	172	17	189	-	189	-	-	-	-	-	-	-	-	-
2a.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	1,371	206	1,576	-	1,576	-	-	-	-	-	-	-	-	-
2a.4.11	ISFSI Operating Costs	-	-	-	-	-	-	50	8	58	-	58	-	-	-	-	-	-	-	-	-
2a.4.12	NEI Fees	-	-	-	-	-	-	180	18	198	198	-	-	-	-	-	-	-	-	-	-
2a.4.13	Security Staff Cost	-	-	-	-	-	-	2,027	304	2,331	2,331	-	-	-	-	-	-	-	-	-	101,117
2a.4.14	DOC Staff Cost	-	-	-	-	-	-	14,908	2,101	16,110	16,110	-	-	-	-	-	-	-	-	-	218,011
2a.4.15	Utility Staff Cost	-	-	-	-	-	-	23,850	3,577	27,427	27,427	-	-	-	-	-	-	-	-	-	424,663
2a.4	Subtotal Period 2a Period-Dependent Costs	59	3,820	51	54	-	413	44,314	7,390	56,102	54,203	1,823	76	-	3,981	-	-	-	79,780	977	743,792
2a.0	TOTAL PERIOD 2a COST	1,485	20,376	8,313	11,450	4,990	29,777	46,511	29,816	152,718	145,294	2,436	4,987	38,739	59,741	3,590	976	-	9,453,453	327,523	745,997
PERIOD 2b - Site Decontamination																					
Period 2b Direct Decommissioning Activities																					
Disposal of Plant Systems																					
2b.1.1.1	Auxiliary Bldg HVAC	-	212	4	18	332	53	-	119	738	738	-	-	3,289	109	-	-	-	142,543	4,802	-
2b.1.1.2	Containment Emergency Filter	-	4	-	0	5	1	-	2	12	12	-	-	45	1	-	-	-	1,940	111	-
2b.1.1.3	Containment Normal & Emerg Cooling	-	491	10	40	712	119	-	266	1,637	1,637	-	-	7,013	244	-	-	-	306,700	10,875	-
2b.1.1.4	Containment Normal & Emerg Cooling - Ins	-	5	0	0	1	7	-	3	16	16	-	-	9	15	-	-	-	1,679	107	-
2b.1.1.5	Containment Spray	-	60	2	7	54	73	-	43	238	238	-	-	531	151	-	-	-	35,066	1,493	-
2b.1.1.6	Containment Spray - Insulated	-	47	2	4	22	62	-	31	169	169	-	-	217	127	-	-	-	20,249	1,156	-
2b.1.1.7	Control Building HVAC	-	20	-	-	-	-	-	3	23	-	-	23	-	-	-	-	-	-	619	-
2b.1.1.8	EDG Building HVAC	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	74	-
2b.1.1.9	Electrical - Decontaminated	-	2,389	57	184	1,189	2,348	-	1,398	7,563	7,563	-	-	11,710	4,818	-	-	-	907,901	60,276	-
2b.1.1.10	Emergency Diesel Engine & Oil	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,676	-
2b.1.1.11	Emergency Diesel Engine & Oil - Ins	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	77	-
2b.1.1.12	Fire Protection - RCA	-	795	31	94	807	1,027	-	594	3,347	3,347	-	-	7,953	2,108	-	-	-	512,067	19,917	-
2b.1.1.13	HVAC - Contaminated	-	44	1	3	64	8	-	23	143	143	-	-	627	17	-	-	-	26,939	986	-
2b.1.1.14	Instrument Air - Insulated - RCA	-	91	2	5	15	73	-	44	230	230	-	-	145	151	-	-	-	19,369	2,326	-
2b.1.1.15	Instrument Air - RCA	-	56	1	3	10	48	-	28	146	146	-	-	95	99	-	-	-	12,719	1,418	-
2b.1.1.16	Miscellaneous - RCA	-	8	0	1	16	13	-	7	43	43	-	-	155	26	-	-	-	8,813	143	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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)																					
2b.1.1.17	Primary Water Makeup	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,668	-
2b.1.1.18	Radwaste Building HVAC	-	99	2	7	138	18	-	51	314	314	-	-	1,357	36	-	-	-	58,339	2,189	-
2b.1.1.19	Refueling Equipment	-	139	6	18	91	244	-	113	611	611	-	-	901	501	-	-	-	81,494	3,608	-
2b.1.1.20	Residual Heat Removal	121	70	29	68	153	1,120	-	394	1,955	1,955	-	-	1,507	2,301	-	-	-	267,511	2,055	-
2b.1.1.21	Residual Heat Removal - Insulated	227	249	18	46	102	759	-	390	1,791	1,791	-	-	1,004	1,558	-	-	-	180,519	8,317	-
2b.1.1.22	Safety Injection Accumulator	-	205	8	26	312	208	-	155	913	913	-	-	3,074	439	-	-	-	163,066	5,174	-
2b.1.1.23	Service Water	-	15	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	487	-
2b.1.1.24	Service Water - Insulated	-	8	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	204	-
2b.1.1.25	Service Water - Insulated - RCA	-	55	2	4	15	68	-	34	179	179	-	-	147	141	-	-	-	18,582	1,347	-
2b.1.1.26	Service Water - RCA	-	121	5	10	33	159	-	77	405	405	-	-	329	326	-	-	-	42,571	2,920	-
2b.1.1.27	Steam Generator Wet Layup	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	25	-
2b.1.1.28	Steam Generator Wet Layup - RCA	-	1	-	0	0	2	-	1	4	4	-	-	2	4	-	-	-	438	28	-
2b.1.1.29	Waste Disposal	284	322	24	52	227	758	-	456	2,122	2,122	-	-	2,236	1,910	-	-	-	230,068	14,583	-
2b.1.1.30	Waste Disposal - Insulated	298	382	16	34	29	598	-	400	1,738	1,738	-	-	283	1,229	-	-	-	121,702	15,804	-
2b.1.1.31	Water Treatment Plant	-	104	-	-	-	-	-	16	119	-	-	119	-	-	-	-	-	-	3,065	-
2b.1.1.32	Water Treatment Plant - Insulated	-	77	-	-	-	-	-	12	89	-	-	89	-	-	-	-	-	-	2,338	-
2b.1.1	Totals	930	6,163	221	627	4,326	7,763	-	4,678	24,706	24,314	-	394	42,611	16,310	-	-	-	3,160,136	169,662	-
2b.1.2	Scaffolding in support of decommissioning	-	440	5	3	57	4	-	121	631	631	-	-	509	25	-	-	-	25,428	12,850	-
Decontamination of Site Buildings																					
2b.1.3.1	Containment	684	661	87	128	242	312	-	650	2,764	2,764	-	-	9,091	1,680	-	-	-	762,087	32,629	-
2b.1.3.2	Auxiliary	323	158	18	58	118	264	-	295	1,234	1,234	-	-	1,163	1,639	-	-	-	209,398	11,729	-
2b.1.3.3	Miscellaneous Structures - Contaminated	8	4	1	2	0	9	-	7	30	30	-	-	2	54	-	-	-	5,500	279	-
2b.1.3.4	Radwaste Solidification	101	57	6	19	18	90	-	93	384	384	-	-	181	553	-	-	-	62,529	3,832	-
2b.1.3	Totals	1,116	880	111	207	379	675	-	1,045	4,413	4,413	-	-	10,437	3,926	-	-	-	1,039,512	48,469	-
2b.1	Subtotal Period 2b Activity Costs	2,046	7,484	337	837	4,762	8,442	-	5,844	29,752	29,357	-	394	53,556	20,261	-	-	-	4,225,076	230,961	-
Period 2b Additional Costs																					
2b.2.1	Seaweed Remediation & Disposal	-	33	1	339	-	967	-	301	1,641	1,641	-	-	-	29,650	-	-	-	593,000	494	-
2b.2	Subtotal Period 2b Additional Costs	-	33	1	339	-	967	-	301	1,641	1,641	-	-	-	29,650	-	-	-	593,000	494	-
Period 2b Collateral Costs																					
2b.3.1	Process liquid waste	91	-	174	606	-	1,947	-	641	3,459	3,459	-	-	-	-	2,228	-	-	347,806	166	-
2b.3.2	Small tool allowance	-	152	-	-	-	-	-	23	175	175	-	-	-	-	-	-	-	-	-	-
2b.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	21,553	3,233	24,786	-	24,786	-	-	-	-	-	-	-	-	-
2b.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	215	21	236	236	-	-	-	-	-	-	-	-	-	-
2b.3.5	Fixed Overhead	-	-	-	-	-	-	1,977	297	2,274	2,274	-	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	91	152	174	606	-	1,947	23,745	4,215	30,930	6,144	24,786	-	-	-	2,228	-	-	347,806	166	-
Period 2b Period-Dependent Costs																					
2b.4.1	Decon supplies	549	-	-	-	-	-	-	137	686	686	-	-	-	-	-	-	-	-	-	-
2b.4.2	Insurance	-	-	-	-	-	-	1,074	107	1,181	1,181	-	-	-	-	-	-	-	-	-	-
2b.4.3	Property taxes	-	-	-	-	-	-	1,235	123	1,358	1,358	-	-	-	-	-	-	-	-	-	-
2b.4.4	Health physics supplies	-	1,385	-	-	-	-	-	346	1,731	1,731	-	-	-	-	-	-	-	-	-	-
2b.4.5	Heavy equipment rental	-	4,312	-	-	-	-	-	647	4,959	4,959	-	-	-	-	-	-	-	-	-	-
2b.4.6	Disposal of DAW generated	-	-	57	60	-	456	-	129	701	701	-	-	-	4,392	-	-	-	88,018	1,078	-
2b.4.7	Plant energy budget	-	-	-	-	-	-	1,306	196	1,501	1,501	-	-	-	-	-	-	-	-	-	-
2b.4.8	NRC Fees	-	-	-	-	-	-	810	81	890	890	-	-	-	-	-	-	-	-	-	-
2b.4.9	Emergency Planning Fees	-	-	-	-	-	-	309	31	340	-	340	-	-	-	-	-	-	-	-	-
2b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	2,463	369	2,832	-	2,832	-	-	-	-	-	-	-	-	-
2b.4.11	Radwaste Processing Equipment/Services	-	-	-	-	-	-	445	67	511	511	-	-	-	-	-	-	-	-	-	-
2b.4.12	ISFSI Operating Costs	-	-	-	-	-	-	90	14	104	-	104	-	-	-	-	-	-	-	-	-
2b.4.13	NEI Fees	-	-	-	-	-	-	324	32	356	356	-	-	-	-	-	-	-	-	-	-
2b.4.14	Security Staff Cost	-	-	-	-	-	-	2,919	438	3,357	3,357	-	-	-	-	-	-	-	-	-	145,609
2b.4.15	DOC Staff Cost	-	-	-	-	-	-	24,199	3,630	27,829	27,829	-	-	-	-	-	-	-	-	-	376,283
2b.4.16	Utility Staff Cost	-	-	-	-	-	-	41,454	6,218	47,672	47,672	-	-	-	-	-	-	-	-	-	734,486

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
2b.4	Subtotal Period 2b Period-Dependent Costs	549	5,697	57	60	-	456	76,626	12,585	96,009	92,734	3,276	-	-	4,392	-	-	-	88,018	1,078	1,256,357
2b.0	TOTAL PERIOD 2b COST	2,688	13,366	569	1,842	4,762	11,812	100,371	22,924	158,332	129,876	28,062	394	53,556	54,303	2,228	-	-	5,253,902	232,720	1,256,357
PERIOD 2c - Decontamination Following Wet Fuel Storage																					
Period 2c Direct Decommissioning Activities																					
2c.1.1	Remove spent fuel racks	334	34	73	63	-	343	-	278	1,124	1,124	-	-	-	2,106	-	-	-	210,800	1,023	-
Disposal of Plant Systems																					
2c.1.2.1	Electrical - Contaminated	-	267	3	12	230	29	-	111	653	653	-	-	2,267	60	-	-	-	97,471	6,729	-
2c.1.2.2	Fuel Handling HVAC	-	46	1	4	67	9	-	24	151	151	-	-	662	18	-	-	-	28,461	1,046	-
2c.1.2.3	Spent Fuel Pool Cooling	62	88	6	14	25	233	-	118	546	546	-	-	249	485	-	-	-	52,999	3,253	-
2c.1.2.4	Spent Fuel Pool Cooling - Insulated	34	44	2	6	8	97	-	55	246	246	-	-	83	199	-	-	-	21,242	1,641	-
2c.1.2	Totals	96	445	12	36	331	368	-	308	1,595	1,595	-	-	3,260	762	-	-	-	200,174	12,670	-
Decontamination of Site Buildings																					
2c.1.3.1	Fuel Handling	271	314	4	13	133	39	-	246	1,020	1,020	-	-	1,308	244	-	-	-	76,919	14,348	-
2c.1.3	Totals	271	314	4	13	133	39	-	246	1,020	1,020	-	-	1,308	244	-	-	-	76,919	14,348	-
2c.1.4	Scaffolding in support of decommissioning	-	88	1	1	11	1	-	24	126	126	-	-	102	5	-	-	-	5,088	2,570	-
2c.1	Subtotal Period 2c Activity Costs	701	881	90	112	475	751	-	856	3,868	3,868	-	-	4,668	3,117	-	-	-	492,779	30,810	-
Period 2c Collateral Costs																					
2c.3.1	Process liquid waste	53	-	36	169	-	482	-	176	916	916	-	-	-	-	560	-	-	77,888	80	-
2c.3.2	Small tool allowance	-	27	-	-	-	-	-	4	31	31	-	-	-	-	-	-	-	-	-	-
2c.3.3	Decommissioning Equipment Disposition	-	-	64	48	675	49	-	127	963	963	-	-	6,000	300	-	-	-	300,000	735	-
2c.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	6,461	969	7,431	-	7,431	-	-	-	-	-	-	-	-	-
2c.3.5	Florida LLRW Inspection Fee	-	-	-	-	-	-	31	3	34	34	-	-	-	-	-	-	-	-	-	-
2c.3.6	Fixed Overhead	-	-	-	-	-	-	491	74	565	565	-	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	53	27	99	218	675	531	6,983	1,353	9,939	2,508	7,431	-	6,000	300	560	-	-	377,888	815	-
Period 2c Period-Dependent Costs																					
2c.4.1	Decon supplies	63	-	-	-	-	-	-	16	79	79	-	-	-	-	-	-	-	-	-	-
2c.4.2	Insurance	-	-	-	-	-	-	267	27	293	293	-	-	-	-	-	-	-	-	-	-
2c.4.3	Property taxes	-	-	-	-	-	-	307	31	337	337	-	-	-	-	-	-	-	-	-	-
2c.4.4	Health physics supplies	-	256	-	-	-	-	-	64	320	320	-	-	-	-	-	-	-	-	-	-
2c.4.5	Heavy equipment rental	-	1,071	-	-	-	-	-	161	1,232	1,232	-	-	-	-	-	-	-	-	-	-
2c.4.6	Disposal of DAW generated	-	-	13	14	-	104	-	29	160	160	-	-	-	1,005	-	-	-	20,137	247	-
2c.4.7	Plant energy budget	-	-	-	-	-	-	173	26	199	199	-	-	-	-	-	-	-	-	-	-
2c.4.8	NRC Fees	-	-	-	-	-	-	201	20	221	221	-	-	-	-	-	-	-	-	-	-
2c.4.9	Emergency Planning Fees	-	-	-	-	-	-	31	3	34	-	34	-	-	-	-	-	-	-	-	-
2c.4.10	Radwaste Processing Equipment/Services	-	-	-	-	-	-	221	33	254	254	-	-	-	-	-	-	-	-	-	-
2c.4.11	ISFSI Operating Costs	-	-	-	-	-	-	22	3	26	-	26	-	-	-	-	-	-	-	-	-
2c.4.12	NEI Fees	-	-	-	-	-	-	80	8	88	88	-	-	-	-	-	-	-	-	-	-
2c.4.13	Security Staff Cost	-	-	-	-	-	-	725	109	834	834	-	-	-	-	-	-	-	-	-	36,160
2c.4.14	DOC Staff Cost	-	-	-	-	-	-	4,092	614	4,706	4,706	-	-	-	-	-	-	-	-	-	64,000
2c.4.15	Utility Staff Cost	-	-	-	-	-	-	7,755	1,163	8,918	8,918	-	-	-	-	-	-	-	-	-	131,200
2c.4	Subtotal Period 2c Period-Dependent Costs	63	1,327	13	14	-	104	13,874	2,307	17,701	17,642	60	-	-	1,005	-	-	-	20,137	247	231,360
2c.0	TOTAL PERIOD 2c COST	818	2,235	202	343	1,150	1,386	20,857	4,515	31,508	24,015	7,491	-	10,668	4,422	560	-	-	890,804	31,672	231,360
PERIOD 2e - License Termination																					
Period 2e Direct Decommissioning Activities																					
2e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
2e.1.2	Terminate license									a											
2e.1	Subtotal Period 2e Activity Costs	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
Period 2e Additional Costs																					
2e.2.1	License Termination Survey	-	-	-	-	-	-	4,047	1,214	5,262	5,262	-	-	-	-	-	-	-	-	87,099	-
2e.2	Subtotal Period 2e Additional Costs	-	-	-	-	-	-	4,047	1,214	5,262	5,262	-	-	-	-	-	-	-	-	87,099	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 2e Collateral Costs																					
2e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
2e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
2e.3.3	Fixed Overhead	-	-	-	-	-	-	603	90	693	693	-	-	-	-	-	-	-	-	-	-
2e.3	Subtotal Period 2e Collateral Costs	-	-	-	-	-	-	1,892	284	2,176	2,176	-	-	-	-	-	-	-	-	-	-
Period 2e Period-Dependent Costs																					
2e.4.1	Insurance	-	-	-	-	-	-	298	30	328	328	-	-	-	-	-	-	-	-	-	-
2e.4.2	Property taxes	-	-	-	-	-	-	376	38	414	414	-	-	-	-	-	-	-	-	-	-
2e.4.3	Health physics supplies	-	477	-	-	-	-	-	119	597	597	-	-	-	-	-	-	-	-	-	-
2e.4.4	Disposal of DAW generated	-	-	4	4	-	32	-	9	49	49	-	-	-	305	-	-	-	6,105	75	-
2e.4.5	Plant energy budget	-	-	-	-	-	-	106	16	122	122	-	-	-	-	-	-	-	-	-	-
2e.4.6	NRC Fees	-	-	-	-	-	-	247	25	271	271	-	-	-	-	-	-	-	-	-	-
2e.4.7	Emergency Planning Fees	-	-	-	-	-	-	38	4	42	-	42	-	-	-	-	-	-	-	-	-
2e.4.8	ISFSI Operating Costs	-	-	-	-	-	-	28	4	32	-	32	-	-	-	-	-	-	-	-	-
2e.4.9	NEI Fees	-	-	-	-	-	-	99	10	108	108	-	-	-	-	-	-	-	-	-	-
2e.4.10	Security Staff Cost	-	-	-	-	-	-	488	73	562	562	-	-	-	-	-	-	-	-	-	24,357
2e.4.11	DOC Staff Cost	-	-	-	-	-	-	3,903	585	4,488	4,488	-	-	-	-	-	-	-	-	-	57,357
2e.4.12	Utility Staff Cost	-	-	-	-	-	-	5,614	842	6,456	6,456	-	-	-	-	-	-	-	-	-	85,643
2e.4	Subtotal Period 2e Period-Dependent Costs	-	477	4	4	-	32	11,197	1,755	13,469	13,395	73	-	-	305	-	-	-	6,105	75	167,357
2e.0	TOTAL PERIOD 2e COST	-	477	4	4	-	32	17,262	3,291	21,070	20,997	73	-	-	305	-	-	-	6,105	87,174	167,357
PERIOD 2 TOTALS		4,989	38,454	9,088	13,640	10,902	43,007	185,001	60,546	363,626	320,182	38,062	5,382	100,983	118,770	6,377	976	-	15,804,280	679,089	2,401,071
PERIOD 3b - Site Restoration																					
Period 3b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
3b.1.1.1	Containment	-	3,145	-	-	-	-	-	472	3,617	-	-	3,617	-	-	-	-	-	-	47,997	-
3b.1.1.2	Auxiliary	-	932	-	-	-	-	-	140	1,071	-	-	1,071	-	-	-	-	-	-	17,861	-
3b.1.1.3	Control	-	93	-	-	-	-	-	14	106	-	-	106	-	-	-	-	-	-	1,773	-
3b.1.1.4	Intake	-	97	-	-	-	-	-	15	112	-	-	112	-	-	-	-	-	-	1,577	-
3b.1.1.5	Miscellaneous Structures - Clean	-	1,956	-	-	-	-	-	293	2,250	-	-	2,250	-	-	-	-	-	-	40,752	-
3b.1.1.6	Miscellaneous Structures - Contaminated	-	74	-	-	-	-	-	11	85	-	-	85	-	-	-	-	-	-	1,447	-
3b.1.1.7	Radwaste Solidification	-	584	-	-	-	-	-	88	671	-	-	671	-	-	-	-	-	-	9,978	-
3b.1.1.8	Seawall	-	75	-	-	-	-	-	11	87	-	-	87	-	-	-	-	-	-	1,251	-
3b.1.1.9	Turbine	-	415	-	-	-	-	-	62	477	-	-	477	-	-	-	-	-	-	9,030	-
3b.1.1.10	Turbine Pedestal	-	357	-	-	-	-	-	54	411	-	-	411	-	-	-	-	-	-	5,055	-
3b.1.1.11	Fuel Handling	-	403	-	-	-	-	-	61	464	-	-	464	-	-	-	-	-	-	6,880	-
3b.1.1	Totals	-	8,132	-	-	-	-	-	1,220	9,352	-	-	9,352	-	-	-	-	-	-	143,801	-
Site Closeout Activities																					
3b.1.2	Remove Rubble	-	3,309	-	-	-	-	-	496	3,806	-	-	3,806	-	-	-	-	-	-	15,106	-
3b.1.3	Grade & landscape site	-	94	-	-	-	-	-	14	108	-	-	108	-	-	-	-	-	-	333	-
3b.1.4	Final report to NRC	-	-	-	-	-	-	64	10	73	73	-	-	-	-	-	-	-	-	-	668
3b.1	Subtotal Period 3b Activity Costs	-	11,536	-	-	-	-	64	1,740	13,339	73	-	13,266	-	-	-	-	-	-	159,042	668
Period 3b Additional Costs																					
3b.2.1	Intake Structure Cofferdam	-	152	-	-	-	-	-	23	175	-	-	175	-	-	-	-	-	-	1,896	-
3b.2.2	Discharge Structure Cofferdam	-	165	-	-	-	-	-	25	190	-	-	190	-	-	-	-	-	-	2,068	-
3b.2.3	Concrete Processing	-	333	-	-	-	-	2	50	385	-	-	385	-	-	-	-	-	-	2,214	-
3b.2	Subtotal Period 3b Additional Costs	-	650	-	-	-	-	2	98	750	-	-	750	-	-	-	-	-	-	6,176	-
Period 3b Collateral Costs																					
3b.3.1	Small tool allowance	-	105	-	-	-	-	-	16	120	-	-	120	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	-	105	-	-	-	-	-	16	120	-	-	120	-	-	-	-	-	-	-	-

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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 3b Period-Dependent Costs																					
3b.4.1	Insurance	-	-	-	-	-	-	756	76	831	-	831	-	-	-	-	-	-	-	-	-
3b.4.2	Property taxes	-	-	-	-	-	-	956	96	1,051	-	1,051	-	-	-	-	-	-	-	-	-
3b.4.3	Heavy equipment rental	-	4,531	-	-	-	-	-	680	5,211	-	-	5,211	-	-	-	-	-	-	-	-
3b.4.4	Plant energy budget	-	-	-	-	-	-	135	20	155	-	46	108	-	-	-	-	-	-	-	-
3b.4.5	NRC ISFSI Fees	-	-	-	-	-	-	194	19	213	-	213	-	-	-	-	-	-	-	-	-
3b.4.6	Emergency Planning Fees	-	-	-	-	-	-	97	10	106	-	106	-	-	-	-	-	-	-	-	-
3b.4.7	ISFSI Operating Costs	-	-	-	-	-	-	70	10	80	-	80	-	-	-	-	-	-	-	-	-
3b.4.8	Security Staff Cost	-	-	-	-	-	-	1,239	186	1,425	-	1,069	356	-	-	-	-	-	-	-	61,823
3b.4.9	DOC Staff Cost	-	-	-	-	-	-	10,785	1,618	12,402	-	-	12,402	-	-	-	-	-	-	-	157,549
3b.4.10	Utility Staff Cost	-	-	-	-	-	-	8,777	1,317	10,093	-	3,432	6,662	-	-	-	-	-	-	-	126,631
3b.4	Subtotal Period 3b Period-Dependent Costs	-	4,531	-	-	-	-	23,007	4,031	31,569	-	6,829	24,740	-	-	-	-	-	-	-	346,003
3b.0	TOTAL PERIOD 3b COST	-	16,822	-	-	-	-	23,073	5,884	45,779	73	6,829	38,876	-	-	-	-	-	-	165,218	346,671
PERIOD 3c - Fuel Storage Operations/Shipping																					
Period 3c Direct Decommissioning Activities																					
Period 3c Collateral Costs																					
3c.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,952	293	2,244	-	2,244	-	-	-	-	-	-	-	-	-
3c.3	Subtotal Period 3c Collateral Costs	-	-	-	-	-	-	1,952	293	2,244	-	2,244	-	-	-	-	-	-	-	-	-
Period 3c Period-Dependent Costs																					
3c.4.1	Insurance	-	-	-	-	-	-	4,711	471	5,182	-	5,182	-	-	-	-	-	-	-	-	-
3c.4.2	Property taxes	-	-	-	-	-	-	5,956	596	6,552	-	6,552	-	-	-	-	-	-	-	-	-
3c.4.3	Plant energy budget	-	-	-	-	-	-	252	38	290	-	290	-	-	-	-	-	-	-	-	-
3c.4.4	NRC ISFSI Fees	-	-	-	-	-	-	1,209	121	1,330	-	1,330	-	-	-	-	-	-	-	-	-
3c.4.5	Emergency Planning Fees	-	-	-	-	-	-	602	60	662	-	662	-	-	-	-	-	-	-	-	-
3c.4.6	ISFSI Operating Costs	-	-	-	-	-	-	436	65	501	-	501	-	-	-	-	-	-	-	-	-
3c.4.7	Security Staff Cost	-	-	-	-	-	-	2,617	393	3,009	-	3,009	-	-	-	-	-	-	-	-	130,530
3c.4.8	Utility Staff Cost	-	-	-	-	-	-	7,066	1,060	8,126	-	8,126	-	-	-	-	-	-	-	-	121,331
3c.4	Subtotal Period 3c Period-Dependent Costs	-	-	-	-	-	-	22,848	2,803	25,652	-	25,652	-	-	-	-	-	-	-	-	251,861
3c.0	TOTAL PERIOD 3c COST	-	-	-	-	-	-	24,800	3,096	27,896	-	27,896	-	-	-	-	-	-	-	-	251,861
PERIOD 3d - GTCC shipping																					
Period 3d Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
3d.1.1.1	Vessel & Internals GTCC Disposal	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
3d.1.1	Totals	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
3d.1	Subtotal Period 3d Activity Costs	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
Period 3d Period-Dependent Costs																					
3d.4.1	Insurance	-	-	-	-	-	-	15	2	17	-	17	-	-	-	-	-	-	-	-	-
3d.4.2	Property taxes	-	-	-	-	-	-	19	2	21	-	21	-	-	-	-	-	-	-	-	-
3d.4.3	Plant energy budget	-	-	-	-	-	-	1	0	1	-	1	-	-	-	-	-	-	-	-	-
3d.4.4	NRC ISFSI Fees	-	-	-	-	-	-	4	0	4	-	4	-	-	-	-	-	-	-	-	-
3d.4.5	Emergency Planning Fees	-	-	-	-	-	-	2	0	2	-	2	-	-	-	-	-	-	-	-	-
3d.4.6	ISFSI Operating Costs	-	-	-	-	-	-	1	0	2	-	2	-	-	-	-	-	-	-	-	-
3d.4.7	Security Staff Cost	-	-	-	-	-	-	8	1	10	-	10	-	-	-	-	-	-	-	-	420
3d.4.8	Utility Staff Cost	-	-	-	-	-	-	23	3	26	-	26	-	-	-	-	-	-	-	-	390
3d.4	Subtotal Period 3d Period-Dependent Costs	-	-	-	-	-	-	74	9	83	-	83	-	-	-	-	-	-	-	-	810

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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
3d.0	TOTAL PERIOD 3d COST	-	-	45	-	-	9,040	74	1,370	10,528	10,446	83	-	-	-	-	-	487	100,132	-	810
PERIOD 3e - ISFSI Decontamination																					
Period 3e Direct Decommissioning Activities																					
Period 3e Additional Costs																					
3e.2.1	ISFSI license termination	-	198	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
3e.2	Subtotal Period 3e Additional Costs	-	198	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
Period 3e Collateral Costs																					
3e.3.1	Small tool allowance	-	2	-	-	-	-	-	0	2	-	2	-	-	-	-	-	-	-	-	-
3e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	3	0	4	-	4	-	-	-	-	-	-	-	-	-
3e.3	Subtotal Period 3e Collateral Costs	-	2	-	-	-	-	3	1	6	-	6	-	-	-	-	-	-	-	-	-
Period 3e Period-Dependent Costs																					
3e.4.1	Insurance	-	-	-	-	-	-	131	13	144	-	144	-	-	-	-	-	-	-	-	-
3e.4.2	Property taxes	-	-	-	-	-	-	166	17	182	-	182	-	-	-	-	-	-	-	-	-
3e.4.3	Heavy equipment rental	-	233	-	-	-	-	-	35	268	-	268	-	-	-	-	-	-	-	-	-
3e.4.4	Plant energy budget	-	-	-	-	-	-	23	4	27	-	27	-	-	-	-	-	-	-	-	-
3e.4.5	NRC ISFSI Fees	-	-	-	-	-	-	34	3	37	-	37	-	-	-	-	-	-	-	-	-
3e.4.6	Security Staff Cost	-	-	-	-	-	-	36	5	42	-	42	-	-	-	-	-	-	-	-	1,818
3e.4.7	Utility Staff Cost	-	-	-	-	-	-	183	27	211	-	211	-	-	-	-	-	-	-	-	2,939
3e.4	Subtotal Period 3e Period-Dependent Costs	-	233	-	-	-	-	573	104	910	-	910	-	-	-	-	-	-	-	-	4,757
3e.0	TOTAL PERIOD 3e COST	-	433	4	44	-	303	1,281	343	2,407	-	2,407	-	-	1,633	-	-	-	165,471	3,760	6,037
PERIOD 3f - ISFSI Site Restoration																					
Period 3f Direct Decommissioning Activities																					
Period 3f Additional Costs																					
3f.2.1	ISFSI site restoration	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
3f.2	Subtotal Period 3f Additional Costs	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
Period 3f Collateral Costs																					
3f.3.1	Small tool allowance	-	1	-	-	-	-	-	0	1	-	1	-	-	-	-	-	-	-	-	-
3f.3	Subtotal Period 3f Collateral Costs	-	1	-	-	-	-	-	0	1	-	1	-	-	-	-	-	-	-	-	-
Period 3f Period-Dependent Costs																					
3f.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3f.4.2	Property taxes	-	-	-	-	-	-	84	8	92	-	92	-	-	-	-	-	-	-	-	-
3f.4.3	Heavy equipment rental	-	77	-	-	-	-	-	12	88	-	88	-	-	-	-	-	-	-	-	-
3f.4.4	Plant energy budget	-	-	-	-	-	-	12	2	14	-	14	-	-	-	-	-	-	-	-	-
3f.4.5	Security Staff Cost	-	-	-	-	-	-	18	3	21	-	21	-	-	-	-	-	-	-	-	917
3f.4.6	Utility Staff Cost	-	-	-	-	-	-	85	13	98	-	98	-	-	-	-	-	-	-	-	1,307
3f.4	Subtotal Period 3f Period-Dependent Costs	-	77	-	-	-	-	199	37	313	-	313	-	-	-	-	-	-	-	-	2,224
3f.0	TOTAL PERIOD 3f COST	-	464	-	-	-	-	220	98	782	-	782	-	-	-	-	-	-	-	1,129	2,304
PERIOD 3 TOTALS		-	17,719	49	44	-	9,343	49,447	10,791	87,393	10,519	37,997	38,876	-	1,633	-	-	487	265,603	170,107	609,683
TOTAL COST TO DECOMMISSION		7,940	56,518	10,171	15,157	18,139	56,500	306,298	86,857	559,581	434,907	79,909	44,765	145,877	126,983	10,753	976	487	19,007,030	868,542	3,963,525

Table C-2
Turkey Point Plant, Unit 4
DECON Decommissioning Cost Estimate
(Thousands of 2004 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

TOTAL COST TO DECOMMISSION WITH 18.37% CONTINGENCY:	$550,581	thousands of 2004 dollars
TOTAL NRC LICENSE TERMINATION COST IS 77.72% OR:	$434,907	thousands of 2004 dollars
SPENT FUEL MANAGEMENT COST IS 14.28% OR:	$79,909	thousands of 2004 dollars
NON-NUCLEAR DEMOLITION COST IS 8% OR:	$44,765	thousands of 2004 dollars
TOTAL RADWASTE VOLUME BURIED (EXCLUDING GTCC):	138,711	cubic feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	487	cubic feet
TOTAL SCRAP METAL REMOVED:	37,643	tons
TOTAL CRAFT LABOR REQUIREMENTS:	866,542	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

APPENDIX D

DETAILED COST ANALYSES

SAFSTOR

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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	-	-	-	-	-	-	404	121	525	525	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
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	-	-	-	-	-	-	191	29	220	220	-	-	-	-	-	-	-	-	-	2,000
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
1a.1.9	Perform detailed rad survey									a											
1a.1.10	Estimate by-product inventory	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1a.1.11	End product description	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	143	22	165	165	-	-	-	-	-	-	-	-	-	1,500
1a.1.13	Define major work sequence	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
1a.1.14	Perform SER and EA	-	-	-	-	-	-	296	44	341	341	-	-	-	-	-	-	-	-	-	3,100
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	478	72	549	549	-	-	-	-	-	-	-	-	-	5,000
Activity Specifications																					
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	470	71	541	541	-	-	-	-	-	-	-	-	-	4,920
1a.1.16.2	Plant systems	-	-	-	-	-	-	396	60	456	456	-	-	-	-	-	-	-	-	-	4,167
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	298	45	343	343	-	-	-	-	-	-	-	-	-	3,120
1a.1.16.4	Waste management	-	-	-	-	-	-	191	29	220	220	-	-	-	-	-	-	-	-	-	2,000
1a.1.16.5	Facility and site dormancy	-	-	-	-	-	-	191	29	220	220	-	-	-	-	-	-	-	-	-	2,000
1a.1.16	Total	-	-	-	-	-	-	1,549	232	1,781	1,781	-	-	-	-	-	-	-	-	-	16,207
Detailed Work Procedures																					
1a.1.17.1	Plant systems	-	-	-	-	-	-	113	17	130	130	-	-	-	-	-	-	-	-	-	1,183
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	115	17	132	132	-	-	-	-	-	-	-	-	-	1,200
1a.1.17	Total	-	-	-	-	-	-	228	34	262	262	-	-	-	-	-	-	-	-	-	2,383
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	10	1	11	11	-	-	-	-	-	-	-	-	-	100
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	-	-	-	-	-	-	3,834	636	4,469	4,469	-	-	-	-	-	-	-	-	-	35,890
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	786	118	906	-	906	-	-	-	-	-	-	-	-	-
1a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
1a.3.3	Fixed Overhead	-	-	-	-	-	-	801	120	921	921	-	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,589	238	1,828	922	906	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependant Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	875	87	962	962	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-		-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	-	404	-	-	-	8,103	99	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	704	106	810	810	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-
1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	125	12	137	-	137	-	-	-	-	-	-	-	-	-
1a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	997	149	1,146	-	1,146	-	-	-	-	-	-	-	-	-
1a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	37	5	42	-	42	-	-	-	-	-	-	-	-	-
1a.4.11	INPO Fees	-	-	-	-	-	-	450	45	495	495	-	-	-	-	-	-	-	-	-	-
1a.4.12	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 (continued)																					
1a.4.13	Security Staff Cost	-	-	-	-	-	-	1,181	177	1,358	1,358	-	-	-	-	-	-	-	-	-	58,921
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	24,097	3,615	27,712	27,712	-	-	-	-	-	-	-	-	-	438,000
1a.4	Subtotal Period 1a Period-Dependent Costs	-	582	5	6	-	42	29,361	4,411	34,407	33,082	1,325	-	-	404	-	-	-	8,103	99	496,921
1a.0	TOTAL PERIOD 1a COST	-	582	5	6	-	42	34,784	5,285	40,704	38,472	2,231	-	-	404	-	-	-	8,103	99	532,811
PERIOD 1b - SAFSTOR Limited DECON Activities																					
Period 1b Direct Decommissioning Activities																					
Decontamination of Site Buildings																					
1b.1.1.1	Containment	677	-	-	-	-	-	-	338	1,015	1,015	-	-	-	-	-	-	-	-	17,275	-
1b.1.1.2	Fuel Handling	268	-	-	-	-	-	-	134	402	402	-	-	-	-	-	-	-	-	6,269	-
1b.1.1	Totals	945	-	-	-	-	-	-	472	1,417	1,417	-	-	-	-	-	-	-	-	23,543	-
1b.1	Subtotal Period 1b Activity Costs	945	-	-	-	-	-	-	472	1,417	1,417	-	-	-	-	-	-	-	-	23,543	-
Period 1b Additional Costs																					
1b.2.1	Spent Fuel Pool Isolation	-	-	-	-	-	-	8,358	1,254	9,612	9,612	-	-	-	-	-	-	-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	-	-	-	-	-	8,358	1,254	9,612	9,612	-	-	-	-	-	-	-	-	-	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	720	-	-	-	-	-	-	108	828	828	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process liquid waste	98	-	35	219	-	518	-	215	1,086	1,086	-	-	-	-	672	-	-	64,677	132	-
1b.3.3	Small tool allowance	-	16	-	-	-	-	-	2	19	19	-	-	-	-	-	-	-	-	-	-
1b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	144	22	165	-	165	-	-	-	-	-	-	-	-	-
1b.3.5	Florida LLRW Inspection Fee	-	-	-	-	-	-	2	0	2	2	-	-	-	-	-	-	-	-	-	-
1b.3.6	Fixed Overhead	-	-	-	-	-	-	202	30	232	232	-	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	818	16	35	219	-	518	347	377	2,332	2,166	165	-	-	-	672	-	-	64,677	132	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	275	-	-	-	-	-	-	69	344	344	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	221	22	243	243	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	126	13	139	139	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	141	-	-	-	-	-	35	177	177	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	85	-	-	-	-	-	13	98	98	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	4	4	-	31	-	9	48	48	-	-	-	301	-	-	-	6,035	74	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	178	27	204	204	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	67	7	74	74	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	31	3	35	-	35	-	-	-	-	-	-	-	-	-
1b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	251	38	289	-	289	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-	-	-	-	-	-	9	1	11	-	11	-	-	-	-	-	-	-	-	-
1b.4.12	NEI Fees	-	-	-	-	-	-	33	3	36	36	-	-	-	-	-	-	-	-	-	-
1b.4.13	Security Staff Cost	-	-	-	-	-	-	298	45	342	342	-	-	-	-	-	-	-	-	-	14,851
1b.4.14	Utility Staff Cost	-	-	-	-	-	-	6,074	911	6,985	6,985	-	-	-	-	-	-	-	-	-	110,400
1b.4	Subtotal Period 1b Period-Dependent Costs	275	226	4	4	-	31	7,287	1,195	9,023	8,689	334	-	-	301	-	-	-	6,035	74	125,251
1b.0	TOTAL PERIOD 1b COST	2,038	243	39	223	-	550	15,993	3,298	22,384	21,885	500	-	-	301	672	-	-	90,711	23,749	125,251
PERIOD 1c - Preparations for SAFSTOR Dormancy																					
Period 1c Direct Decommissioning Activities																					
1c.1.1	Prepare support equipment for storage	-	376	-	-	-	-	-	56	433	433	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	29	-	-	-	-	-	4	33	33	-	-	-	-	-	-	-	-	700	-
1c.1.3	Interim survey prior to dormancy	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	13,187	-
1c.1.4	Secure building accesses									8											
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	56	8	64	64	-	-	-	-	-	-	-	-	-	583

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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
1c.1	Subtotal Period 1c Activity Costs	-	405	-	-	-	-	789	289	1,483	1,483	-	-	-	-	-	-	-	-	16,887	583
Period 1c Collateral Costs																					
1c.3.1	Process liquid waste	124	-	45	279	-	644	-	289	1,381	1,381	-	-	-	-	855	-	-	107,755	168	-
1c.3.2	Small tool allowance	-	3	-	-	-	-	-	0	3	3	-	-	-	-	-	-	-	-	-	-
1c.3.3	Florida LLRW Inspection Fee	-	-	-	-	-	-	2	0	2	2	-	-	-	-	-	-	-	-	-	-
1c.3.4	Fixed Overhead	-	-	-	-	-	-	204	31	234	234	-	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	124	3	45	279	-	644	206	301	1,601	1,601	-	-	-	-	855	-	-	107,755	168	-
Period 1c Period-Dependent Costs																					
1c.4.1	Insurance	-	-	-	-	-	-	223	22	245	245	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	127	13	140	140	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	120	-	-	-	-	-	30	150	150	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	86	-	-	-	-	-	13	99	99	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	1	1	-	11	-	3	16	16	-	-	103	-	-	-	2,065	25	-	
1c.4.6	Plant energy budget	-	-	-	-	-	-	179	27	206	206	-	-	-	-	-	-	-	-	-	-
1c.4.7	NRC Fees	-	-	-	-	-	-	68	7	74	74	-	-	-	-	-	-	-	-	-	-
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	32	3	35	-	35	-	-	-	-	-	-	-	-	-
1c.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	254	38	292	-	292	-	-	-	-	-	-	-	-	-
1c.4.10	ISFSI Operating Costs	-	-	-	-	-	-	9	1	11	-	11	-	-	-	-	-	-	-	-	-
1c.4.11	NEI Fees	-	-	-	-	-	-	33	3	37	37	-	-	-	-	-	-	-	-	-	-
1c.4.12	Security Staff Cost	-	-	-	-	-	-	301	45	346	346	-	-	-	-	-	-	-	-	-	15,013
1c.4.13	Utility Staff Cost	-	-	-	-	-	-	6,140	921	7,061	7,061	-	-	-	-	-	-	-	-	-	111,600
1c.4	Subtotal Period 1c Period-Dependent Costs	-	206	1	1	-	11	7,367	1,127	8,712	8,375	338	-	-	103	-	-	-	2,065	25	126,613
1c.0	TOTAL PERIOD 1c COST	124	614	46	280	-	655	8,361	1,716	11,796	11,458	338	-	-	103	855	-	-	109,819	17,081	127,196
PERIOD 1 TOTALS		2,162	1,439	91	509	-	1,246	59,138	10,299	74,884	71,815	3,069	-	-	809	1,527	-	-	208,633	40,929	785,259
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	503	126	629	629	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	503	126	629	629	-	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	4,268	640	4,908	-	4,908	-	-	-	-	-	-	-	-	-
2a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	3	0	3	3	-	-	-	-	-	-	-	-	-	-
2a.3.3	Fixed Overhead	-	-	-	-	-	-	640	96	736	736	-	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	4,911	736	5,647	740	4,908	-	-	-	-	-	-	-	-	-
Period 2a Period-Dependent Costs																					
2a.4.1	Insurance	-	-	-	-	-	-	1,707	171	1,878	1,652	226	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	1,999	200	2,199	1,372	826	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
2a.4.4	Disposal of DAW generated	-	-	21	22	-	168	-	47	258	258	-	-	1,617	-	-	-	32,412	397	-	
2a.4.5	Plant energy budget	-	-	-	-	-	-	2,113	317	2,430	324	2,106	-	-	-	-	-	-	-	-	-
2a.4.6	NRC Fees	-	-	-	-	-	-	936	94	1,030	1,030	-	-	-	-	-	-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	500	50	550	-	550	-	-	-	-	-	-	-	-	-
2a.4.8	Spent Fuel Pool O&M	-	-	-	-	-	-	3,966	598	4,564	-	4,564	-	-	-	-	-	-	-	-	-
2a.4.9	ISFSI Operating Costs	-	-	-	-	-	-	148	22	166	-	166	-	-	-	-	-	-	-	-	-
2a.4.10	NEI Fees	-	-	-	-	-	-	524	52	576	-	576	-	-	-	-	-	-	-	-	-
2a.4.11	Security Staff Cost	-	-	-	-	-	-	2,592	389	2,981	625	2,356	-	-	-	-	-	-	-	-	129,314
2a.4.12	Utility Staff Cost	-	-	-	-	-	-	17,624	2,644	20,268	4,245	16,022	-	-	-	-	-	-	-	-	331,629
2a.4	Subtotal Period 2a Period-Dependent Costs	-	245	21	22	-	168	32,127	4,645	37,226	9,814	27,415	-	-	1,617	-	-	-	32,412	397	460,943

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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
2a.0	TOTAL PERIOD 2a COST	-	245	21	22	-	166	37,541	5,507	43,504	11,182	32,322	-	-	1,617	-	-	-	32,412	397	460,943
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	2,006	502	2,508	2,508	-	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	2,006	502	2,508	2,508	-	-	-	-	-	-	-	-	-	-
Period 2b Collateral Costs																					
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,651	248	1,898	-	1,898	-	-	-	-	-	-	-	-	-
2b.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	13	1	14	14	-	-	-	-	-	-	-	-	-	-
2b.3.3	Fixed Overhead	-	-	-	-	-	-	2,554	383	2,937	2,937	-	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	4,217	632	4,849	2,950	1,898	-	-	-	-	-	-	-	-	-
Period 2b Period-Dependent Costs																					
2b.4.1	Insurance	-	-	-	-	-	-	6,181	618	6,799	6,591	208	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	13,974	1,397	15,372	5,476	9,896	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	979	-	-	-	-	-	245	1,223	1,223	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	83	88	-	670	-	189	1,030	1,030	-	-	-	6,453	-	-	-	129,315	1,584	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	1,124	169	1,293	1,293	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	3,735	373	4,108	4,108	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees	-	-	-	-	-	-	805	81	886	-	886	-	-	-	-	-	-	-	-	-
2b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	583	88	671	-	671	-	-	-	-	-	-	-	-	-
2b.4.9	Security Staff Cost	-	-	-	-	-	-	4,061	609	4,670	2,494	2,176	-	-	-	-	-	-	-	-	202,710
2b.4.10	Utility Staff Cost	-	-	-	-	-	-	21,421	3,213	24,634	16,938	7,696	-	-	-	-	-	-	-	-	392,771
2b.4	Subtotal Period 2b Period-Dependent Costs	-	979	83	88	-	670	51,884	6,982	60,886	39,153	21,532	-	-	6,453	-	-	-	129,315	1,584	595,481
2b.0	TOTAL PERIOD 2b COST	-	979	83	88	-	670	58,107	8,115	68,042	44,611	23,431	-	-	6,453	-	-	-	129,315	1,584	595,481
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2c.1.5	Maintenance supplies	-	-	-	-	-	-	4,017	1,004	5,022	5,022	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	4,017	1,004	5,022	5,022	-	-	-	-	-	-	-	-	-	-
Period 2c Collateral Costs																					
2c.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	25	3	28	28	-	-	-	-	-	-	-	-	-	-
2c.3.2	Fixed Overhead	-	-	-	-	-	-	5,114	767	5,881	5,881	-	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	5,139	770	5,909	5,909	-	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	11,999	1,200	13,199	13,199	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	9,969	997	10,965	10,965	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	1,960	-	-	-	-	-	490	2,450	2,450	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	167	177	-	1,341	-	379	2,063	2,063	-	-	-	12,923	-	-	-	258,963	3,173	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,251	338	2,589	2,589	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	7,480	748	8,228	8,228	-	-	-	-	-	-	-	-	-	-
2c.4.7	Security Staff Cost	-	-	-	-	-	-	4,343	651	4,994	4,994	-	-	-	-	-	-	-	-	-	216,638
2c.4.8	Utility Staff Cost	-	-	-	-	-	-	29,495	4,424	33,919	33,919	-	-	-	-	-	-	-	-	-	566,588
2c.4	Subtotal Period 2c Period-Dependent Costs	-	1,960	167	177	-	1,341	65,536	9,227	78,407	78,407	-	-	-	12,923	-	-	-	258,963	3,173	783,221

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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
2c.0	TOTAL PERIOD 2c COST	-	1,980	167	177	-	1,341	74,693	11,000	89,338	89,338	-	-	-	12,923	-	-	-	258,963	3,173	783,221
PERIOD 2 TOTALS		-	3,184	271	287	-	2,179	170,341	24,822	200,884	145,131	55,753	-	-	20,993	-	-	-	420,690	5,154	1,839,648
PERIOD 3a - Reactivate Site Following SAFSTOR Dormancy																					
Period 3a Direct Decommissioning Activities																					
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
3a.1.2	Review plant dwgs & specs.	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	124	19	143	143	-	-	-	-	-	-	-	-	-	1,300
3a.1.6	Define major work sequence	-	-	-	-	-	-	717	108	824	824	-	-	-	-	-	-	-	-	-	7,500
3a.1.7	Perform SER and EA	-	-	-	-	-	-	296	44	341	341	-	-	-	-	-	-	-	-	-	3,100
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	478	72	549	549	-	-	-	-	-	-	-	-	-	5,000
3a.1.9	Prepare/submit License Termination Plan	-	-	-	-	-	-	391	59	450	450	-	-	-	-	-	-	-	-	-	4,098
3a.1.10	Receive NRC approval of termination plan									a											
Activity Specifications																					
3a.1.11.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	704	106	810	729	-	81	-	-	-	-	-	-	-	7,370
3a.1.11.2	Plant systems	-	-	-	-	-	-	396	60	458	412	-	46	-	-	-	-	-	-	-	4,167
3a.1.11.3	Reactor internals	-	-	-	-	-	-	678	102	780	780	-	-	-	-	-	-	-	-	-	7,100
3a.1.11.4	Reactor vessel	-	-	-	-	-	-	621	93	714	714	-	-	-	-	-	-	-	-	-	6,500
3a.1.11.5	Biological shield	-	-	-	-	-	-	48	7	55	55	-	-	-	-	-	-	-	-	-	500
3a.1.11.6	Steam generators	-	-	-	-	-	-	298	45	343	343	-	-	-	-	-	-	-	-	-	3,120
3a.1.11.7	Reinforced concrete	-	-	-	-	-	-	153	23	176	88	-	88	-	-	-	-	-	-	-	1,800
3a.1.11.8	Main Turbine	-	-	-	-	-	-	38	6	44	-	-	44	-	-	-	-	-	-	-	400
3a.1.11.9	Main Condensers	-	-	-	-	-	-	38	6	44	-	-	44	-	-	-	-	-	-	-	400
3a.1.11.10	Plant structures & buildings	-	-	-	-	-	-	298	45	343	171	-	171	-	-	-	-	-	-	-	3,120
3a.1.11.11	Waste management	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
3a.1.11.12	Facility & site closeout	-	-	-	-	-	-	86	13	99	49	-	49	-	-	-	-	-	-	-	900
3a.1.11	Total	-	-	-	-	-	-	3,801	570	4,371	3,848	-	523	-	-	-	-	-	-	-	39,777
Planning & Site Preparations																					
3a.1.12	Prepare dismantling sequence	-	-	-	-	-	-	229	34	264	264	-	-	-	-	-	-	-	-	-	2,400
3a.1.13	Plant prep. & temp. svces	-	-	-	-	-	-	2,419	363	2,782	2,782	-	-	-	-	-	-	-	-	-	-
3a.1.14	Design water clean-up system	-	-	-	-	-	-	134	20	154	154	-	-	-	-	-	-	-	-	-	1,400
3a.1.15	Rigging/Cont. Cntrl Envlpe/tooling/etc.	-	-	-	-	-	-	2,048	307	2,355	2,355	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	118	18	135	135	-	-	-	-	-	-	-	-	-	1,230
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	11,414	1,712	13,126	12,603	-	523	-	-	-	-	-	-	-	72,703
Period 3a Collateral Costs																					
3a.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
3a.3.2	Fixed Overhead	-	-	-	-	-	-	800	120	920	920	-	-	-	-	-	-	-	-	-	-
3a.3	Subtotal Period 3a Collateral Costs	-	-	-	-	-	-	801	120	921	921	-	-	-	-	-	-	-	-	-	-
Period 3a Period-Dependent Costs																					
3a.4.1	Insurance	-	-	-	-	-	-	375	38	413	413	-	-	-	-	-	-	-	-	-	-
3a.4.2	Property taxes	-	-	-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	-	404	-	-	-	8,103	99	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	528	79	608	608	-	-	-	-	-	-	-	-	-	-
3a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-
3a.4.8	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-
3a.4.9	Security Staff Cost	-	-	-	-	-	-	324	49	373	373	-	-	-	-	-	-	-	-	-	16,164
3a.4.10	Utility Staff Cost	-	-	-	-	-	-	15,182	2,277	17,459	17,459	-	-	-	-	-	-	-	-	-	264,364
3a.4	Subtotal Period 3a Period-Dependent Costs	-	582	5	6	-	42	17,305	2,656	20,596	20,596	-	-	-	404	-	-	-	8,103	99	280,529

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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.0	TOTAL PERIOD 3a COST	-	582	5	6	-	42	29,521	4,468	34,644	34,120	-	523	-	404	-	-	-	8,103	99	353,231
PERIOD 3b - Decommissioning Preparations																					
Period 3b Direct Decommissioning Activities																					
Detailed Work Procedures																					
3b.1.1.1	Plant systems	-	-	-	-	-	-	452	68	520	468	-	52	-	-	-	-	-	-	-	4,733
3b.1.1.2	Reactor internals	-	-	-	-	-	-	239	36	275	275	-	-	-	-	-	-	-	-	-	2,500
3b.1.1.3	Remaining buildings	-	-	-	-	-	-	129	19	148	37	-	111	-	-	-	-	-	-	-	1,350
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	96	14	110	110	-	-	-	-	-	-	-	-	-	1,000
3b.1.1.7	Reactor vessel	-	-	-	-	-	-	347	52	399	399	-	-	-	-	-	-	-	-	-	3,630
3b.1.1.8	Facility closeout	-	-	-	-	-	-	115	17	132	68	-	68	-	-	-	-	-	-	-	1,200
3b.1.1.9	Missile shields	-	-	-	-	-	-	43	6	49	49	-	-	-	-	-	-	-	-	-	450
3b.1.1.10	Biological shield	-	-	-	-	-	-	115	17	132	132	-	-	-	-	-	-	-	-	-	1,200
3b.1.1.11	Steam generators	-	-	-	-	-	-	440	66	506	506	-	-	-	-	-	-	-	-	-	4,600
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	96	14	110	55	-	55	-	-	-	-	-	-	-	1,000
3b.1.1.13	Main Turbine	-	-	-	-	-	-	149	22	171	-	-	171	-	-	-	-	-	-	-	1,560
3b.1.1.14	Main Condensers	-	-	-	-	-	-	149	22	171	-	-	171	-	-	-	-	-	-	-	1,560
3b.1.1.15	Auxiliary building	-	-	-	-	-	-	261	39	300	270	-	30	-	-	-	-	-	-	-	2,730
3b.1.1.16	Reactor building	-	-	-	-	-	-	261	39	300	270	-	30	-	-	-	-	-	-	-	2,730
3b.1.1	Total	-	-	-	-	-	-	3,081	462	3,543	2,856	-	687	-	-	-	-	-	-	-	32,243
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	3,081	462	3,543	2,856	-	687	-	-	-	-	-	-	-	32,243
Period 3b Additional Costs																					
3b.2.1	Asbestos removal program	-	381	0	71	-	84	-	127	663	663	-	-	-	6,219	-	-	-	51,498	6,948	-
3b.2.2	Site Characterization Survey	-	-	-	-	-	-	852	256	1,108	1,108	-	-	-	-	-	-	-	-	-	-
3b.2	Subtotal Period 3b Additional Costs	-	381	0	71	-	84	852	383	1,772	1,772	-	-	-	6,219	-	-	-	51,498	6,948	-
Period 3b Collateral Costs																					
3b.3.1	Decon equipment	720	-	-	-	-	-	-	108	828	828	-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
3b.3.3	Small tool allowance	-	5	-	-	-	-	-	1	6	6	-	-	-	-	-	-	-	-	-	-
3b.3.4	Pipe cutting equipment	-	957	-	-	-	-	-	143	1,100	1,100	-	-	-	-	-	-	-	-	-	-
3b.3.5	Florida LLRW Inspection Fee	-	-	-	-	-	-	13	1	14	14	-	-	-	-	-	-	-	-	-	-
3b.3.6	Fixed Overhead	-	-	-	-	-	-	406	61	466	466	-	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	720	961	-	-	-	-	1,707	508	3,896	3,896	-	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Decon supplies	22	-	-	-	-	-	-	5	27	27	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	216	22	238	238	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	253	25	279	279	-	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	148	-	-	-	-	-	37	185	185	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	171	-	-	-	-	-	26	197	197	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	3	3	-	21	-	6	33	33	-	-	-	205	-	-	-	4,107	50	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	268	40	308	308	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	134	13	148	148	-	-	-	-	-	-	-	-	-	-
3b.4.9	NEI Fees	-	-	-	-	-	-	66	7	73	73	-	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	164	25	189	189	-	-	-	-	-	-	-	-	-	8,193
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	4,310	647	4,957	4,957	-	-	-	-	-	-	-	-	-	64,486
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	7,862	1,179	9,041	9,041	-	-	-	-	-	-	-	-	-	137,164
3b.4	Subtotal Period 3b Period-Dependent Costs	22	319	3	3	-	21	13,274	2,032	15,673	15,673	-	-	-	205	-	-	-	4,107	50	209,843
3b.0	TOTAL PERIOD 3b COST	742	1,661	3	74	-	105	18,915	3,384	24,884	24,197	-	687	-	6,424	-	-	-	55,605	6,998	242,086
PERIOD 3 TOTALS		742	2,243	8	80	-	147	48,435	7,872	59,527	58,317	-	1,211	-	6,828	-	-	-	63,708	7,098	595,317

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 - Large Component Removal																					
Period 4a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
4a.1.1.1	Reactor Coolant Piping	9	32	4	7	56	76	-	41	224	224	-	-	200	200	-	-	-	46,454	1,055	-
4a.1.1.2	Pressurizer Relief Tank	4	15	3	5	37	46	-	24	132	132	-	-	133	133	-	-	-	29,424	480	-
4a.1.1.3	Reactor Coolant Pumps & Motors	7	45	28	228	849	924	-	410	2,491	2,491	-	-	1,366	1,182	-	-	-	633,930	1,637	-
4a.1.1.4	Pressurizer	5	41	421	481	-	479	-	247	1,674	1,674	-	-	-	1,793	-	-	-	197,230	1,774	-
4a.1.1.5	Steam Generators	24	2,162	1,725	2,758	1,931	2,625	-	2,065	13,309	13,309	-	-	10,819	9,831	-	-	-	2,186,271	18,686	-
4a.1.1.6	CRDMs/ICIs/Service Structure Removal	21	88	85	44	70	146	-	89	522	522	-	-	753	2,540	-	-	-	74,266	2,141	-
4a.1.1.7	Reactor Vessel Internals	50	1,582	3,235	888	-	3,897	139	4,211	14,001	14,001	-	-	-	697	376	986	-	223,668	17,579	835
4a.1.1.8	Vessel & Internals GTCC Disposal	-	-	45	-	-	9,040	-	1,361	10,446	10,446	-	-	-	-	-	-	487	100,132	-	-
4a.1.1.9	Reactor Vessel	-	3,291	778	341	-	4,124	139	4,831	13,505	13,505	-	-	-	5,433	2,383	-	-	796,882	17,579	835
4a.1.1	Totals	119	7,237	6,323	4,752	2,942	21,356	278	13,296	56,305	56,305	-	-	13,271	21,809	2,758	986	487	4,288,257	60,933	1,670
Removal of Major Equipment																					
4a.1.2	Main Turbine/Generator	-	200	74	28	600	-	-	152	1,055	1,055	-	-	2,625	-	-	-	-	240,125	5,183	-
4a.1.3	Main Condensers	-	686	46	24	518	-	-	258	1,533	1,533	-	-	4,808	-	-	-	-	207,273	16,250	-
Cascading Costs from Clean Building Demolition																					
4a.1.4.1	Containment	-	547	-	-	-	-	-	82	629	629	-	-	-	-	-	-	-	-	8,302	-
4a.1.4.2	Fuel Handling	-	43	-	-	-	-	-	6	49	49	-	-	-	-	-	-	-	-	708	-
4a.1.4	Totals	-	590	-	-	-	-	-	89	679	679	-	-	-	-	-	-	-	-	9,010	-
Disposal of Plant Systems																					
4a.1.5.1	Ameriap	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,715	-
4a.1.5.2	Auxiliary Feedwater	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	98	-
4a.1.5.3	Auxiliary Feedwater - Insulated	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	411	-
4a.1.5.4	Auxiliary Feedwater - Insulated - RCA	-	84	1	3	69	-	-	32	189	189	-	-	684	-	-	-	-	27,785	2,085	-
4a.1.5.5	Auxiliary Feedwater - RCA	-	18	0	1	17	-	-	7	43	43	-	-	166	-	-	-	-	6,761	445	-
4a.1.5.6	Auxiliary Steam	-	0	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	10	-
4a.1.5.7	Auxiliary Steam - Insulated	-	24	-	-	-	-	-	4	27	-	-	27	-	-	-	-	-	-	734	-
4a.1.5.8	Auxiliary Steam - Insulated - RCA	-	5	-	0	8	-	-	2	13	13	-	-	56	-	-	-	-	2,259	118	-
4a.1.5.9	Auxiliary Steam - RCA	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	15	1	-
4a.1.5.10	Breathing Air - Insulated - RCA	-	3	-	0	2	-	-	1	7	7	-	-	22	-	-	-	-	900	81	-
4a.1.5.11	Breathing Air - RCA	-	11	-	0	9	-	-	4	24	24	-	-	87	-	-	-	-	3,546	269	-
4a.1.5.12	Chemical & Volume Control	-	72	5	12	85	144	-	69	387	387	-	-	839	328	-	-	-	80,850	1,837	-
4a.1.5.13	Chemical & Volume Control - Insulated	-	176	6	14	30	239	-	111	576	576	-	-	296	490	-	-	-	56,048	4,380	-
4a.1.5.14	Circulating Water	-	74	-	-	-	-	-	11	85	-	-	85	-	-	-	-	-	-	2,204	-
4a.1.5.15	Component Cooling Water	-	118	-	-	-	-	-	18	136	-	-	136	-	-	-	-	-	-	3,558	-
4a.1.5.16	Component Cooling Water - RCA	-	254	6	28	591	-	-	157	1,036	1,036	-	-	5,822	-	-	-	-	236,429	6,360	-
4a.1.5.17	Condensate	-	135	-	-	-	-	-	20	155	-	-	155	-	-	-	-	-	-	3,960	-
4a.1.5.18	Condensate - Insulated	-	43	-	-	-	-	-	6	49	-	-	49	-	-	-	-	-	-	1,309	-
4a.1.5.19	Condensate Polishing	-	25	-	-	-	-	-	4	29	-	-	29	-	-	-	-	-	-	734	-
4a.1.5.20	Condensate Polishing - Ins	-	66	-	-	-	-	-	10	76	-	-	76	-	-	-	-	-	-	1,966	-
4a.1.5.21	Condensate Recovery	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	373	-
4a.1.5.22	Condensate Recovery - Insulated	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	60	-
4a.1.5.23	Condensate Recovery - Insulated - RCA	-	4	-	0	3	-	-	1	8	8	-	-	26	-	-	-	-	1,045	86	-
4a.1.5.24	Condensate Recovery - RCA	-	14	0	1	12	-	-	5	32	32	-	-	115	-	-	-	-	4,669	341	-
4a.1.5.25	Condensate Storage	-	55	-	-	-	-	-	8	63	-	-	63	-	-	-	-	-	-	1,572	-
4a.1.5.26	Condenser	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	545	-
4a.1.5.27	Containment Post Accident Eval	-	1	-	-	0	-	-	0	1	1	-	-	3	-	-	-	-	127	14	-
4a.1.5.28	Containment Purge	-	35	1	5	99	-	-	24	164	164	-	-	972	-	-	-	-	39,455	864	-
4a.1.5.29	Electrical - Clean	-	1,082	-	-	-	-	-	162	1,244	-	-	1,244	-	-	-	-	-	-	31,193	-
4a.1.5.30	Extraction Steam	-	8	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	-	244	-
4a.1.5.31	Extraction Steam - Insulated	-	39	-	-	-	-	-	6	45	-	-	45	-	-	-	-	-	-	1,194	-
4a.1.5.32	Feedwater	-	38	-	-	-	-	-	6	43	-	-	43	-	-	-	-	-	-	1,095	-
4a.1.5.33	Feedwater - Insulated	-	109	-	-	-	-	-	16	125	-	-	125	-	-	-	-	-	-	3,321	-

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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.1.5.34	Feedwater - Insulated - RCA	-	47	1	4	93	-	-	26	172	172	-	-	916	-	-	-	-	37,298	1,178	-
4a.1.5.35	Feedwater - RCA	-	4	-	0	8	-	-	2	15	15	-	-	81	-	-	-	-	3,290	103	-
4a.1.5.36	Feedwater Heater Drains & Vents	-	35	-	-	-	-	-	5	41	-	-	41	-	-	-	-	-	-	1,053	-
4a.1.5.37	Feedwater Heater Drains & Vents - Ins	-	238	-	-	-	-	-	36	273	-	-	273	-	-	-	-	-	-	7,237	-
4a.1.5.38	Generator	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	126	-
4a.1.5.39	Generator - Insulated	-	1	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	47	-
4a.1.5.40	Instrument Air	-	10	-	-	-	-	-	1	11	-	-	11	-	-	-	-	-	-	291	-
4a.1.5.41	Instrument Air - Insulated	-	8	-	-	-	-	-	1	9	-	-	9	-	-	-	-	-	-	239	-
4a.1.5.42	Intake Cooling Water	-	117	-	-	-	-	-	17	134	-	-	134	-	-	-	-	-	-	3,548	-
4a.1.5.43	Main Steam - Insulated	-	131	-	-	-	-	-	20	151	-	-	151	-	-	-	-	-	-	3,903	-
4a.1.5.44	Main Steam - Insulated - RCA	-	32	1	3	69	-	-	19	124	124	-	-	684	-	-	-	-	27,764	800	-
4a.1.5.45	Safety Injection	-	100	4	16	391	-	-	102	675	675	-	-	3,856	-	-	-	-	156,578	4,069	-
4a.1.5.46	Safety Injection - Insulated	-	78	1	5	112	-	-	37	234	234	-	-	1,107	-	-	-	-	44,965	1,918	-
4a.1.5.47	Safety Injection Accumulator	-	159	3	16	344	-	-	84	616	616	-	-	3,388	-	-	-	-	137,805	3,970	-
4a.1.5.48	Sample - NSSS	-	18	0	1	12	-	-	6	37	37	-	-	120	-	-	-	-	4,856	467	-
4a.1.5.49	Sample - NSSS - Ins	-	17	-	0	4	-	-	5	27	27	-	-	42	-	-	-	-	1,710	463	-
4a.1.5.50	Screen Wash	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	531	-
4a.1.5.51	Secondary Sample	-	3	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	83	-
4a.1.5.52	Secondary Sample - RCA	-	4	-	0	4	-	-	1	9	9	-	-	35	-	-	-	-	1,436	96	-
4a.1.5.53	Secondary Wet Layup	-	17	-	-	-	-	-	2	19	-	-	19	-	-	-	-	-	-	503	-
4a.1.5.54	Secondary Wet Layup - RCA	-	13	0	1	14	-	-	5	33	33	-	-	140	-	-	-	-	5,685	309	-
4a.1.5.55	Turbine Building HVAC	-	13	-	-	-	-	-	2	15	-	-	15	-	-	-	-	-	-	390	-
4a.1.5.56	Turbine Lube Oil	-	31	-	-	-	-	-	5	35	-	-	35	-	-	-	-	-	-	906	-
4a.1.5.57	Turbine Plant Chemical Addition	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	77	-
4a.1.5.58	Turbine Plant Cooling Water	-	66	-	-	-	-	-	10	76	-	-	76	-	-	-	-	-	-	1,975	-
4a.1.5.59	Turbine Plant Cooling Water - Insulated	-	36	-	-	-	-	-	5	42	-	-	42	-	-	-	-	-	-	1,107	-
4a.1.5.60	Turbine Steam	-	49	-	-	-	-	-	7	57	-	-	57	-	-	-	-	-	-	1,496	-
4a.1.5.61	Turbine Steam - Insulated	-	22	-	-	-	-	-	3	25	-	-	25	-	-	-	-	-	-	669	-
4a.1.5	Totals	-	3,930	29	113	1,976	383	-	1,122	7,552	4,422	-	3,131	19,462	818	-	-	-	860,874	110,771	-
4a.1.6	Scaffolding in support of decommissioning	-	130	2	1	16	1	-	36	186	186	-	-	146	7	-	-	-	7,318	3,870	-
4a.1	Subtotal Period 4a Activity Costs	119	12,773	6,474	4,918	6,053	21,740	278	14,954	67,310	64,179	-	3,131	40,310	22,634	2,758	986	487	5,583,847	206,017	1,870
Period 4a Collateral Costs																					
4a.3.1	Process liquid waste	3	-	3	17	-	94	-	28	145	145	-	-	-	-	52	-	-	6,586	10	-
4a.3.2	Small tool allowance	-	139	-	-	-	-	-	21	160	144	-	16	-	-	-	-	-	-	-	-
4a.3.3	Florida LLRW Inspection Fee	-	-	-	-	-	-	135	14	149	149	-	-	-	-	-	-	-	-	-	-
4a.3.4	Fixed Overhead	-	-	-	-	-	-	877	132	1,008	1,008	-	-	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	3	139	3	17	-	94	1,012	194	1,462	1,446	-	16	-	-	52	-	-	6,586	10	-
Period 4a Period-Dependent Costs																					
4a.4.1	Decon supplies	47	-	-	-	-	-	-	12	58	58	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	468	47	515	515	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	548	55	602	542	-	60	-	-	-	-	-	-	-	-
4a.4.4	Health physics supplies	-	968	-	-	-	-	-	242	1,210	1,210	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	1,901	-	-	-	-	-	285	2,186	2,186	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	33	35	-	262	-	74	404	404	-	-	-	2,526	-	-	-	50,650	621	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	733	110	843	843	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	-	-	-	-	-	-	359	36	395	395	-	-	-	-	-	-	-	-	-	-
4a.4.9	Radwaste Processing Equipment/Services	-	-	-	-	-	-	394	59	453	453	-	-	-	-	-	-	-	-	-	-
4a.4.10	NEI Fees	-	-	-	-	-	-	143	14	158	158	-	-	-	-	-	-	-	-	-	-
4a.4.11	Security Staff Cost	-	-	-	-	-	-	1,273	191	1,464	1,464	-	-	-	-	-	-	-	-	-	63,497
4a.4.12	DOC Staff Cost	-	-	-	-	-	-	11,162	1,674	12,836	12,836	-	-	-	-	-	-	-	-	-	173,714
4a.4.13	Utility Staff Cost	-	-	-	-	-	-	16,759	2,514	19,273	19,273	-	-	-	-	-	-	-	-	-	302,080
4a.4	Subtotal Period 4a Period-Dependent Costs	47	2,868	33	35	-	262	31,839	5,313	40,397	40,337	-	60	-	2,526	-	-	-	50,650	621	539,291
4a.0	TOTAL PERIOD 4a COST	169	15,781	6,510	4,970	6,053	22,097	33,129	20,461	109,168	105,962	-	3,207	40,310	25,162	2,811	986	487	5,641,083	206,647	540,962

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 - Site Decontamination																					
Period 4b Direct Decommissioning Activities																					
4b.1.1	Remove spent fuel racks	302	34	73	63	-	343	-	262	1,077	1,077	-	-	-	2,106	-	-	-	210,800	1,023	-
Disposal of Plant Systems																					
4b.1.2.1	Containment Emergency Filter	-	4	-	0	5	-	-	2	11	11	-	-	47	-	-	-	-	1,929	99	-
4b.1.2.2	Containment Normal & Emerg Cooling	-	439	7	35	757	-	-	229	1,468	1,468	-	-	7,456	-	-	-	-	302,798	9,307	-
4b.1.2.3	Containment Normal & Emerg Cooling - Ins	-	3	-	0	3	-	-	1	7	7	-	-	28	-	-	-	-	1,139	71	-
4b.1.2.4	Containment Spray	-	51	1	4	80	-	-	25	161	161	-	-	792	-	-	-	-	32,145	1,252	-
4b.1.2.5	Containment Spray - Insulated	-	39	0	2	44	-	-	17	103	103	-	-	432	-	-	-	-	17,525	948	-
4b.1.2.6	EDG Building HVAC	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	39	-
4b.1.2.7	Electrical - Contaminated	-	157	2	8	168	-	-	66	400	400	-	-	1,656	-	-	-	-	67,265	3,933	-
4b.1.2.8	Electrical - Decontaminated	-	1,413	15	71	1,526	-	-	594	3,620	3,620	-	-	15,032	-	-	-	-	610,470	35,510	-
4b.1.2.9	Emergency Diesel Engine & Oil	-	52	-	-	-	-	-	8	60	-	-	60	-	-	-	-	-	-	1,507	-
4b.1.2.10	Emergency Diesel Engine & Oil - Ins	-	2	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	62	-
4b.1.2.11	Fire Protection	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	394	-
4b.1.2.12	Fire Protection - RCA	-	69	1	3	66	-	-	28	167	167	-	-	652	-	-	-	-	28,473	1,612	-
4b.1.2.13	Fuel Handling HVAC	-	42	1	3	71	-	-	22	138	138	-	-	697	-	-	-	-	28,296	906	-
4b.1.2.14	Instrument Air - Insulated - RCA	-	46	0	1	28	-	-	16	92	92	-	-	280	-	-	-	-	11,377	1,153	-
4b.1.2.15	Instrument Air - RCA	-	27	0	1	18	-	-	10	55	55	-	-	177	-	-	-	-	7,206	663	-
4b.1.2.16	Miscellaneous - RCA	-	5	0	1	21	-	-	5	32	32	-	-	206	-	-	-	-	8,368	127	-
4b.1.2.17	Primary Water Makeup	-	58	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,691	-
4b.1.2.18	Reactor Coolant - Insulated	-	50	1	4	11	62	-	30	158	158	-	-	104	128	-	-	-	15,717	1,250	-
4b.1.2.19	Refueling Equipment	-	102	3	11	108	106	-	70	400	400	-	-	1,061	217	-	-	-	62,509	2,629	-
4b.1.2.20	Residual Heat Removal	-	58	23	59	247	869	-	280	1,536	1,536	-	-	2,432	1,784	-	-	-	256,731	1,598	-
4b.1.2.21	Residual Heat Removal - Insulated	-	173	11	30	153	412	-	175	953	953	-	-	1,506	846	-	-	-	137,010	4,393	-
4b.1.2.22	Service Water	-	0	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	10	-
4b.1.2.23	Service Water - RCA	-	3	-	0	5	-	-	1	9	9	-	-	44	-	-	-	-	1,802	69	-
4b.1.2.24	Spent Fuel Pool Cooling	-	74	4	11	42	171	-	70	372	372	-	-	414	355	-	-	-	40,379	1,840	-
4b.1.2.25	Spent Fuel Pool Cooling - Insulated	-	35	2	4	14	68	-	28	151	151	-	-	135	139	-	-	-	17,966	855	-
4b.1.2.26	Steam Generator Wet Layup	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	25	-
4b.1.2.27	Steam Generator Wet Layup - RCA	-	1	-	-	1	-	-	0	3	3	-	-	10	-	-	-	-	398	25	-
4b.1.2.28	Waste Disposal	-	26	1	2	11	35	-	17	93	93	-	-	109	75	-	-	-	10,683	649	-
4b.1.2.29	Waste Disposal - Insulated	-	54	2	5	11	69	-	38	200	200	-	-	108	182	-	-	-	20,685	1,338	-
4b.1.2	Totals	-	2,996	76	257	3,389	1,811	-	1,744	10,272	10,127	-	145	33,380	3,726	-	-	-	1,689,071	73,980	-
4b.1.3	Scaffolding in support of decommissioning	-	196	2	1	25	2	-	54	279	279	-	-	220	11	-	-	-	10,977	5,804	-
Decontamination of Site Buildings																					
4b.1.4.1	Containment	614	542	84	104	241	101	-	528	2,213	2,213	-	-	9,624	823	-	-	-	717,491	28,086	-
4b.1.4.2	Fuel Handling	242	273	2	9	140	17	-	216	899	899	-	-	1,375	106	-	-	-	66,395	12,632	-
4b.1.4	Totals	856	815	86	113	380	119	-	744	3,112	3,112	-	-	11,199	728	-	-	-	783,886	40,718	-
4b.1	Subtotal Period 4b Activity Costs	1,158	4,040	237	434	3,794	2,275	-	2,803	14,741	14,596	-	145	44,798	6,571	-	-	-	2,694,533	121,505	-
Period 4b Additional Costs																					
4b.2.1	Curie Surcharge (excluding RPV)	-	-	-	-	-	86	-	21	107	107	-	-	-	-	-	-	-	-	-	-
4b.2.2	ISFSI License Termination	-	198	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
4b.2	Subtotal Period 4b Additional Costs	-	198	4	44	-	388	705	259	1,599	107	1,491	-	-	1,633	-	-	-	165,471	3,760	1,280
Period 4b Collateral Costs																					
4b.3.1	Process liquid waste	7	-	7	40	-	144	-	46	244	244	-	-	-	-	125	-	-	15,755	25	-
4b.3.2	Small tool allowance	-	68	-	-	-	-	-	13	101	101	-	-	-	-	-	-	-	-	-	-
4b.3.3	Florida LLRW Inspection Fee	-	-	-	-	-	-	109	11	120	120	-	-	-	-	-	-	-	-	-	-
4b.3.4	Fixed Overhead	-	-	-	-	-	-	2,107	316	2,423	2,423	-	-	-	-	-	-	-	-	-	-
4b.3	Subtotal Period 4b Collateral Costs	7	68	7	40	-	144	2,216	386	2,888	2,888	-	-	-	-	125	-	-	15,755	25	-

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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																					
4b.4.1	Decon supplies	377	-	-	-	-	-	-	94	471	471	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	1,124	112	1,236	1,236	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	1,316	132	1,447	1,447	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	1,067	-	-	-	-	-	267	1,334	1,334	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,594	-	-	-	-	-	689	5,283	5,283	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	37	40	-	301	-	85	464	464	-	-	-	2,904	-	-	-	58,195	713	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	1,391	209	1,600	1,600	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	862	86	949	949	-	-	-	-	-	-	-	-	-	-
4b.4.9	Radwaste Processing Equipment/Services	-	-	-	-	-	-	947	142	1,089	1,089	-	-	-	-	-	-	-	-	-	-
4b.4.10	NEI Fees	-	-	-	-	-	-	345	34	379	379	-	-	-	-	-	-	-	-	-	-
4b.4.11	Security Staff Cost	-	-	-	-	-	-	1,706	256	1,962	1,962	-	-	-	-	-	-	-	-	-	85,117
4b.4.12	DOC Staff Cost	-	-	-	-	-	-	17,942	2,691	20,633	20,633	-	-	-	-	-	-	-	-	-	296,537
4b.4.13	Utility Staff Cost	-	-	-	-	-	-	27,433	4,115	31,547	31,547	-	-	-	-	-	-	-	-	-	507,957
4b.4	Subtotal Period 4b Period-Dependent Costs	377	5,661	37	40	-	301	53,065	8,913	68,395	68,395	-	-	-	2,904	-	-	-	58,195	713	889,611
4b.0	TOTAL PERIOD 4b COST	1,541	9,988	285	558	3,794	3,109	55,966	12,361	87,622	85,985	1,491	145	44,796	11,106	125	-	-	2,933,955	126,002	890,891
PERIOD 4d - Delay before License Termination																					
Period 4d Direct Decommissioning Activities																					
Period 4d Collateral Costs																					
4d.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	0	-	0	0	-	-	-	-	-	-	-	-	-	-
4d.3.2	Fixed Overhead	-	-	-	-	-	-	502	75	577	577	-	-	-	-	-	-	-	-	-	-
4d.3	Subtotal Period 4d Collateral Costs	-	-	-	-	-	-	502	75	577	577	-	-	-	-	-	-	-	-	-	-
Period 4d Period-Dependent Costs																					
4d.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4d.4.2	Property taxes	-	-	-	-	-	-	313	31	345	345	-	-	-	-	-	-	-	-	-	-
4d.4.3	Health physics supplies	-	36	-	-	-	-	-	10	48	48	-	-	-	-	-	-	-	-	-	-
4d.4.4	Disposal of DAW generated	-	-	1	1	-	7	-	2	10	10	-	-	-	63	-	-	-	1,271	16	-
4d.4.5	Plant energy budget	-	-	-	-	-	-	22	3	25	25	-	-	-	-	-	-	-	-	-	-
4d.4.6	NRC Fees	-	-	-	-	-	-	147	15	162	162	-	-	-	-	-	-	-	-	-	-
4d.4.7	NEI Fees	-	-	-	-	-	-	82	8	90	90	-	-	-	-	-	-	-	-	-	-
4d.4.8	Utility Staff Cost	-	-	-	-	-	-	529	79	609	609	-	-	-	-	-	-	-	-	-	10,469
4d.4	Subtotal Period 4d Period-Dependent Costs	-	36	1	1	-	7	1,094	148	1,289	1,289	-	-	-	63	-	-	-	1,271	16	10,469
4d.0	TOTAL PERIOD 4d COST	-	36	1	1	-	7	1,596	224	1,866	1,866	-	-	-	63	-	-	-	1,271	16	10,469
PERIOD 4e - License Termination																					
Period 4e Direct Decommissioning Activities																					
4e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
4e.1.2	Terminate license									a											
4e.1	Subtotal Period 4e Activity Costs	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
Period 4e Additional Costs																					
4e.2.1	License Termination Survey	-	-	-	-	-	-	3,396	1,019	4,415	4,415	-	-	-	-	-	-	-	-	71,027	-
4e.2	Subtotal Period 4e Additional Costs	-	-	-	-	-	-	3,396	1,019	4,415	4,415	-	-	-	-	-	-	-	-	71,027	-
Period 4e Collateral Costs																					
4e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
4e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
4e.3.3	Fixed Overhead	-	-	-	-	-	-	603	90	693	693	-	-	-	-	-	-	-	-	-	-
4e.3	Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	1,892	284	2,176	2,176	-	-	-	-	-	-	-	-	-	-

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 4e Period-Dependent Costs																					
4e.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	376	38	414	414	-	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	423	-	-	-	-	-	106	529	529	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	4	4	-	32	-	9	49	49	-	-	-	305	-	-	-	6,105	75	-
4e.4.5	Plant energy budget	-	-	-	-	-	-	106	16	122	122	-	-	-	-	-	-	-	-	-	-
4e.4.6	NRC Fees	-	-	-	-	-	-	247	25	271	271	-	-	-	-	-	-	-	-	-	-
4e.4.7	NEI Fees	-	-	-	-	-	-	99	10	108	108	-	-	-	-	-	-	-	-	-	-
4e.4.8	Security Staff Cost	-	-	-	-	-	-	118	18	136	136	-	-	-	-	-	-	-	-	-	5,893
4e.4.9	DOC Staff Cost	-	-	-	-	-	-	2,169	325	2,495	2,495	-	-	-	-	-	-	-	-	-	36,143
4e.4.10	Utility Staff Cost	-	-	-	-	-	-	2,384	358	2,742	2,742	-	-	-	-	-	-	-	-	-	41,643
4e.4	Subtotal Period 4e Period-Dependent Costs	-	423	4	4	-	32	5,500	904	6,866	6,866	-	-	-	305	-	-	-	6,105	75	83,679
4e.0	TOTAL PERIOD 4e COST	-	423	4	4	-	32	10,914	2,244	13,621	13,621	-	-	-	305	-	-	-	6,105	71,102	83,679
PERIOD 4 TOTALS		1,710	28,230	6,799	5,533	9,847	25,244	101,625	35,289	212,278	207,434	1,491	3,352	85,108	36,638	2,936	986	487	8,582,413	405,767	1,526,000
PERIOD 5b - Site Restoration																					
Period 5b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
5b.1.1.1	Containment	-	3,149	-	-	-	-	-	472	3,621	-	-	3,621	-	-	-	-	-	-	46,080	-
5b.1.1.2	Fuel Handling	-	403	-	-	-	-	-	61	464	-	-	464	-	-	-	-	-	-	6,880	-
5b.1.1.3	Miscellaneous Structures	-	137	-	-	-	-	-	21	158	-	-	158	-	-	-	-	-	-	2,631	-
5b.1.1.4	Seawall	-	75	-	-	-	-	-	11	87	-	-	87	-	-	-	-	-	-	1,251	-
5b.1.1.5	Turbine	-	432	-	-	-	-	-	65	498	-	-	498	-	-	-	-	-	-	9,343	-
5b.1.1.6	Turbine Pedestal	-	357	-	-	-	-	-	54	411	-	-	411	-	-	-	-	-	-	5,055	-
5b.1.1	Totals	-	4,553	-	-	-	-	-	683	5,236	-	-	5,236	-	-	-	-	-	-	73,241	-
Site Closeout Activities																					
5b.1.2	Grade & landscape site	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.1.3	Final report to NRC	-	-	-	-	-	-	149	22	171	171	-	-	-	-	-	-	-	-	-	1,560
5b.1	Subtotal Period 5b Activity Costs	-	4,553	-	-	-	-	149	705	5,407	171	-	5,236	-	-	-	-	-	-	73,241	1,560
Period 5b Additional Costs																					
5b.2.1	Concrete Processing	-	166	-	1	-	-	-	25	192	-	-	192	-	-	-	-	-	-	1,104	-
5b.2.2	ISFSI Site Restoration	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
5b.2	Subtotal Period 5b Additional Costs	-	553	-	1	-	-	21	86	661	-	469	192	-	-	-	-	-	-	2,233	80
Period 5b Collateral Costs																					
5b.3.1	Small tool allowance	-	49	-	-	-	-	-	7	56	-	-	56	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	49	-	-	-	-	-	7	56	-	-	56	-	-	-	-	-	-	-	-
Period 5b Period-Dependent Costs																					
5b.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	956	96	1,051	-	-	1,051	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	4,531	-	-	-	-	-	680	5,211	-	-	5,211	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	135	20	155	-	-	155	-	-	-	-	-	-	-	-
5b.4.5	Security Staff Cost	-	-	-	-	-	-	300	45	345	-	-	345	-	-	-	-	-	-	-	14,957
5b.4.6	DOC Staff Cost	-	-	-	-	-	-	6,088	913	7,002	-	-	7,002	-	-	-	-	-	-	-	95,726
5b.4.7	Utility Staff Cost	-	-	-	-	-	-	3,371	506	3,876	-	-	3,876	-	-	-	-	-	-	-	53,846
5b.4	Subtotal Period 5b Period-Dependent Costs	-	4,531	-	-	-	-	10,849	2,259	17,640	-	-	17,640	-	-	-	-	-	-	-	164,529
5b.0	TOTAL PERIOD 5b COST	-	9,686	-	1	-	-	11,019	3,058	23,784	171	469	23,124	-	-	-	-	-	-	75,474	166,169
PERIOD 5 TOTALS		-	9,686	-	1	-	-	11,019	3,058	23,784	171	469	23,124	-	-	-	-	-	-	75,474	166,169
TOTAL COST TO DECOMMISSION		4,613	42,782	7,169	6,410	9,847	28,816	390,559	81,141	571,337	482,869	60,782	27,687	85,108	65,268	4,462	986	487	9,275,445	534,422	4,912,390

Table D-1
Turkey Point Plant, Unit 3
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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				Burial / Processed Wt., Lbs.	Craft Manhours	Utility and Contractor Manhours
															Class A Cu. Feet	Class B Cu. Feet	Class C Cu. Feet	GTCC Cu. Feet			

TOTAL COST TO DECOMMISSION WITH 16.55% CONTINGENCY:	$571,337	thousands of 2004 dollars
TOTAL NRC LICENSE TERMINATION COST IS 84.52% OR:	$482,869	thousands of 2004 dollars
SPENT FUEL MANAGEMENT COST IS 10.64% OR:	$60,782	thousands of 2004 dollars
NON-NUCLEAR DEMOLITION COST IS 4.85% OR:	$27,687	thousands of 2004 dollars
TOTAL RADWASTE VOLUME BURIED (EXCLUDING GTCC):	71,716	cubic feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	487	cubic feet
TOTAL SCRAP METAL REMOVED:	31,561	tons
TOTAL CRAFT LABOR REQUIREMENTS:	534,422	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

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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	-	-	-	-	-	-	404	121	525	525	-	-	-	-	-	-	-	-	-	-
1a.1.2	Prepare preliminary decommissioning cost	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
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	-	-	-	-	-	-	82	12	94	94	-	-	-	-	-	-	-	-	-	856
1a.1.8	Review plant dwgs & specs.	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
1a.1.9	Perform detailed rad survey									a											
1a.1.10	Estimate by-product inventory	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1a.1.11	End product description	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1a.1.12	Detailed by-product inventory	-	-	-	-	-	-	61	9	71	71	-	-	-	-	-	-	-	-	-	642
1a.1.13	Define major work sequence	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
1a.1.14	Perform SER and EA	-	-	-	-	-	-	127	19	146	146	-	-	-	-	-	-	-	-	-	1,327
1a.1.15	Perform Site-Specific Cost Study	-	-	-	-	-	-	204	31	235	235	-	-	-	-	-	-	-	-	-	2,140
Activity Specifications																					
1a.1.16.1	Prepare plant and facilities for SAFSTOR	-	-	-	-	-	-	201	30	231	231	-	-	-	-	-	-	-	-	-	2,108
1a.1.16.2	Plant systems	-	-	-	-	-	-	170	26	196	196	-	-	-	-	-	-	-	-	-	1,783
1a.1.16.3	Plant structures and buildings	-	-	-	-	-	-	128	19	147	147	-	-	-	-	-	-	-	-	-	1,335
1a.1.16.4	Waste management	-	-	-	-	-	-	82	12	94	94	-	-	-	-	-	-	-	-	-	856
1a.1.16.5	Facility and site dormancy	-	-	-	-	-	-	82	12	94	94	-	-	-	-	-	-	-	-	-	856
1a.1.16	Total	-	-	-	-	-	-	663	99	762	762	-	-	-	-	-	-	-	-	-	6,936
Detailed Work Procedures																					
1a.1.17.1	Plant systems	-	-	-	-	-	-	48	7	56	56	-	-	-	-	-	-	-	-	-	506
1a.1.17.2	Facility closeout & dormancy	-	-	-	-	-	-	49	7	56	56	-	-	-	-	-	-	-	-	-	514
1a.1.17	Total	-	-	-	-	-	-	97	15	112	112	-	-	-	-	-	-	-	-	-	1,020
1a.1.18	Procure vacuum drying system	-	-	-	-	-	-	4	1	5	5	-	-	-	-	-	-	-	-	-	43
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	-	-	-	-	-	-	1,872	341	2,213	2,213	-	-	-	-	-	-	-	-	-	15,361
Period 1a Collateral Costs																					
1a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	862	129	992	-	992	-	-	-	-	-	-	-	-	-
1a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
1a.3.3	Fixed Overhead	-	-	-	-	-	-	801	120	921	921	-	-	-	-	-	-	-	-	-	-
1a.3	Subtotal Period 1a Collateral Costs	-	-	-	-	-	-	1,664	250	1,913	922	992	-	-	-	-	-	-	-	-	-
Period 1a Period-Dependent Costs																					
1a.4.1	Insurance	-	-	-	-	-	-	875	87	962	962	-	-	-	-	-	-	-	-	-	-
1a.4.2	Property taxes	-	-	-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
1a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
1a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
1a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	404	-	-	-	-	8,103	99	-
1a.4.6	Plant energy budget	-	-	-	-	-	-	704	106	810	810	-	-	-	-	-	-	-	-	-	-
1a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-
1a.4.8	Emergency Planning Fees	-	-	-	-	-	-	125	12	137	-	137	-	-	-	-	-	-	-	-	-
1a.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	997	149	1,146	-	1,146	-	-	-	-	-	-	-	-	-
1a.4.10	ISFSI Operating Costs	-	-	-	-	-	-	37	5	42	-	42	-	-	-	-	-	-	-	-	-
1a.4.11	INPO Fees	-	-	-	-	-	-	450	45	495	495	-	-	-	-	-	-	-	-	-	-
1a.4.12	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-
1a.4.13	Security Staff Cost	-	-	-	-	-	-	1,181	177	1,358	1,358	-	-	-	-	-	-	-	-	-	58,921

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 (continued)																					
1a.4.14	Utility Staff Cost	-	-	-	-	-	-	24,097	3,615	27,712	27,712	-	-	-	-	-	-	-	-	-	436,000
1a.4	Subtotal Period 1a Period-Dependent Costs	-	582	5	6	-	42	29,361	4,411	34,407	33,082	1,325	-	-	404	-	-	-	8,103	99	496,921
1a.0	TOTAL PERIOD 1a COST	-	582	5	6	-	42	32,897	5,002	38,534	36,216	2,317	-	-	404	-	-	-	8,103	99	512,282
PERIOD 1b - SAFSTOR Limited DECON Activities																					
Period 1b Direct Decommissioning Activities																					
Decontamination of Site Buildings																					
1b.1.1.1	Containment	677	-	-	-	-	-	-	338	1,015	1,015	-	-	-	-	-	-	-	-	17,275	-
1b.1.1.2	Auxiliary	308	-	-	-	-	-	-	154	462	462	-	-	-	-	-	-	-	-	8,218	-
1b.1.1.3	Fuel Handling	268	-	-	-	-	-	-	134	402	402	-	-	-	-	-	-	-	-	6,269	-
1b.1.1.4	Miscellaneous Structures - Contaminated	7	-	-	-	-	-	-	4	11	11	-	-	-	-	-	-	-	-	196	-
1b.1.1.5	Radwaste Solidification	96	-	-	-	-	-	-	48	144	144	-	-	-	-	-	-	-	-	2,515	-
1b.1.1	Totals	1,356	-	-	-	-	-	-	678	2,035	2,035	-	-	-	-	-	-	-	-	34,474	-
1b.1	Subtotal Period 1b Activity Costs	1,356	-	-	-	-	-	-	678	2,035	2,035	-	-	-	-	-	-	-	-	34,474	-
Period 1b Additional Costs																					
1b.2.1	Seaweed Remediation & Disposal	-	66	3	678	-	1,933	-	602	3,282	3,282	-	-	-	59,300	-	-	-	1,186,000	966	-
1b.2.2	Spent Fuel Pool Isolation	-	-	-	-	-	-	5,572	836	6,406	6,406	-	-	-	-	-	-	-	-	-	-
1b.2	Subtotal Period 1b Additional Costs	-	66	3	678	-	1,933	5,572	1,438	9,690	9,690	-	-	-	59,300	-	-	-	1,186,000	966	-
Period 1b Collateral Costs																					
1b.3.1	Decon equipment	720	-	-	-	-	-	-	106	826	826	-	-	-	-	-	-	-	-	-	-
1b.3.2	Process liquid waste	104	-	38	233	-	548	-	226	1,151	1,151	-	-	-	-	715	-	-	90,127	141	-
1b.3.3	Small tool allowance	-	24	-	-	-	-	-	4	28	28	-	-	-	-	-	-	-	-	-	-
1b.3.4	Spent Fuel Capital and Transfer	-	-	-	-	-	-	224	34	257	-	257	-	-	-	-	-	-	-	-	-
1b.3.5	Florida LLRW Inspection Fee	-	-	-	-	-	-	118	12	130	130	-	-	-	-	-	-	-	-	-	-
1b.3.6	Fixed Overhead	-	-	-	-	-	-	202	30	232	232	-	-	-	-	-	-	-	-	-	-
1b.3	Subtotal Period 1b Collateral Costs	824	24	38	233	-	548	543	415	2,625	2,368	257	-	-	-	715	-	-	90,127	141	-
Period 1b Period-Dependent Costs																					
1b.4.1	Decon supplies	457	-	-	-	-	-	-	114	571	571	-	-	-	-	-	-	-	-	-	-
1b.4.2	Insurance	-	-	-	-	-	-	221	22	243	243	-	-	-	-	-	-	-	-	-	-
1b.4.3	Property taxes	-	-	-	-	-	-	126	13	139	139	-	-	-	-	-	-	-	-	-	-
1b.4.4	Health physics supplies	-	181	-	-	-	-	-	45	227	227	-	-	-	-	-	-	-	-	-	-
1b.4.5	Heavy equipment rental	-	85	-	-	-	-	-	13	98	98	-	-	-	-	-	-	-	-	-	-
1b.4.6	Disposal of DAW generated	-	-	6	6	-	48	-	14	74	74	-	-	-	468	-	-	-	9,330	114	-
1b.4.7	Plant energy budget	-	-	-	-	-	-	178	27	204	204	-	-	-	-	-	-	-	-	-	-
1b.4.8	NRC Fees	-	-	-	-	-	-	67	7	74	74	-	-	-	-	-	-	-	-	-	-
1b.4.9	Emergency Planning Fees	-	-	-	-	-	-	31	3	35	-	35	-	-	-	-	-	-	-	-	-
1b.4.10	Spent Fuel Pool O&M	-	-	-	-	-	-	251	38	289	-	289	-	-	-	-	-	-	-	-	-
1b.4.11	ISFSI Operating Costs	-	-	-	-	-	-	9	1	11	-	11	-	-	-	-	-	-	-	-	-
1b.4.12	NEI Fees	-	-	-	-	-	-	33	3	36	36	-	-	-	-	-	-	-	-	-	-
1b.4.13	Security Staff Cost	-	-	-	-	-	-	298	45	342	342	-	-	-	-	-	-	-	-	-	14,851
1b.4.14	Utility Staff Cost	-	-	-	-	-	-	6,074	911	6,985	6,985	-	-	-	-	-	-	-	-	-	110,400
1b.4	Subtotal Period 1b Period-Dependent Costs	457	266	6	6	-	48	7,287	1,255	9,327	8,993	334	-	-	468	-	-	-	9,330	114	125,251
1b.0	TOTAL PERIOD 1b COST	2,637	357	46	918	-	2,530	13,403	3,788	23,676	23,085	591	-	-	59,768	715	-	-	1,285,457	35,718	125,251
PERIOD 1c - Preparations for SAFSTOR Dormancy																					
Period 1c Direct Decommissioning Activities																					
1c.1.1	Prepare support equipment for storage	-	376	-	-	-	-	-	56	433	433	-	-	-	-	-	-	-	-	3,000	-
1c.1.2	Install containment pressure equal. lines	-	29	-	-	-	-	-	4	33	33	-	-	-	-	-	-	-	-	700	-
1c.1.3	Interim survey prior to dormancy	-	-	-	-	-	-	733	220	953	953	-	-	-	-	-	-	-	-	13,187	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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
1c.1.4	Secure building accesses									a											
1c.1.5	Prepare & submit interim report	-	-	-	-	-	-	24	4	27	27	-	-	-	-	-	-	-	-	-	250
1c.1	Subtotal Period 1c Activity Costs	-	405	-	-	-	-	757	284	1,446	1,446	-	-	-	-	-	-	-	-	16,887	250
Period 1c Collateral Costs																					
1c.3.1	Process liquid waste	124	-	45	279	-	644	-	269	1,361	1,361	-	-	-	-	855	-	-	107,755	168	-
1c.3.2	Small tool allowance	-	3	-	-	-	-	-	0	3	3	-	-	-	-	-	-	-	-	-	-
1c.3.3	Spent Fuel Capital and Transfer	-	-	-	-	-	-	224	34	257	-	257	-	-	-	-	-	-	-	-	-
1c.3.4	Florida LLRW Inspection Fee	-	-	-	-	-	-	2	0	2	2	-	-	-	-	-	-	-	-	-	-
1c.3.5	Fixed Overhead	-	-	-	-	-	-	204	31	234	234	-	-	-	-	-	-	-	-	-	-
1c.3	Subtotal Period 1c Collateral Costs	124	3	45	279	-	644	429	334	1,858	1,601	257	-	-	-	855	-	-	107,755	168	-
Period 1c Period-Dependent Costs																					
1c.4.1	Insurance	-	-	-	-	-	-	223	22	245	245	-	-	-	-	-	-	-	-	-	-
1c.4.2	Property taxes	-	-	-	-	-	-	127	13	140	140	-	-	-	-	-	-	-	-	-	-
1c.4.3	Health physics supplies	-	120	-	-	-	-	-	30	150	150	-	-	-	-	-	-	-	-	-	-
1c.4.4	Heavy equipment rental	-	86	-	-	-	-	-	13	99	99	-	-	-	-	-	-	-	-	-	-
1c.4.5	Disposal of DAW generated	-	-	1	1	-	11	-	3	16	16	-	-	-	103	-	-	-	2,085	25	-
1c.4.6	Plant energy budget	-	-	-	-	-	-	179	27	206	206	-	-	-	-	-	-	-	-	-	-
1c.4.7	NRC Fees	-	-	-	-	-	-	68	7	74	74	-	-	-	-	-	-	-	-	-	-
1c.4.8	Emergency Planning Fees	-	-	-	-	-	-	32	3	35	-	35	-	-	-	-	-	-	-	-	-
1c.4.9	Spent Fuel Pool O&M	-	-	-	-	-	-	254	38	292	-	292	-	-	-	-	-	-	-	-	-
1c.4.10	ISFSI Operating Costs	-	-	-	-	-	-	9	1	11	-	11	-	-	-	-	-	-	-	-	-
1c.4.11	NEI Fees	-	-	-	-	-	-	33	3	37	37	-	-	-	-	-	-	-	-	-	-
1c.4.12	Security Staff Cost	-	-	-	-	-	-	301	45	346	346	-	-	-	-	-	-	-	-	-	15,013
1c.4.13	Utility Staff Cost	-	-	-	-	-	-	6,140	921	7,061	7,061	-	-	-	-	-	-	-	-	-	111,600
1c.4	Subtotal Period 1c Period-Dependent Costs	-	206	1	1	-	11	7,367	1,127	8,712	8,375	338	-	-	103	-	-	-	2,085	25	126,613
1c.0	TOTAL PERIOD 1c COST	124	614	46	280	-	655	8,553	1,745	12,016	11,422	595	-	-	103	855	-	-	109,819	17,081	126,863
PERIOD 1 TOTALS		2,761	1,553	98	1,204	-	3,226	54,852	10,533	74,226	70,723	3,503	-	-	60,273	1,570	-	-	1,403,379	52,896	764,398
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	-	-	-	-	-	-	112	17	128	128	-	-	-	-	-	-	-	-	-	-
2a.1.5	Maintenance supplies	-	-	-	-	-	-	503	126	629	629	-	-	-	-	-	-	-	-	-	-
2a.1	Subtotal Period 2a Activity Costs	-	-	-	-	-	-	614	142	757	757	-	-	-	-	-	-	-	-	-	-
Period 2a Collateral Costs																					
2a.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	26,682	4,302	32,984	-	32,984	-	-	-	-	-	-	-	-	-
2a.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	3	0	3	3	-	-	-	-	-	-	-	-	-	-
2a.3.3	Fixed Overhead	-	-	-	-	-	-	640	98	738	738	-	-	-	-	-	-	-	-	-	-
2a.3	Subtotal Period 2a Collateral Costs	-	-	-	-	-	-	29,325	4,399	33,724	740	32,984	-	-	-	-	-	-	-	-	-
Period 2a Period-Dependent Costs																					
2a.4.1	Insurance	-	-	-	-	-	-	1,707	171	1,878	1,652	226	-	-	-	-	-	-	-	-	-
2a.4.2	Property taxes	-	-	-	-	-	-	1,999	200	2,199	1,388	811	-	-	-	-	-	-	-	-	-
2a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
2a.4.4	Disposal of DAW generated	-	-	21	22	-	168	-	47	258	258	-	-	-	1,617	-	-	-	32,412	397	-
2a.4.5	Plant energy budget	-	-	-	-	-	-	2,113	317	2,430	324	2,106	-	-	-	-	-	-	-	-	-
2a.4.6	NRC Fees	-	-	-	-	-	-	936	94	1,030	1,030	-	-	-	-	-	-	-	-	-	-
2a.4.7	Emergency Planning Fees	-	-	-	-	-	-	500	50	550	-	550	-	-	-	-	-	-	-	-	-
2a.4.8	Spent Fuel Pool O&M	-	-	-	-	-	-	3,986	598	4,584	-	4,584	-	-	-	-	-	-	-	-	-
2a.4.9	ISFSI Operating Costs	-	-	-	-	-	-	146	22	168	-	168	-	-	-	-	-	-	-	-	-
2a.4.10	NEI Fees	-	-	-	-	-	-	524	52	576	-	576	-	-	-	-	-	-	-	-	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 2a Period-Dependent Costs (continued)																					
2a.4.11	Security Staff Cost	-	-	-	-	-	-	1,985	295	2,280	625	1,635	-	-	-	-	-	-	-	-	98,029
2a.4.12	Utility Staff Cost	-	-	-	-	-	-	3,536	530	4,067	4,245	(179)	-	-	-	-	-	-	-	-	79,257
2a.4	Subtotal Period 2a Period-Dependent Costs	-	245	21	22	-	168	17,413	2,437	20,306	9,829	10,477	-	-	1,617	-	-	-	32,412	397	177,286
2a.0	TOTAL PERIOD 2a COST	-	245	21	22	-	168	47,352	6,978	54,787	11,325	43,461	-	-	1,617	-	-	-	32,412	397	177,286
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	-	-	-	-	-	-	425	64	488	488	-	-	-	-	-	-	-	-	-	-
2b.1.5	Maintenance supplies	-	-	-	-	-	-	1,915	479	2,393	2,393	-	-	-	-	-	-	-	-	-	-
2b.1	Subtotal Period 2b Activity Costs	-	-	-	-	-	-	2,339	542	2,882	2,882	-	-	-	-	-	-	-	-	-	-
Period 2b Collateral Costs																					
2b.3.1	Spent Fuel Capital and Transfer	-	-	-	-	-	-	1,948	292	2,241	-	2,241	-	-	-	-	-	-	-	-	-
2b.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	12	1	13	13	-	-	-	-	-	-	-	-	-	-
2b.3.3	Fixed Overhead	-	-	-	-	-	-	2,438	366	2,803	2,803	-	-	-	-	-	-	-	-	-	-
2b.3	Subtotal Period 2b Collateral Costs	-	-	-	-	-	-	4,398	659	5,057	2,816	2,241	-	-	-	-	-	-	-	-	-
Period 2b Period-Dependent Costs																					
2b.4.1	Insurance	-	-	-	-	-	-	5,900	590	6,490	6,291	199	-	-	-	-	-	-	-	-	-
2b.4.2	Property taxes	-	-	-	-	-	-	13,611	1,361	14,972	5,286	9,687	-	-	-	-	-	-	-	-	-
2b.4.3	Health physics supplies	-	934	-	-	-	-	-	234	1,168	1,168	-	-	-	-	-	-	-	-	-	-
2b.4.4	Disposal of DAW generated	-	-	79	84	-	639	-	180	984	984	-	-	-	6,159	-	-	-	123,432	1,512	-
2b.4.5	Plant energy budget	-	-	-	-	-	-	1,073	161	1,234	1,234	-	-	-	-	-	-	-	-	-	-
2b.4.6	NRC Fees	-	-	-	-	-	-	3,565	357	3,922	3,922	-	-	-	-	-	-	-	-	-	-
2b.4.7	Emergency Planning Fees	-	-	-	-	-	-	769	77	846	-	846	-	-	-	-	-	-	-	-	-
2b.4.8	ISFSI Operating Costs	-	-	-	-	-	-	557	84	640	-	640	-	-	-	-	-	-	-	-	-
2b.4.9	Security Staff Cost	-	-	-	-	-	-	3,742	561	4,303	2,380	1,923	-	-	-	-	-	-	-	-	186,816
2b.4.10	Utility Staff Cost	-	-	-	-	-	-	19,873	2,981	22,854	16,167	6,687	-	-	-	-	-	-	-	-	385,371
2b.4	Subtotal Period 2b Period-Dependent Costs	-	934	79	84	-	639	49,090	6,585	57,412	37,431	19,981	-	-	6,159	-	-	-	123,432	1,512	552,187
2b.0	TOTAL PERIOD 2b COST	-	934	79	84	-	639	55,827	7,787	65,351	43,130	22,221	-	-	6,159	-	-	-	123,432	1,512	552,187
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	-	-	-	-	-	-	908	136	1,044	1,044	-	-	-	-	-	-	-	-	-	-
2c.1.5	Maintenance supplies	-	-	-	-	-	-	4,094	1,024	5,118	5,118	-	-	-	-	-	-	-	-	-	-
2c.1	Subtotal Period 2c Activity Costs	-	-	-	-	-	-	5,002	1,160	6,162	6,162	-	-	-	-	-	-	-	-	-	-
Period 2c Collateral Costs																					
2c.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	26	3	28	28	-	-	-	-	-	-	-	-	-	-
2c.3.2	Fixed Overhead	-	-	-	-	-	-	5,212	782	5,994	5,994	-	-	-	-	-	-	-	-	-	-
2c.3	Subtotal Period 2c Collateral Costs	-	-	-	-	-	-	5,238	784	6,022	6,022	-	-	-	-	-	-	-	-	-	-
Period 2c Period-Dependent Costs																					
2c.4.1	Insurance	-	-	-	-	-	-	12,229	1,223	13,452	13,452	-	-	-	-	-	-	-	-	-	-
2c.4.2	Property taxes	-	-	-	-	-	-	10,275	1,028	11,303	11,303	-	-	-	-	-	-	-	-	-	-
2c.4.3	Health physics supplies	-	1,997	-	-	-	-	-	499	2,497	2,497	-	-	-	-	-	-	-	-	-	-
2c.4.4	Disposal of DAW generated	-	-	170	180	-	1,367	-	366	2,103	2,103	-	-	-	13,171	-	-	-	263,936	3,234	-
2c.4.5	Plant energy budget	-	-	-	-	-	-	2,294	344	2,639	2,639	-	-	-	-	-	-	-	-	-	-
2c.4.6	NRC Fees	-	-	-	-	-	-	7,623	762	8,386	8,386	-	-	-	-	-	-	-	-	-	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 2c Period-Dependent Costs (continued)																					
2c.4.7	Security Staff Cost	-	-	-	-	-	-	4,426	664	5,090	5,090	-	-	-	-	-	-	-	-	-	220,798
2c.4.8	Utility Staff Cost	-	-	-	-	-	-	30,061	4,509	34,571	34,571	-	-	-	-	-	-	-	-	-	577,466
2c.4	Subtotal Period 2c Period-Dependent Costs	-	1,997	170	180	-	1,367	66,910	9,415	80,040	80,040	-	-	-	13,171	-	-	-	263,936	3,234	798,261
2c.0	TOTAL PERIOD 2c COST	-	1,997	170	180	-	1,367	77,150	11,359	92,224	92,224	-	-	-	13,171	-	-	-	263,936	3,234	798,261
PERIOD 2 TOTALS		-	3,177	270	287		2,174	180,330	26,125	212,362	146,679	65,683	-	-	20,948	-	-	-	419,780	5,143	1,527,735
PERIOD 3a - Reactivate Site Following SAFSTOR Dormancy																					
Period 3a Direct Decommissioning Activities																					
3a.1.1	Prepare preliminary decommissioning cost	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
3a.1.2	Review plant dwgs & specs	-	-	-	-	-	-	188	28	216	216	-	-	-	-	-	-	-	-	-	1,989
3a.1.3	Perform detailed rad survey									a											
3a.1.4	End product description	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
3a.1.5	Detailed by-product inventory	-	-	-	-	-	-	53	8	61	61	-	-	-	-	-	-	-	-	-	556
3a.1.6	Define major work sequence	-	-	-	-	-	-	307	46	353	353	-	-	-	-	-	-	-	-	-	3,210
3a.1.7	Perform SER and EA	-	-	-	-	-	-	127	19	146	146	-	-	-	-	-	-	-	-	-	1,327
3a.1.8	Perform Site-Specific Cost Study	-	-	-	-	-	-	204	31	235	235	-	-	-	-	-	-	-	-	-	2,140
3a.1.9	Prepare/submit License Termination Plan	-	-	-	-	-	-	168	25	193	193	-	-	-	-	-	-	-	-	-	1,753
3a.1.10	Receive NRC approval of termination plan									a											
Activity Specifications																					
3a.1.11.1	Re-activate plant & temporary facilities	-	-	-	-	-	-	301	45	347	312	-	35	-	-	-	-	-	-	-	3,154
3a.1.11.2	Plant systems	-	-	-	-	-	-	170	26	196	176	-	20	-	-	-	-	-	-	-	1,783
3a.1.11.3	Reactor internals	-	-	-	-	-	-	290	44	334	334	-	-	-	-	-	-	-	-	-	3,039
3a.1.11.4	Reactor vessel	-	-	-	-	-	-	266	40	306	306	-	-	-	-	-	-	-	-	-	2,782
3a.1.11.5	Biological shield	-	-	-	-	-	-	20	3	24	24	-	-	-	-	-	-	-	-	-	214
3a.1.11.6	Steam generators	-	-	-	-	-	-	128	19	147	147	-	-	-	-	-	-	-	-	-	1,335
3a.1.11.7	Reinforced concrete	-	-	-	-	-	-	65	10	75	38	-	38	-	-	-	-	-	-	-	685
3a.1.11.8	Main Turbine	-	-	-	-	-	-	16	2	19	-	-	19	-	-	-	-	-	-	-	171
3a.1.11.9	Main Condensers	-	-	-	-	-	-	16	2	19	-	-	19	-	-	-	-	-	-	-	171
3a.1.11.10	Plant structures & buildings	-	-	-	-	-	-	128	19	147	73	-	73	-	-	-	-	-	-	-	1,335
3a.1.11.11	Waste management	-	-	-	-	-	-	168	28	216	216	-	-	-	-	-	-	-	-	-	1,989
3a.1.11.12	Facility & site closeout	-	-	-	-	-	-	37	6	42	21	-	21	-	-	-	-	-	-	-	385
3a.1.11	Total	-	-	-	-	-	-	1,627	244	1,871	1,647	-	224	-	-	-	-	-	-	-	17,024
Planning & Site Preparations																					
3a.1.12	Prepare dismantling sequence	-	-	-	-	-	-	98	15	113	113	-	-	-	-	-	-	-	-	-	1,027
3a.1.13	Plant prep. & temp. svces	-	-	-	-	-	-	2,419	363	2,782	2,782	-	-	-	-	-	-	-	-	-	-
3a.1.14	Design water clean-up system	-	-	-	-	-	-	57	9	66	66	-	-	-	-	-	-	-	-	-	599
3a.1.15	Rigging/Cont. Cntrl Envlps/tooling/etc.	-	-	-	-	-	-	2,048	307	2,355	2,355	-	-	-	-	-	-	-	-	-	-
3a.1.16	Procure casks/liners & containers	-	-	-	-	-	-	50	8	58	58	-	-	-	-	-	-	-	-	-	526
3a.1	Subtotal Period 3a Activity Costs	-	-	-	-	-	-	7,440	1,116	8,556	8,332	-	224	-	-	-	-	-	-	-	31,117
Period 3a Collateral Costs																					
3a.3.1	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
3a.3.2	Fixed Overhead	-	-	-	-	-	-	800	120	920	920	-	-	-	-	-	-	-	-	-	-
3a.3	Subtotal Period 3a Collateral Costs	-	-	-	-	-	-	801	120	921	921	-	-	-	-	-	-	-	-	-	-
Period 3a Period-Dependent Costs																					
3a.4.1	Insurance	-	-	-	-	-	-	375	38	413	413	-	-	-	-	-	-	-	-	-	-
3a.4.2	Property taxes	-	-	-	-	-	-	500	50	550	550	-	-	-	-	-	-	-	-	-	-
3a.4.3	Health physics supplies	-	245	-	-	-	-	-	61	307	307	-	-	-	-	-	-	-	-	-	-
3a.4.4	Heavy equipment rental	-	337	-	-	-	-	-	51	388	388	-	-	-	-	-	-	-	-	-	-
3a.4.5	Disposal of DAW generated	-	-	5	6	-	42	-	12	65	65	-	-	-	404	-	-	-	8,103	99	-
3a.4.6	Plant energy budget	-	-	-	-	-	-	528	79	606	606	-	-	-	-	-	-	-	-	-	-
3a.4.7	NRC Fees	-	-	-	-	-	-	265	27	292	292	-	-	-	-	-	-	-	-	-	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 3a Period-Dependent Costs (continued)																					
3a.4.8	NEI Fees	-	-	-	-	-	-	131	13	144	144	-	-	-	-	-	-	-	-	-	-
3a.4.9	Security Staff Cost	-	-	-	-	-	-	324	49	373	373	-	-	-	-	-	-	-	-	-	16,164
3a.4.10	Utility Staff Cost	-	-	-	-	-	-	13,224	1,984	15,207	15,207	-	-	-	-	-	-	-	-	-	239,336
3a.4	Subtotal Period 3a Period-Dependent Costs	-	582	5	6	-	42	15,347	2,362	18,345	18,345	-	-	-	404	-	-	-	8,103	99	255,500
3a.0	TOTAL PERIOD 3a COST	-	582	5	6	-	42	23,588	3,596	27,822	27,596	-	224	-	404	-	-	-	8,103	99	286,617
PERIOD 3b - Decommissioning Preparations																					
Period 3b Direct Decommissioning Activities																					
Detailed Work Procedures																					
3b.1.1.1	Plant systems	-	-	-	-	-	-	194	29	223	200	-	22	-	-	-	-	-	-	-	2,026
3b.1.1.2	Reactor internals	-	-	-	-	-	-	102	15	118	116	-	-	-	-	-	-	-	-	-	1,070
3b.1.1.3	Remaining buildings	-	-	-	-	-	-	55	8	63	16	-	48	-	-	-	-	-	-	-	576
3b.1.1.4	CRD cooling assembly	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
3b.1.1.5	CRD housings & ICI tubes	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
3b.1.1.6	Incore instrumentation	-	-	-	-	-	-	41	6	47	47	-	-	-	-	-	-	-	-	-	428
3b.1.1.7	Reactor vessel	-	-	-	-	-	-	148	22	171	171	-	-	-	-	-	-	-	-	-	1,554
3b.1.1.8	Facility closeout	-	-	-	-	-	-	49	7	56	28	-	28	-	-	-	-	-	-	-	514
3b.1.1.9	Missile shields	-	-	-	-	-	-	18	3	21	21	-	-	-	-	-	-	-	-	-	193
3b.1.1.10	Biological shield	-	-	-	-	-	-	49	7	56	56	-	-	-	-	-	-	-	-	-	514
3b.1.1.11	Steam generators	-	-	-	-	-	-	168	26	216	216	-	-	-	-	-	-	-	-	-	1,969
3b.1.1.12	Reinforced concrete	-	-	-	-	-	-	41	6	47	24	-	24	-	-	-	-	-	-	-	428
3b.1.1.13	Main Turbine	-	-	-	-	-	-	64	10	73	-	-	73	-	-	-	-	-	-	-	668
3b.1.1.14	Main Condensers	-	-	-	-	-	-	64	10	73	-	-	73	-	-	-	-	-	-	-	668
3b.1.1.15	Auxiliary building	-	-	-	-	-	-	112	17	128	116	-	13	-	-	-	-	-	-	-	1,168
3b.1.1.16	Reactor building	-	-	-	-	-	-	112	17	128	116	-	13	-	-	-	-	-	-	-	1,168
3b.1.1	Total	-	-	-	-	-	-	1,319	198	1,517	1,222	-	294	-	-	-	-	-	-	-	13,800
3b.1	Subtotal Period 3b Activity Costs	-	-	-	-	-	-	1,319	198	1,517	1,222	-	294	-	-	-	-	-	-	-	13,800
Period 3b Additional Costs																					
3b.2.1	Asbestos removal program	-	361	0	71	-	80	-	121	633	633	-	-	-	5,894	-	-	-	48,806	6,508	-
3b.2.2	Site Characterization Survey	-	-	-	-	-	-	852	256	1,108	1,108	-	-	-	-	-	-	-	-	-	-
3b.2.3	Mixed/Hazwaste Waste	-	-	648	280	7,237	-	-	1,192	9,357	9,357	-	-	44,914	-	-	-	-	2,348,764	9,449	-
3b.2	Subtotal Period 3b Additional Costs	-	361	648	351	7,237	80	852	1,569	11,099	11,099	-	-	44,914	5,894	-	-	-	2,397,570	15,957	-
Period 3b Collateral Costs																					
3b.3.1	Decon equipment	720	-	-	-	-	-	-	108	828	828	-	-	-	-	-	-	-	-	-	-
3b.3.2	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
3b.3.3	Small tool allowance	-	5	-	-	-	-	-	1	6	6	-	-	-	-	-	-	-	-	-	-
3b.3.4	Pipe cutting equipment	-	957	-	-	-	-	-	143	1,100	1,100	-	-	-	-	-	-	-	-	-	-
3b.3.5	Florida LLRW Inspection Fee	-	-	-	-	-	-	99	10	109	109	-	-	-	-	-	-	-	-	-	-
3b.3.6	Fixed Overhead	-	-	-	-	-	-	406	61	466	466	-	-	-	-	-	-	-	-	-	-
3b.3	Subtotal Period 3b Collateral Costs	720	961	-	-	-	-	1,794	516	3,992	3,992	-	-	-	-	-	-	-	-	-	-
Period 3b Period-Dependent Costs																					
3b.4.1	Decon supplies	22	-	-	-	-	-	-	5	27	27	-	-	-	-	-	-	-	-	-	-
3b.4.2	Insurance	-	-	-	-	-	-	216	22	238	238	-	-	-	-	-	-	-	-	-	-
3b.4.3	Property taxes	-	-	-	-	-	-	253	25	279	279	-	-	-	-	-	-	-	-	-	-
3b.4.4	Health physics supplies	-	178	-	-	-	-	-	44	222	222	-	-	-	-	-	-	-	-	-	-
3b.4.5	Heavy equipment rental	-	171	-	-	-	-	-	26	197	197	-	-	-	-	-	-	-	-	-	-
3b.4.6	Disposal of DAW generated	-	-	3	3	-	21	-	6	33	33	-	-	-	205	-	-	-	4,107	50	-
3b.4.7	Plant energy budget	-	-	-	-	-	-	268	40	308	308	-	-	-	-	-	-	-	-	-	-
3b.4.8	NRC Fees	-	-	-	-	-	-	134	13	148	148	-	-	-	-	-	-	-	-	-	-
3b.4.9	NEI Fees	-	-	-	-	-	-	66	7	73	73	-	-	-	-	-	-	-	-	-	-
3b.4.10	Security Staff Cost	-	-	-	-	-	-	164	25	189	189	-	-	-	-	-	-	-	-	-	8,193
3b.4.11	DOC Staff Cost	-	-	-	-	-	-	2,944	442	3,385	3,385	-	-	-	-	-	-	-	-	-	47,571

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 3b Period-Dependent Costs (continued)																					
3b.4.12	Utility Staff Cost	-	-	-	-	-	-	7,005	1,051	8,055	8,055	-	-	-	-	-	-	-	-	-	126,593
3b.4	Subtotal Period 3b Period-Dependent Costs	22	349	3	3	-	21	11,051	1,708	13,154	13,154	-	-	-	205	-	-	-	4,107	50	182,357
3b.0	TOTAL PERIOD 3b COST	742	1,671	651	354	7,237	101	15,016	3,989	29,760	29,466	-	294	44,914	6,099	-	-	-	2,401,677	16,007	196,157
PERIOD 3 TOTALS		742	2,254	656	359	7,237	143	38,604	7,587	57,582	57,064	-	518	44,914	6,503	-	-	-	2,409,780	16,107	482,774
PERIOD 4a - Large Component Removal																					
Period 4a Direct Decommissioning Activities																					
Nuclear Steam Supply System Removal																					
4a.1.1.1	Reactor Coolant Piping	9	32	4	7	56	76	-	41	224	224	-	-	200	200	-	-	-	46,454	1,055	-
4a.1.1.2	Pressurizer Relief Tank	4	15	3	5	37	46	-	24	132	132	-	-	133	133	-	-	-	29,424	480	-
4a.1.1.3	Reactor Coolant Pumps & Motors	7	45	28	228	849	924	-	410	2,491	2,491	-	-	1,366	1,182	-	-	-	633,930	1,637	-
4a.1.1.4	Pressurizer	5	41	421	481	-	479	-	247	1,674	1,674	-	-	-	1,793	-	-	-	197,230	1,774	-
4a.1.1.5	Steam Generators	24	2,182	1,725	2,758	1,931	2,625	-	2,085	13,309	13,309	-	-	10,619	9,831	-	-	-	2,166,271	18,688	-
4a.1.1.6	Retired Steam Generator Units	-	-	-	4,793	-	4,942	-	1,954	11,689	11,689	-	-	-	19,662	-	-	-	2,788,023	-	-
4a.1.1.7	CRDMs/ICIs/Service Structure Removal	21	68	85	44	70	146	-	89	522	522	-	-	753	2,540	-	-	-	74,268	2,141	-
4a.1.1.8	Reactor Vessel Internals	50	1,582	3,235	888	-	3,898	139	4,212	14,003	14,003	-	-	-	897	376	986	-	223,668	17,579	835
4a.1.1.9	Vessel & Internals GTCC Disposal	-	-	45	-	-	9,040	-	1,361	10,448	10,448	-	-	-	-	-	-	487	100,132	-	-
4a.1.1.10	Reactor Vessel	-	3,291	778	341	-	4,124	139	4,831	13,505	13,505	-	-	-	5,433	2,383	-	-	796,882	17,579	835
4a.1.1	Totals	119	7,237	6,323	9,544	2,942	26,300	278	15,254	67,997	67,997	-	-	13,271	41,471	2,758	986	487	7,056,280	60,933	1,670
Removal of Major Equipment																					
4a.1.2	Main Turbine/Generator	-	200	74	28	600	-	-	152	1,055	1,055	-	-	2,825	-	-	-	-	240,125	5,183	-
4a.1.3	Main Condensers	-	686	46	24	518	-	-	258	1,533	1,533	-	-	4,606	-	-	-	-	207,273	18,250	-
Cascading Costs from Clean Building Demolition																					
4a.1.4.1	Containment	-	547	-	-	-	-	-	82	629	629	-	-	-	-	-	-	-	-	8,302	-
4a.1.4.2	Auxiliary	-	104	-	-	-	-	-	16	119	119	-	-	-	-	-	-	-	-	1,985	-
4a.1.4.3	Fuel Handling	-	43	-	-	-	-	-	6	49	49	-	-	-	-	-	-	-	-	708	-
4a.1.4.4	Miscellaneous Structures - Contaminated	-	4	-	-	-	-	-	1	4	4	-	-	-	-	-	-	-	-	76	-
4a.1.4.5	Radwaste Solidification	-	65	-	-	-	-	-	10	74	74	-	-	-	-	-	-	-	-	1,106	-
4a.1.4	Totals	-	762	-	-	-	-	-	114	877	877	-	-	-	-	-	-	-	-	12,176	-
Disposal of Plant Systems																					
4a.1.5.1	Amertap	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,847	-
4a.1.5.2	Auxiliary Feedwater	-	12	-	-	-	-	-	2	14	-	-	14	-	-	-	-	-	-	352	-
4a.1.5.3	Auxiliary Feedwater - Insulated	-	21	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	623	-
4a.1.5.4	Auxiliary Feedwater - Insulated - RCA	-	126	1	5	111	-	-	49	292	292	-	-	1,095	-	-	-	-	44,472	3,136	-
4a.1.5.5	Auxiliary Feedwater - RCA	-	26	0	1	25	-	-	10	63	63	-	-	244	-	-	-	-	9,925	639	-
4a.1.5.6	Auxiliary Steam	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	34	-
4a.1.5.7	Auxiliary Steam - Insulated	-	34	-	-	-	-	-	5	39	-	-	39	-	-	-	-	-	-	1,031	-
4a.1.5.8	Auxiliary Steam - Insulated - RCA	-	7	-	0	8	-	-	3	18	18	-	-	79	-	-	-	-	3,221	167	-
4a.1.5.9	Auxiliary Steam - RCA	-	0	-	-	0	-	-	-	0	0	-	-	1	-	-	-	-	59	4	-
4a.1.5.10	Breathing Air - Insulated - RCA	-	3	-	0	2	-	-	1	7	7	-	-	24	-	-	-	-	961	86	-
4a.1.5.11	Breathing Air - RCA	-	52	1	3	75	-	-	25	156	156	-	-	736	-	-	-	-	29,977	1,302	-
4a.1.5.12	Chemical & Volume Control	-	358	23	60	609	578	-	337	1,964	1,964	-	-	5,999	1,534	-	-	-	349,990	9,186	-
4a.1.5.13	Chemical & Volume Control - Insulated	-	313	10	25	58	407	-	193	1,003	1,003	-	-	550	835	-	-	-	97,197	7,823	-
4a.1.5.14	Circulating Water	-	90	-	-	-	-	-	13	103	-	-	103	-	-	-	-	-	-	2,697	-
4a.1.5.15	Component Cooling Water	-	158	-	-	-	-	-	24	181	-	-	181	-	-	-	-	-	-	4,791	-
4a.1.5.16	Component Cooling Water - RCA	-	359	8	39	838	-	-	222	1,463	1,463	-	-	8,229	-	-	-	-	334,203	8,934	-
4a.1.5.17	Condensate	-	159	-	-	-	-	-	24	183	-	-	183	-	-	-	-	-	-	4,701	-
4a.1.5.18	Condensate - Insulated	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,892	-
4a.1.5.19	Condensate Polishing	-	27	-	-	-	-	-	4	31	-	-	31	-	-	-	-	-	-	784	-
4a.1.5.20	Condensate Polishing - Ins	-	81	-	-	-	-	-	12	93	-	-	93	-	-	-	-	-	-	2,448	-
4a.1.5.21	Condensate Recovery	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	554	-
4a.1.5.22	Condensate Recovery - Insulated	-	3	-	-	-	-	-	0	4	-	-	4	-	-	-	-	-	-	99	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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.1.5.23	Condensate Recovery - Insulated - RCA	-	6	-	0	4	-	-	2	13	13	-	-	43	-	-	-	-	1,728	148	-
4a.1.5.24	Condensate Recovery - RCA	-	21	0	1	17	-	-	8	48	48	-	-	166	-	-	-	-	6,731	499	-
4a.1.5.25	Condensate Storage	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,651	-
4a.1.5.26	Condenser	-	21	-	-	-	-	-	3	24	-	-	24	-	-	-	-	-	-	636	-
4a.1.5.27	Containment Post Accident Eval	-	11	-	0	8	-	-	4	24	24	-	-	78	-	-	-	-	3,171	284	-
4a.1.5.28	Containment Post Accident Eval - Ins	-	16	0	1	12	-	-	6	35	35	-	-	121	-	-	-	-	4,898	385	-
4a.1.5.29	Containment Purge	-	35	1	5	99	-	-	24	164	164	-	-	972	-	-	-	-	39,455	884	-
4a.1.5.30	Electrical - Clean	-	1,648	-	-	-	-	-	247	1,895	-	-	1,895	-	-	-	-	-	-	47,559	-
4a.1.5.31	Extraction Steam	-	10	-	-	-	-	-	2	12	-	-	12	-	-	-	-	-	-	317	-
4a.1.5.32	Extraction Steam - Insulated	-	62	-	-	-	-	-	9	71	-	-	71	-	-	-	-	-	-	1,908	-
4a.1.5.33	Feedwater	-	111	-	-	-	-	-	17	127	-	-	127	-	-	-	-	-	-	3,134	-
4a.1.5.34	Feedwater - Insulated	-	185	-	-	-	-	-	26	212	-	-	212	-	-	-	-	-	-	5,619	-
4a.1.5.35	Feedwater - Insulated - RCA	-	79	1	7	148	-	-	43	276	276	-	-	1,437	-	-	-	-	56,357	1,978	-
4a.1.5.36	Feedwater - RCA	-	7	0	1	14	-	-	4	27	27	-	-	143	-	-	-	-	5,790	186	-
4a.1.5.37	Feedwater Heater Drains & Vents	-	40	-	-	-	-	-	6	46	-	-	46	-	-	-	-	-	-	1,202	-
4a.1.5.38	Feedwater Heater Drains & Vents - Ins	-	297	-	-	-	-	-	45	342	-	-	342	-	-	-	-	-	-	9,047	-
4a.1.5.39	Generator	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	126	-
4a.1.5.40	Generator - Insulated	-	1	-	-	-	-	-	0	2	-	-	2	-	-	-	-	-	-	47	-
4a.1.5.41	HVAC - Clean	-	127	-	-	-	-	-	19	145	-	-	145	-	-	-	-	-	-	4,217	-
4a.1.5.42	Instrument Air	-	17	-	-	-	-	-	2	19	-	-	19	-	-	-	-	-	-	501	-
4a.1.5.43	Instrument Air - Insulated	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	445	-
4a.1.5.44	Intake Cooling Water	-	163	-	-	-	-	-	24	188	-	-	188	-	-	-	-	-	-	4,984	-
4a.1.5.45	Main Steam - Insulated	-	158	-	-	-	-	-	24	182	-	-	182	-	-	-	-	-	-	4,732	-
4a.1.5.46	Main Steam - Insulated - RCA	-	43	1	4	95	-	-	26	169	169	-	-	934	-	-	-	-	37,923	1,085	-
4a.1.5.47	Nitrogen & Hydrogen	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	27	-
4a.1.5.48	Nitrogen & Hydrogen - RCA	-	1	-	-	1	-	-	0	3	3	-	-	19	-	-	-	-	398	25	-
4a.1.5.49	Safety Injection	-	160	4	18	392	-	-	102	676	676	-	-	3,857	-	-	-	-	156,645	4,094	-
4a.1.5.50	Safety Injection - Insulated	-	107	2	8	163	-	-	53	333	333	-	-	1,610	-	-	-	-	65,368	2,884	-
4a.1.5.51	Sample - NSSS	-	36	0	1	16	-	-	12	67	67	-	-	153	-	-	-	-	6,224	1,027	-
4a.1.5.52	Sample - NSSS - Ins	-	48	-	0	9	-	-	14	72	72	-	-	93	-	-	-	-	3,762	1,303	-
4a.1.5.53	Screen Wash	-	26	-	-	-	-	-	4	30	-	-	30	-	-	-	-	-	-	757	-
4a.1.5.54	Secondary Sample	-	3	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	87	-
4a.1.5.55	Secondary Sample - RCA	-	3	-	-	2	-	-	1	6	6	-	-	19	-	-	-	-	760	85	-
4a.1.5.56	Secondary Wet Layup	-	18	-	-	-	-	-	3	21	-	-	21	-	-	-	-	-	-	543	-
4a.1.5.57	Secondary Wet Layup - RCA	-	14	0	1	16	-	-	6	37	37	-	-	155	-	-	-	-	6,280	342	-
4a.1.5.58	Turbine Building HVAC	-	14	-	-	-	-	-	2	16	-	-	16	-	-	-	-	-	-	433	-
4a.1.5.59	Turbine Lube Oil	-	41	-	-	-	-	-	6	47	-	-	47	-	-	-	-	-	-	1,197	-
4a.1.5.60	Turbine Plant Chemical Addition	-	4	-	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-	112	-
4a.1.5.61	Turbine Plant Cooling Water	-	80	-	-	-	-	-	12	92	-	-	92	-	-	-	-	-	-	2,416	-
4a.1.5.62	Turbine Plant Cooling Water - Insulated	-	47	-	-	-	-	-	7	54	-	-	54	-	-	-	-	-	-	1,440	-
4a.1.5.63	Turbine Steam	-	71	-	-	-	-	-	11	82	-	-	82	-	-	-	-	-	-	2,165	-
4a.1.5.64	Turbine Steam - Insulated	-	33	-	-	-	-	-	5	38	-	-	38	-	-	-	-	-	-	1,009	-
4a.1.5	Totals	-	5,815	53	180	2,716	984	-	1,741	11,489	6,912	-	4,577	26,748	2,368	-	-	-	1,267,493	164,388	-
4a.1.6	Scaffolding in support of decommissioning	-	317	4	3	46	3	-	88	461	461	-	-	407	20	-	-	-	20,342	9,254	-
4a.1	Subtotal Period 4a Activity Costs	119	15,017	6,501	9,780	6,822	27,267	278	17,807	83,411	78,834	-	4,577	47,857	43,880	2,758	966	487	8,791,513	270,185	1,670
Period 4a Collateral Costs																					
4a.3.1	Process liquid waste	3	-	3	18	-	98	-	29	149	149	-	-	-	-	55	-	-	6,940	11	-
4a.3.2	Small tool allowance	-	177	-	-	-	-	-	27	204	183	-	20	-	-	-	-	-	-	-	-
4a.3.3	Florida LLRW Inspection Fee	-	-	-	-	-	-	192	19	211	211	-	-	-	-	-	-	-	-	-	-
4a.3.4	Fixed Overhead	-	-	-	-	-	-	881	132	1,013	1,013	-	-	-	-	-	-	-	-	-	-
4a.3	Subtotal Period 4a Collateral Costs	3	177	3	18	-	98	1,073	207	1,577	1,557	-	20	-	-	55	-	-	6,940	11	-
Period 4a Period-Dependent Costs																					
4a.4.1	Decon supplies	47	-	-	-	-	-	-	12	59	59	-	-	-	-	-	-	-	-	-	-
4a.4.2	Insurance	-	-	-	-	-	-	470	47	517	517	-	-	-	-	-	-	-	-	-	-
4a.4.3	Property taxes	-	-	-	-	-	-	550	55	605	545	-	61	-	-	-	-	-	-	-	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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.4.4	Health physics supplies	-	1,178	-	-	-	-	-	295	1,473	1,473	-	-	-	-	-	-	-	-	-	-
4a.4.5	Heavy equipment rental	-	1,910	-	-	-	-	-	287	2,197	2,197	-	-	-	-	-	-	-	-	-	-
4a.4.6	Disposal of DAW generated	-	-	38	41	-	309	-	87	475	475	-	-	-	2,972	-	-	-	59,563	730	-
4a.4.7	Plant energy budget	-	-	-	-	-	-	737	111	848	848	-	-	-	-	-	-	-	-	-	-
4a.4.8	NRC Fees	-	-	-	-	-	-	361	36	397	397	-	-	-	-	-	-	-	-	-	-
4a.4.9	Radwaste Processing Equipment/Services	-	-	-	-	-	-	396	59	456	456	-	-	-	-	-	-	-	-	-	-
4a.4.10	NEI Fees	-	-	-	-	-	-	144	14	159	159	-	-	-	-	-	-	-	-	-	-
4a.4.11	Security Staff Cost	-	-	-	-	-	-	936	140	1,077	1,077	-	-	-	-	-	-	-	-	-	46,701
4a.4.12	DOC Staff Cost	-	-	-	-	-	-	11,218	1,683	12,901	12,901	-	-	-	-	-	-	-	-	-	174,583
4a.4.13	Utility Staff Cost	-	-	-	-	-	-	15,919	2,388	18,307	18,307	-	-	-	-	-	-	-	-	-	293,253
4a.4	Subtotal Period 4a Period-Dependent Costs	47	3,088	38	41	-	309	30,732	5,213	39,468	39,468	-	61	-	2,972	-	-	-	59,563	730	514,537
4a.0	TOTAL PERIOD 4a COST	169	18,283	6,543	9,838	6,822	27,692	32,083	23,028	124,456	119,796	-	4,658	47,857	46,832	2,813	988	487	8,858,016	270,925	516,207
PERIOD 4b - Site Decontamination																					
Period 4b Direct Decommissioning Activities																					
4b.1.1	Remove spent fuel racks	302	34	73	63	-	343	-	262	1,077	1,077	-	-	-	2,106	-	-	-	210,800	1,023	-
Disposal of Plant Systems																					
4b.1.2.1	Auxiliary Bldg HVAC	-	191	3	16	354	-		104	668	668	-	-	3,485	-	-	-	-	141,520	4,169	-
4b.1.2.2	Containment Emergency Filter	-	4	-	0	5	-		2	11	11	-	-	47	-	-	-	-	1,929	99	-
4b.1.2.3	Containment Normal & Emerg Cooling	-	443	7	35	761	-	-	231	1,478	1,478	-	-	7,494	-	-	-	-	304,319	9,402	-
4b.1.2.4	Containment Normal & Emerg Cooling - Ins	-	4	-	0	4	-	-	2	10	10	-	-	37	-	-	-	-	1,521	95	-
4b.1.2.5	Containment Spray	-	54	1	4	84	-	-	27	169	169	-	-	827	-	-	-	-	33,587	1,325	-
4b.1.2.6	Containment Spray - Insulated	-	43	0	2	47	-	-	16	111	111	-	-	467	-	-	-	-	18,968	1,024	-
4b.1.2.7	Control Building HVAC	-	20	-	-	-	-	-	3	23	-	-	23	-	-	-	-	-	-	619	-
4b.1.2.8	EDG Building HVAC	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	74	-
4b.1.2.9	Electrical - Contaminated	-	240	2	11	242	-	-	98	594	594	-	-	2,388	-	-	-	-	96,905	6,013	-
4b.1.2.10	Electrical - Decontaminated	-	2,148	21	101	2,157	-	-	878	5,303	5,303	-	-	21,242	-	-	-	-	862,854	53,761	-
4b.1.2.11	Emergency Diesel Engine & Oil	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,676	-
4b.1.2.12	Emergency Diesel Engine & Oil - Ins	-	2	-	-	-	-	-	0	3	-	-	3	-	-	-	-	-	-	77	-
4b.1.2.13	Fire Protection	-	269	-	-	-	-	-	40	309	-	-	309	-	-	-	-	-	-	7,798	-
4b.1.2.14	Fire Protection - RCA	-	716	12	57	1,229	-	-	373	2,387	2,387	-	-	12,105	-	-	-	-	491,604	17,648	-
4b.1.2.15	Fuel Handling HVAC	-	42	1	3	71	-	-	22	138	138	-	-	897	-	-	-	-	26,296	906	-
4b.1.2.16	HVAC - Contaminated	-	40	1	3	67	-	-	21	131	131	-	-	859	-	-	-	-	26,782	832	-
4b.1.2.17	Instrument Air - Insulated - RCA	-	81	0	2	45	-	-	27	156	156	-	-	439	-	-	-	-	17,845	2,088	-
4b.1.2.18	Instrument Air - RCA	-	50	0	1	29	-	-	17	98	98	-	-	288	-	-	-	-	11,715	1,261	-
4b.1.2.19	Miscellaneous - RCA	-	5	0	1	21	-	-	5	32	32	-	-	206	-	-	-	-	8,368	127	-
4b.1.2.20	Primary Water Makeup	-	57	-	-	-	-	-	9	66	-	-	66	-	-	-	-	-	-	1,668	-
4b.1.2.21	Radwaste Building HVAC	-	89	1	7	145	-	-	45	287	287	-	-	1,426	-	-	-	-	58,000	1,891	-
4b.1.2.22	Reactor Coolant - Insulated	-	54	2	4	11	68	-	33	172	172	-	-	112	139	-	-	-	17,037	1,362	-
4b.1.2.23	Refueling Equipment	-	125	4	14	136	130	-	87	496	496	-	-	1,362	267	-	-	-	79,290	3,221	-
4b.1.2.24	Residual Heat Removal	-	62	23	60	251	879	-	264	1,560	1,560	-	-	2,476	1,805	-	-	-	262,436	1,699	-
4b.1.2.25	Residual Heat Removal - Insulated	-	224	14	38	199	522	-	224	1,221	1,221	-	-	1,961	1,073	-	-	-	175,833	5,704	-
4b.1.2.26	Safety Injection Accumulator	-	185	4	19	397	-	-	109	713	713	-	-	3,914	-	-	-	-	158,930	4,615	-
4b.1.2.27	Service Water	-	15	-	-	-	-	-	2	18	-	-	18	-	-	-	-	-	-	487	-
4b.1.2.28	Service Water - Insulated	-	6	-	-	-	-	-	1	7	-	-	7	-	-	-	-	-	-	204	-
4b.1.2.29	Service Water - Insulated - RCA	-	50	0	2	43	-	-	19	115	115	-	-	422	-	-	-	-	17,124	1,193	-
4b.1.2.30	Service Water - RCA	-	110	1	5	96	-	-	43	256	256	-	-	985	-	-	-	-	39,195	2,587	-
4b.1.2.31	Spent Fuel Pool Cooling	-	79	5	12	45	184	-	75	400	400	-	-	448	380	-	-	-	52,024	1,979	-
4b.1.2.32	Spent Fuel Pool Cooling - Insulated	-	39	2	5	17	77	-	33	172	172	-	-	164	158	-	-	-	20,838	975	-
4b.1.2.33	Steam Generator Wet Layup	-	1	-	-	-	-	-	0	1	-	-	1	-	-	-	-	-	-	25	-
4b.1.2.34	Steam Generator Wet Layup - RCA	-	1	-	-	1	-	-	0	3	3	-	-	10	-	-	-	-	396	25	-
4b.1.2.35	Waste Disposal	-	290	16	41	351	456	-	247	1,401	1,401	-	-	3,456	1,115	-	-	-	224,285	7,297	-
4b.1.2.36	Waste Disposal - Insulated	-	326	14	31	59	524	-	228	1,182	1,182	-	-	581	1,077	-	-	-	120,160	7,960	-
4b.1.2.37	Water Treatment Plant	-	104	-	-	-	-	-	16	119	-	-	119	-	-	-	-	-	-	3,085	-
4b.1.2.38	Water Treatment Plant - Insulated	-	77	-	-	-	-	-	12	89	-	-	89	-	-	-	-	-	-	2,338	-
4b.1.2	Totals	-	6,308	136	476	6,871	2,841	-	3,341	19,971	19,267	-	704	67,678	6,015	-	-	-	3,271,561	157,275	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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.	CraR Manhours	Utility and Contractor Manhours
4b.1.3	Scaffolding in support of decommissioning	-	476	6	4	69	5	-	132	692	692	-	-	610	31	-	-	-	30,513	13,882	-
Decontamination of Site Buildings																					
4b.1.4.1	Containment	614	551	84	104	255	101	-	532	2,241	2,241	-	-	9,962	623	-	-	-	723,091	28,297	-
4b.1.4.2	Auxiliary	285	94	9	31	124	130	-	223	897	897	-	-	1,224	798	-	-	-	129,548	9,420	-
4b.1.4.3	Fuel Handling	242	273	2	9	140	17	-	216	899	899	-	-	1,375	108	-	-	-	68,395	12,632	-
4b.1.4.4	Miscellaneous Structures - Contaminated	7	2	0	1	0	4	-	5	20	20	-	-	2	27	-	-	-	2,806	213	-
4b.1.4.5	Radwaste Solidification	89	35	3	10	19	45	-	69	270	270	-	-	190	274	-	-	-	35,145	3,072	-
4b.1.4	Totals	1,237	954	99	155	538	298	-	1,045	4,326	4,326	-	-	12,753	1,828	-	-	-	956,985	53,634	-
4b.1	Subtotal Period 4b Activity Costs	1,539	7,770	315	698	7,478	3,487	-	4,780	26,085	25,362	-	704	81,042	9,960	-	-	-	4,469,660	225,814	-
Period 4b Additional Costs																					
4b.2.1	Curie Surcharge (excluding RPV)	-	-	-	-	-	87	-	22	108	108	-	-	-	-	-	-	-	-	-	-
4b.2.2	ISFSI License Termination	-	198	4	44	-	303	705	238	1,491	-	1,491	-	-	1,633	-	-	-	165,471	3,780	1,260
4b.2	Subtotal Period 4b Additional Costs	-	198	4	44	-	389	705	260	1,600	108	1,491	-	-	1,633	-	-	-	165,471	3,780	1,260
Period 4b Collateral Costs																					
4b.3.1	Process liquid waste	7	-	7	43	-	151	-	48	256	256	-	-	-	-	134	-	-	16,910	26	-
4b.3.2	Small tool allowance	-	155	-	-	-	-	-	23	179	179	-	-	-	-	-	-	-	-	-	-
4b.3.3	Florida LLRW Inspection Fee	-	-	-	-	-	-	189	19	208	208	-	-	-	-	-	-	-	-	-	-
4b.3.4	Fixed Overhead	-	-	-	-	-	-	2,113	317	2,430	2,430	-	-	-	-	-	-	-	-	-	-
4b.3	Subtotal Period 4b Collateral Costs	7	155	7	43	-	151	2,303	408	3,074	3,074	-	-	-	-	134	-	-	16,910	26	-
Period 4b Period-Dependent Costs																					
4b.4.1	Decon supplies	559	-	-	-	-	-	-	140	699	699	-	-	-	-	-	-	-	-	-	-
4b.4.2	Insurance	-	-	-	-	-	-	1,127	113	1,240	1,240	-	-	-	-	-	-	-	-	-	-
4b.4.3	Property taxes	-	-	-	-	-	-	1,320	132	1,452	1,452	-	-	-	-	-	-	-	-	-	-
4b.4.4	Health physics supplies	-	1,419	-	-	-	-	-	355	1,774	1,774	-	-	-	-	-	-	-	-	-	-
4b.4.5	Heavy equipment rental	-	4,609	-	-	-	-	-	691	5,300	5,300	-	-	-	-	-	-	-	-	-	-
4b.4.6	Disposal of DAW generated	-	-	56	60	-	454	-	128	698	698	-	-	-	4,371	-	-	-	87,583	1,073	-
4b.4.7	Plant energy budget	-	-	-	-	-	-	1,395	209	1,605	1,605	-	-	-	-	-	-	-	-	-	-
4b.4.8	NRC Fees	-	-	-	-	-	-	865	87	952	952	-	-	-	-	-	-	-	-	-	-
4b.4.9	Radwaste Processing Equipment/Services	-	-	-	-	-	-	950	143	1,093	1,093	-	-	-	-	-	-	-	-	-	-
4b.4.10	NEI Fees	-	-	-	-	-	-	348	35	380	380	-	-	-	-	-	-	-	-	-	-
4b.4.11	Security Staff Cost	-	-	-	-	-	-	2,540	381	2,921	2,921	-	-	-	-	-	-	-	-	-	126,697
4b.4.12	DOC Staff Cost	-	-	-	-	-	-	25,862	3,879	29,742	29,742	-	-	-	-	-	-	-	-	-	402,126
4b.4.13	Utility Staff Cost	-	-	-	-	-	-	37,905	5,686	43,591	43,591	-	-	-	-	-	-	-	-	-	648,634
4b.4	Subtotal Period 4b Period-Dependent Costs	559	6,028	56	60	-	454	72,310	11,978	91,445	91,445	-	-	-	4,371	-	-	-	87,583	1,073	1,177,457
4b.0	TOTAL PERIOD 4b COST	2,105	14,151	382	845	7,478	4,480	75,318	17,425	122,184	119,989	1,491	704	81,042	15,963	134	-	-	4,739,624	230,873	1,178,737
PERIOD 4e - License Termination																					
Period 4e Direct Decommissioning Activities																					
4e.1.1	ORISE confirmatory survey	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
4e.1.2	Terminate license									a											
4e.1	Subtotal Period 4e Activity Costs	-	-	-	-	-	-	126	38	164	164	-	-	-	-	-	-	-	-	-	-
Period 4e Additional Costs																					
4e.2.1	License Termination Survey	-	-	-	-	-	-	4,047	1,214	5,262	5,262	-	-	-	-	-	-	-	-	87,009	-
4e.2	Subtotal Period 4e Additional Costs	-	-	-	-	-	-	4,047	1,214	5,262	5,262	-	-	-	-	-	-	-	-	87,009	-
Period 4e Collateral Costs																					
4e.3.1	DOC staff relocation expenses	-	-	-	-	-	-	1,289	193	1,482	1,482	-	-	-	-	-	-	-	-	-	-
4e.3.2	Florida LLRW Inspection Fee	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-
4e.3.3	Fixed Overhead	-	-	-	-	-	-	603	90	693	693	-	-	-	-	-	-	-	-	-	-
4e.3	Subtotal Period 4e Collateral Costs	-	-	-	-	-	-	1,892	284	2,176	2,176	-	-	-	-	-	-	-	-	-	-

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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 4e Period-Dependent Costs																					
4e.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4e.4.2	Property taxes	-	-	-	-	-	-	376	38	414	414	-	-	-	-	-	-	-	-	-	-
4e.4.3	Health physics supplies	-	477	-	-	-	-	-	119	596	596	-	-	-	-	-	-	-	-	-	-
4e.4.4	Disposal of DAW generated	-	-	4	4	-	32	-	9	49	49	-	-	-	305	-	-	-	6,105	75	-
4e.4.5	Plant energy budget	-	-	-	-	-	-	108	16	122	122	-	-	-	-	-	-	-	-	-	-
4e.4.6	NRC Fees	-	-	-	-	-	-	247	25	271	271	-	-	-	-	-	-	-	-	-	-
4e.4.7	NEI Fees	-	-	-	-	-	-	99	10	108	108	-	-	-	-	-	-	-	-	-	-
4e.4.8	Security Staff Cost	-	-	-	-	-	-	284	43	326	326	-	-	-	-	-	-	-	-	-	14,143
4e.4.9	DOC Staff Cost	-	-	-	-	-	-	3,903	585	4,488	4,488	-	-	-	-	-	-	-	-	-	57,357
4e.4.10	Utility Staff Cost	-	-	-	-	-	-	4,509	676	5,186	5,186	-	-	-	-	-	-	-	-	-	72,679
4e.4	Subtotal Period 4e Period-Dependent Costs	-	477	4	4	-	32	9,524	1,521	11,561	11,561	-	-	-	305	-	-	-	6,105	75	144,179
4e.0	TOTAL PERIOD 4e COST	-	477	4	4	-	32	15,589	3,056	19,163	19,163	-	-	-	305	-	-	-	6,105	87,084	144,179
PERIOD 4 TOTALS		2,274	32,911	6,928	10,687	14,300	32,204	122,991	43,508	265,803	258,949	1,491	5,362	128,899	63,120	2,948	966	487	13,603,740	588,683	1,839,123
PERIOD 5b - Site Restoration																					
Period 5b Direct Decommissioning Activities																					
Demolition of Remaining Site Buildings																					
5b.1.1.1	Containment	-	3,145	-	-	-	-	-	472	3,617	-	-	3,617	-	-	-	-	-	-	47,997	-
5b.1.1.2	Auxiliary	-	932	-	-	-	-	-	140	1,071	-	-	1,071	-	-	-	-	-	-	17,661	-
5b.1.1.3	Control	-	93	-	-	-	-	-	14	106	-	-	106	-	-	-	-	-	-	1,773	-
5b.1.1.4	Fuel Handling	-	403	-	-	-	-	-	61	464	-	-	464	-	-	-	-	-	-	6,880	-
5b.1.1.5	Intake	-	97	-	-	-	-	-	15	112	-	-	112	-	-	-	-	-	-	1,577	-
5b.1.1.6	Miscellaneous Structures - Clean	-	1,956	-	-	-	-	-	293	2,250	-	-	2,250	-	-	-	-	-	-	40,752	-
5b.1.1.7	Miscellaneous Structures - Contaminated	-	74	-	-	-	-	-	11	85	-	-	85	-	-	-	-	-	-	1,447	-
5b.1.1.8	Radwaste Solidification	-	584	-	-	-	-	-	88	671	-	-	671	-	-	-	-	-	-	9,978	-
5b.1.1.9	Steelwell	-	75	-	-	-	-	-	11	87	-	-	87	-	-	-	-	-	-	1,251	-
5b.1.1.10	Turbine	-	415	-	-	-	-	-	62	477	-	-	477	-	-	-	-	-	-	9,030	-
5b.1.1.11	Turbine Pedestal	-	357	-	-	-	-	-	54	411	-	-	411	-	-	-	-	-	-	5,055	-
5b.1.1	Totals	-	8,132	-	-	-	-	-	1,220	9,352	-	-	9,352	-	-	-	-	-	-	143,601	-
Site Closeout Activities																					
5b.1.2	Remove Rubble	-	3,309	-	-	-	-	-	496	3,806	-	-	3,806	-	-	-	-	-	-	15,108	-
5b.1.3	Grade & landscape site	-	94	-	-	-	-	-	14	108	-	-	108	-	-	-	-	-	-	333	-
5b.1.4	Final report to NRC	-	-	-	-	-	-	64	10	73	73	-	-	-	-	-	-	-	-	-	668
5b.1	Subtotal Period 5b Activity Costs	-	11,536	-	-	-	-	64	1,740	13,339	73	-	13,266	-	-	-	-	-	-	159,042	668
Period 5b Additional Costs																					
5b.2.1	Intake Structure Cofferdam	-	152	-	-	-	-	-	23	175	-	-	175	-	-	-	-	-	-	1,898	-
5b.2.2	Discharge Structure Cofferdam	-	165	-	-	-	-	-	25	190	-	-	190	-	-	-	-	-	-	2,066	-
5b.2.3	Concrete Processing	-	333	-	2	-	-	-	50	385	-	-	385	-	-	-	-	-	-	2,214	-
5b.2.4	ISFSI Site Restoration	-	387	-	-	-	-	21	61	469	-	469	-	-	-	-	-	-	-	1,129	80
5b.2	Subtotal Period 5b Additional Costs	-	1,037	-	2	-	-	21	159	1,219	-	469	750	-	-	-	-	-	-	7,305	80
Period 5b Collateral Costs																					
5b.3.1	Small tool allowance	-	105	-	-	-	-	-	16	121	-	-	121	-	-	-	-	-	-	-	-
5b.3	Subtotal Period 5b Collateral Costs	-	105	-	-	-	-	-	16	121	-	-	121	-	-	-	-	-	-	-	-
Period 5b Period-Dependent Costs																					
5b.4.1	Insurance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5b.4.2	Property taxes	-	-	-	-	-	-	956	96	1,051	-	-	1,051	-	-	-	-	-	-	-	-
5b.4.3	Heavy equipment rental	-	4,531	-	-	-	-	-	680	5,211	-	-	5,211	-	-	-	-	-	-	-	-
5b.4.4	Plant energy budget	-	-	-	-	-	-	135	20	155	-	-	155	-	-	-	-	-	-	-	-
5b.4.5	Security Staff Cost	-	-	-	-	-	-	720	108	828	-	-	828	-	-	-	-	-	-	-	35,897
5b.4.6	DOC Staff Cost	-	-	-	-	-	-	10,785	1,618	12,402	-	-	12,402	-	-	-	-	-	-	-	157,549
5b.4.7	Utility Staff Cost	-	-	-	-	-	-	7,120	1,068	8,188	-	-	8,188	-	-	-	-	-	-	-	101,709

Table D-2
Turkey Point Plant, Unit 4
SAFSTOR Decommissioning Cost Estimate
(Thousands of 2004 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
5b.4	Subtotal Period 5b Period-Dependent Costs	-	4,531	-	-	-	-	19,715	3,589	27,835	-	-	27,835	-	-	-	-	-	-	-	295,154
5b.0	TOTAL PERIOD 5b COST	-	17,210	-	2	-	-	19,799	5,504	42,515	73	469	41,972	-	-	-	-	-	-	166,347	295,902
PERIOD 5 TOTALS		-	17,210	-	2	-	-	19,799	5,504	42,515	73	469	41,972	-	-	-	-	-	-	166,347	295,902
TOTAL COST TO DECOMMISSION		5,777	57,104	7,952	12,539	21,537	37,747	416,576	93,256	652,488	533,489	71,147	47,852	173,813	150,844	4,517	988	487	17,836,680	829,176	4,909,930

TOTAL COST TO DECOMMISSION WITH 16.68% CONTINGENCY:	$652,488	thousands of 2004 dollars
TOTAL NRC LICENSE TERMINATION COST IS 81.76% OR:	$533,489	thousands of 2004 dollars
SPENT FUEL MANAGEMENT COST IS 10.9% OR:	$71,147	thousands of 2004 dollars
NON-NUCLEAR DEMOLITION COST IS 7.33% OR:	$47,852	thousands of 2004 dollars
TOTAL RADWASTE VOLUME BURIED (EXCLUDING GTCC):	156,347	cubic feet
TOTAL GREATER THAN CLASS C RADWASTE VOLUME GENERATED:	487	cubic feet
TOTAL SCRAP METAL REMOVED:	37,831	tons
TOTAL CRAFT LABOR REQUIREMENTS:	829,176	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.
cell containing " - " indicates a zero value.

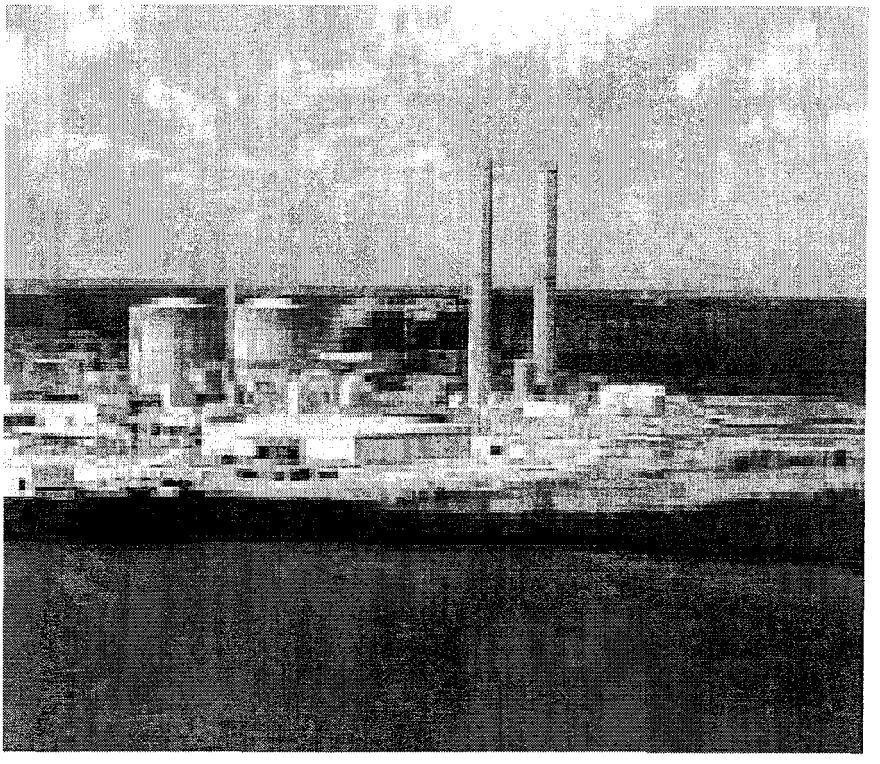
SECTION 12

COMPARISON REPORT
Comparative Analysis of Cost Studies
1999 & 2005 Cost Studies

COMPARISON REPORT 1999 - 2004

for the

TURKEY POINT PLANT, UNITS 3 AND 4



prepared for the

Florida Power & Light Company

prepared by

TLG Services, Inc.
Bridgewater, Connecticut

November 2005

APPROVALS

Project Manager	William A. Cloutier, Jr.	11/16/2005
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	Francis W. Seymore	**Date**
Quality Assurance Manager	Thomas S. LaGrandia for TLW	11/16/05
	Thomas L. Williamson	**Date**

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TABLES

REVISION LOG

No.	CRA No.	Date	Item Revised	Reason for Revision
0		11-16-2005		Original Issue

SUMMARY

This document provides comparative discussion on the decommissioning cost estimate prepared for the Turkey Point Plant, Units 3 and 4 (Turkey Point) in 1999[1] and updated in 2005[2] by TLG Services, Inc. (TLG). The estimates described in this document were constructed for a prompt decommissioning scenario, following the scheduled cessation of operations. The scope of the estimates is generally consistent, including cost elements for license termination, spent fuel management and site restoration activities.

The cost models were generated in 1998 and 2004 dollars, respectively. For purposes of comparison, the two estimates are referred to by their financial bases. The 2004, or current estimate, was developed using the basic inventory and plant design information from the 1998 or previous cost model. The data, estimating assumptions and site-specific considerations were reviewed for the 2004 analysis. The cost model was modified where new information was available, updated site-specific information was obtained, or experience from ongoing decommissioning programs justified such changes.

Overall, the estimate to decommission Turkey Point increased approximately 17% over the six-year period (1998-2004 financial years). As can be seen in Table 1, cost elements that increased include program management ($109.1 million), component and material removal ($32.5 million), off-site waste processing ($12.2 million) and transportation ($16.8 million).

A significant decrease in low-level radioactive waste disposal costs ($12.2 million) was realized by sending the waste to a lower-cost, although more distant disposal site. Spent fuel management costs also decreased ($50.7 million) with a shorter site residence time, based upon the presumption that the DOE could reduce the site backlog during the additional 20 years of plant operation.

The rationale for specific changes in several major cost centers is discussed in more detail within the following narrative. Comparisons are focused on permutations in the technical work scope and modifications to assumptions that have affected the cost of decommissioning (inflationary effects are generally ignored for purposes of this analysis). Cost element discussions are arranged in the order of greatest impact to least, either positive or negative.

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1 "Decommissioning Cost Study for the Turkey Point Plant, Units 3 and 4," TLG Document F02-1297-003, Rev. 1, dated October 1999.

2 "Decommissioning Cost Analysis for the Turkey Point Plant, Units 3 and 4," TLG Document F02-1512-003, Rev. 0, dated October 2005.

COMPARATIVE ANALYSIS

TLG completed a decommissioning cost analysis for Turkey Point in 1999. The analysis provided Florida Power and Light (FPL), the owner and operator of the nuclear units, with the projected costs (in 1998 dollars) to completely decontaminate and dismantle the station following the normal cessation of plant operations. For purposes of this comparison, this analysis is referred to as the 1998 estimate or previous analysis.

In 2005, TLG updated the cost analysis for FPL. The current analysis uses the physical plant inventory and design information from the previous analysis. This data was reviewed, along with the assumptions and other site-specific considerations, and modified or updated where new information was available or experience from ongoing decommissioning programs justified such changes. Since the update relied upon 2004 economic data, the analysis is referred to as the 2004 estimate or current analysis.

Generally, escalation of the various cost components in a decommissioning analysis (with the exception of those costs associated with radioactive waste disposal), follows "standard" cost indices. However, such indices can only be applied successfully to a static model, *i.e.*, where the bases against which the indices are applied have not undergone significant change. In the period between the last two analyses (the 1998 and 2004 financial years), new cost elements have been added and older cost elements revised. With this in mind, the following discussion encompasses the major areas of difference between the two estimates.

In 1999, the estimate to promptly decommission Turkey Point was estimated at approximately $847.9 million (in 1998 dollars). The comparable cost in 2005 is $992.3 million (in 2004 dollars). Significant areas of change in the two estimates are shown in Table 1.

The overall decommissioning scope of the current cost estimate has not significantly changed from that presented in 1999, with one exception. The current estimate incorporates an extended operating life, 20 years longer than previously assumed. While activation levels in the reactor vessel increase with time, the impact on the remotely performed activities associated with its disposition is relatively small. However, the longer operating life has a more significant impact on the costs associated with spent fuel management. In particular, the ISFSI operating period is significantly shorter in the 2004 extended life scenario based upon the presumption that the DOE is successful in reducing the backlog of spent fuel during the additional 20 years of operation.

As described earlier, the majority of the 17% increase in the cost over the six-year period can be attributed to corresponding increases in the cost centers associated with program management, component/equipment removal, transportation and off-site waste processing. While the scope may not have significantly changed, there are differences in the base assumptions between the two studies. These differences are identified in the discussion of the following cost elements.

1. Program Management (Staffing)

The increase in the cost of program management ($109.1 million) is primarily due to a corresponding increase in the size of the organization designated to manage/oversee the decommissioning project. The increase in personnel is particularly significant during the preparation phase with between 65-75 more utility personnel on the 2004 staff during the initial phase and 14 additional Decommissioning Operations Contractor (DOC) personnel added to the organization. Maximum peak staffing for the various decommissioning periods are identified in Table 2.

The decision to increase the organization for the 2004 analyses was based upon several factors, in particular, current field experience at facilities undergoing decommissioning. In addition, the previous analyses assumed an instantaneous reduction of the operating organization immediately following the cessation of plant operations. However, during this transitional period, a majority of the plant systems will remain operational. Preparations for decommissioning will still require many of the other plant services to be functional and the support of a significant portion of the current workforce. Preparations also include the drain-down of non-essential plant systems, processing of operating inventories, decontamination of the selected plant systems to reduce working area dose rates, remediation of any hazardous and toxic wastes, as well as a detailed characterization of the plant facilities and surrounding environs. Therefore, to support these activities, the reduction of plant personnel is more gradual in the 2004 analysis during the transition period.

Labor costs increased over the six year period, with salaries rising from 13.5% to 46.3% for the various categories of personnel within the decommissioning organization, *e.g.*, clerical, supervisory, financial, technical and engineering. Overhead costs added to the increase, rising approximately 13.8% over the six year period.

Direct costs (wages and benefits) are a significant factor in the overall expense to manage a decommissioning program. However, the duration over

which they are incurred can be just as important. For example, spent fuel is removed from the site 12 years earlier in the 2004 study (ISFSI Operations). While the caretaking staff during this phase in relatively small, it does help to offset the increase in program management costs (as well as other period-dependent expenses).

The demolition of site structures and the restoration of the site were also rescheduled in the 2004 analysis. The 2004 analysis assumes that the reactor buildings are dismantled in series rather than in parallel, as was assumed in 1998. The period-dependent costs, *e.g.*, staffing, heavy equipment, taxes and fees, were the primary contributors to the increased cost of Period 3 due to the additional ten month duration. A comparison of durations for the individual decommissioning phases is provided in Table 3.

2. Spent Fuel Management (ISFSI Related)

For purposes of generating a comprehensive post-shutdown cost, spent fuel generated over the operating life of Turkey Point is assumed to be stored at the site until the DOE can complete the transfer of assemblies to its geologic repository. The projected storage period is based upon the latest information available from the DOE at the time the cost model was assembled, operating data for the nuclear unit, and some historical perspective on this ongoing government program to develop a national waste repository.

The current analysis assumes that the high-level waste repository will initiate operations in 2015, consistent with that assumed in the previous analysis. With the increased operating period, however, the length of time estimated to be required before the DOE can complete the transfer of spent fuel to its geologic repository is approximately 12 years less (from the cessation of plant operations), based upon the assumption that the DOE can effectively reduce the backlog of spent fuel over the additional 20 years of plant operations.

The 1998 analysis allocated a significant portion of the capital expense to construct the ISFSI to decommissioning, based upon the number of casks required to off-load the pools once the units were shut down. This presumed that the ISFSI would be constructed during plant operations to accommodate the maximum number of storage casks for operations and/or decommissioning. The cost attributed to decommissioning was included in the anticipated years of expenditure, *i.e.*, during plant operations, years 2005 to 2009. By comparison, the 2004 estimate includes only a nominal cost for ISFSI pad expansion and only during the decommissioning period. *i.e.*, there

are no pre-decommissioning costs included in the current analysis with the additional 20 years of plant operations.

Based upon the original shutdown dates (2012 and 2013), the capital cost for 105 dry fuel storage casks were included within the 1998 decommissioning cost model. Operating costs for the ISFSI were included for 25 years following the conclusion of site restoration activities. By comparison, the 2004 cost model includes a cost for only 27 casks and a post-decommissioning operating period of 12 years. The revised spent fuel management plan resulted in a decrease of $50.7 million in the 2004 cost model for this cost element.

Although, there were significant savings incorporated into the 2004 cost model, there were some additional costs that were added. The process to load the spent fuel storage canisters, seal, drain and dry the canisters, and place the canisters into a transfer or transport cask was not specifically defined in the 1998 cost model. The activities were assumed to be performed by the staff at no additional cost to the project. Subsequent experience at sites involved in building and operating independent dry fuel storage facilities has provided useful information on the additional costs incurred in accomplishing these tasks. As such, the 2004 cost model includes separately identified and additional costs for the handling and packaging activities, as well as the operation of the spent fuel pool during the transfer process. A unit cost of $290,000 was included in the current analyses for the transfer of each fuel canister from the pool to the ISFSI or $145,000 from the pool into the DOE transport cask. Campaign costs of $175,000 and $350,000 were added for pool to the DOE or ISFSI transfers, respectively. An additional transfer cost of $15,000 per canister was allocated for transfer of the canisters from the ISFSI to a DOE transport cask.

3. Removal

Contract labor is used to decontaminate, remove, and package the plant inventory, as well as to support the dismantling and demolition of the physical structures. The dismantling process is labor-intensive and the cost model assumes that a common laborer performs a majority of the required tasks, with support from the various skilled trades. Wage rates for the laborer and craftsman increased approximately 56% and 54% respectively over the six year period, as shown in Table 4. The rates increases offset any decrease in the hours expended created by productivity improvements and/or other efficiencies. The net result was an increase of $32.5 million in this category.

As seen in Table 4, there is a significant decrease in the labor/craft hours reported in the 2004 estimates. Since a significant portion of the waste stream (including contaminated as well as potentially contaminated material) is now routed for off-site processing rather than for controlled disposal, the inventory can be removed in larger quantities, *i.e.*, instead of being sized-reduced to accommodate disposal containers. Therefore, fewer hours are required to remove the same inventory, *e.g.*, piping that involves multiple, repetitive activities.

Decontamination hours were also reduced or eliminated for non-contaminated material located in the RCA. This material is designated for off-site processing in the 2004 estimates rather than attempting to free-release the components in-place, as was the previous assumption.

4. Spent Fuel Pool Isolation

Costs to isolate the spent fuel pools were added to the 2004 cost model. The isolation cost includes the engineering, facility modifications, and the capital improvements necessary to segregate the pool areas and reduce the protected boundary, so that decommissioning operations can proceed expeditiously. The 2004 value for this cost element added $16.9 million to the total cost of decommissioning.

5. Transportation

The 1998 cost model assumed that all of the low-level radioactive waste requiring controlled disposal would be sent to a burial facility in Barnwell, South Carolina. Savings in waste management were realized in the 2004 cost model by using the lower-cost, although more distant Envirocare facility, located in Clive, Utah. As such, the increase in transportation costs is due to a combination of higher tariffs, fuel surcharges and the increase in mileage, *i.e.*, from South Carolina to Utah. It should be noted that a portion of the $16.8 million increase would have been incurred even if the burial destination had remained the same.

6. Off-Site Waste Processing

Several factors contributed to the increase in off-site waste processing costs, most importantly, a larger volume of material designated for processing and a higher processing fee. Significant changes were made in the disposition of potentially contaminated equipment and components as well as in selected secondary side systems. Material from the radiological-controlled area that

was targeted for in-place decontamination and release in the 1998 cost model is now treated off-site, consistent with current industry experience. Primary to secondary side leakage is recognized in the latest estimate with a portion of the turbine-condenser system designated for off-site processing. Adding to the increase, the unit cost to process and condition waste at a centralized off-site facility increased from $1.20 in 1998 to $2.50 a pound in the 2004 study. While there were some savings from the lower cost of direct disposal, *e.g.*, for the spent fuel racks, and the avoided cost of decontamination, the overall cost of waste processing increased $12.2 million over the six year period.

7. Low-Level Radioactive Waste Disposal

The 1998 cost model assumed that all of the low-level radioactive waste requiring controlled disposal would be sent to the Barnwell, South Carolina facility. A disposal rate of $4.40 per pound was used for estimating disposal costs. The equivalent rate in the 2004 cost model for the Barnwell facility is $5.43 per pound.

The 2004 cost model assumes that all of the low-level radioactive waste requiring controlled disposal is now sent to the lower cost Envirocare facility. Class A material is buried at Envirocare at unit costs ranging from $163 to $267 per cubic foot ($2 to $3 per pound based upon an average weight density of 85 pounds per cubic foot), including containerized waste and other large components, *e.g.*, steam generators, reactor coolant pump motors, miscellaneous steel, metal siding, scaffolding, and structural steel. This change in the waste management model produced a $12.2 million or 12.0% reduction in the 2004 cost component for low-level radioactive disposal.

It should be noted that Envirocare cannot currently accept the more highly radioactive waste (10 CFR §61 Class B and C). Therefore, for estimating purposes, Barnwell rates are used in the 2004 cost model.

8. Property Taxes

Both the 1998 and 2004 estimates assumed a continuing tax obligation over the life of the decommissioning program. The tax model in the 2004 estimate assumes a continuing and annual assessment of $1 million on the property, an increase of approximately $600 thousand from the 1998 cost model. Partially offsetting the increased assessed value was the schedule savings, *i.e.*, from 12 fewer years of ISFSI operation. The result is a $8.7 million increase in the 2004 cost model for the property tax line item.

9. Insurance and Regulatory Fees

The application of nuclear and property insurance premiums during decommissioning was revised in the 2004 cost model to conform with the more recent and proposed NRC guidance on "minimum" insurance coverage during decommissioning. The overall effect of the proposed NRC guidance was to increase the monthly insurance costs during the early phases of decommissioning, and lower costs during the latter stages of the project. Overall the cost increased by $1.9 million.

The 1998 cost model applied ISFSI licensing fees throughout the decommissioning program. With a revision in the NRC's fee structure, ISFSI fees are only incurred in the 2004 cost model once the operating license(s) have been terminated. With the shorter schedule for ISFSI operations, this change produced a savings of approximately $7 million.

Partially offsetting the savings in licensing fees was the addition of INPO fees during the preparation phase of decommissioning and NEI membership fees during the entire decommissioning program. However, the net effect of the changes in the 2004 cost model was a decrease of $483 thousand.

10. Decontamination

Increased craft labor costs were primarily responsible for the $4.6 million increase in decontamination costs, although re-indexed and higher equipment and material costs also contributed to the increase. Partially offsetting the increase was a decrease in the inventory designated for on-site decontamination, *i.e.*, this material is now routed to an off-site processing center or for direct disposal in the 2004 cost model. Off-site processing is generally more economical and efficient since the processing facilities are designed to handle the large volumes anticipated to be generated from decommissioning and do not have to contend with the other sources of background activity in the plant in the process required to release material for unrestricted use, in particular the sensitive surveys.

11. Packaging

Packaging costs increased $4.2 million or approximately 22.6%. Higher labor and material costs were contributors. In addition, the packaging costs for the steam generators were recalculated and redistributed (previous studies reported some "packaging" expenses as "removal" costs) which added to the reported increase.

12. Energy

The cost of electricity (purchased power) increased approximately 43% over the six year period. The increase was mitigated by a revision in the methodology used to calculate energy consumption. Actual usage data, provided from ongoing decommissioning projects, was relied upon in the 2004 cost model to project a similar consumption trend for Turkey Point. As such, the resulting increase in this line item was limited to 28.3% or $2.3 million.

13. Fixed Overhead

Corporate overhead charges were updated in the 2004 cost model from an annual assessment of approximately $1.5 million to $1.6 million. As a result, the line item increased $1.4 million or approximately 11.8% over the six year period.

14. Site Characterization and License Termination Surveys

Survey costs increased commensurate with the increase in craft labor. However, offsetting savings were realized in the license termination survey due to greater assumed efficiencies in the performance of exterior surveys and less expensive sample testing, which was performed by an off-site laboratory in the 1998 analysis. Overall, the cost decreased $873 thousand for this activity in the 2004 cost model.

TABLE 1
COST COMPARISON
1998 vs. 2004

Cost Center	1998 ($1000s)	2004 ($1000s)	Delta ($1000s)	% Change	Annual Change
Program Management [1]	343,511	452,569	109,058	31.7	5.0
Spent Fuel Management	111,367	60,666	(50,700)	-45.5	-8.0
Removal	102,025	134,573	32,548	31.9	5.0
Spent Fuel Pool Isolation	-	16,856	16,856		
Transportation	11,575	28,352	16,777	144.9	24.0
Off-site Waste Processing	17,643	29,849	12,206	69.2	12.0
Waste Disposal	143,864	131,711	(12,153)	-8.4	-1.0
Property Taxes	15,025	23,745	8,720	58.0	10.0
Insurance and Regulatory Fees	36,211	35,728	(483)	-1.3	0.0
Decontamination	14,889	19,443	4,554	30.6	5.0
Packaging	18,759	23,002	4,243	22.6	4.0
Energy	8,031	10,305	2,274	28.3	5.0
Fixed Overhead	11,908	13,308	1,399	11.8	2.0
Characterization/Surveys	13,092	12,220	(873)	-6.7	-1.0
Total [2]	847,900	992,326	144,426	17.0	3.0

1 Includes utility and contractor organizations, engineering and security
2 Columns may not add due to rounding

TABLE 2
DECON DECOMMISSIONING STAFFING COMPARISON

		1998 Peak Manloading (persons)	1998 Peak Cost/Month ($1000s)	2004 Peak Manloading (persons)	2004 Peak Cost/Month ($1000s)
Unit 3					
Period 1	Utility	142	1,046	211	2,021
	DOC	47	445	61	709
Period 2	Utility	150	1.084	149	1,454
	DOC	52	475	76	849
Period 3	Utility	9	57	14	147
	DOC	18	165	24	265
Unit 4					
Period 1	Utility	142	1,046	211	2,021
	DOC	47	445	61	709
Period 2	Utility	150	1,084	149	1,454
	DOC	52	475	76	849
Period 3	Utility	33	274	32	383
	DOC	37	332	40	470

TABLE 3
PROJECT SCHEDULE COMPARISON
(months)

	1998	2004
Unit 3		
Period 1: Decommissioning Preparations	18	18
Period 2: Decommissioning	72	73
Period 3: Site Restoration	13	23 [1]
ISFSI Operations	292	143
ISFSI Decommissioning and Demolition	6	6
TOTAL	**401**	**263**
Unit 4		
Period 1: Preparations	18	20 [2]
Period 2: Decommissioning	63	63
Period 3: Site Restoration	13	23 [1]
ISFSI Operations	292	143
ISFSI Decommissioning and Demolition	6	6
TOTAL	**393**	**255**

[1] Demolition of containment structures re-sequenced from a parallel activity (1998) to series (2004)
[2] Include 2 month delay period to sequence reactor segmentation

TABLE 4
LABOR WAGES AND PERSON-HOUR COMPARISON

Category	1998	2004	Change
	($/hour)	**($/hour)**	**(%)**
Laborer	17.63	27.45	56
Craftsman	26.71	41.18	54
Foreman	29.86	42.36	42
General Foreman	31.21	44.93	44
	(hours)	**(hours)**	**(%)**
Laborer/Craft	1,414,992	909,586	-36

CONCLUSION

The largest differential in the costs reported to decommission Turkey Point in 1998 and 2004 were in the areas of Program Management (+$109.1 million), Spent Fuel Management (-$50.7 million), Component/Equipment Removal (+$32.5 million), Transportation (+$16.8 million), Off-Site Waste Processing (+$12.2 million), and Low Level Radioactive Waste Disposal (-$12.2 million). Program management costs increased with the addition of personnel to the organizations designated to manage/oversee the decommissioning project, and with an increase in salaries and other compensation. Spent fuel management cost decreased as the residence time for storage was reduced by 12 years on the premise that DOE would be able to decrease the backlog during the additional 20 years of plant operations. Higher labor costs increased component and equipment removal, despite increased efficiencies. Transportation costs increased commensurate with the change in the destination for low-level radioactive waste disposal, *i.e.*, from South Carolina to Utah. Off-site waste processing increased with the additional volume of material designated for recovery and low-level radioactive waste disposal costs declined.

Overall, the estimate to decommission the Turkey Point units increased 17% over the six year period. The value is somewhat deceiving since it represents a composite of elements that increased as well as decreased. As such, the 3% annual growth may not be indicative of future increase in the decommissioning cost.