

ATTACHMENT F

TESTIMONY OF MR. TODD SMITH
AND
ASSOCIATED EXHIBITS

EXHIBIT No. CY-300

DIRECT TESTIMONY OF
MR. TODD SMITH

CONNECTICUT YANKEE ATOMIC POWER COMPANY

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Connecticut Yankee Atomic Power Company) Docket No. ER_____

DIRECT TESTIMONY OF TODD SMITH

1 **I. INTRODUCTION**

2 Q. Please state your name and business address.

3 A. My name is Todd Smith. My business address is TSSD Services, Inc., 79 Aviator
4 Place, Oakland, Maine 04963.

5

6 Q. By whom are you employed and in what capacity?

7 A. I am the President of TSSD Services, Inc. (“TSSD”), a professional consulting firm
8 that provides management and technical staff resources to the nuclear industry. Its
9 services pertain to all stages of the nuclear plant lifecycle, including decommissioning.
10 I am also the Director of Operations for Connecticut Yankee Atomic Power Company
11 (“Yankee” or the “Company”), as well as its sister companies, Yankee Atomic
12 Electric Company (“Yankee Atomic”) and Maine Yankee Atomic Power Company
13 (“Maine Yankee”). As Director of Operations, I am responsible for day-to-day
14 operations at each Yankee facility, including budget adherence.

15

16 Q. Please summarize your educational and professional background.

17 A. I graduated from Thomas College, earning a Bachelor of Science degree in
18 Accounting (1992) and, later, a Masters of Business Administration degree (1999).

1 I worked in the heavy construction industry for six years, including as a project cost
2 engineer for Cianbro Corporation, one of the largest construction and construction
3 services companies on the East Coast. As President of TSSD, I have extensive
4 experience in the nuclear decommissioning field. My career has included eighteen
5 years of work with the heavy construction industry, involving the tasks of construction
6 management, corporate management and project controls. For twelve years, I have
7 served as Executive Director of Business Operations, Business Manager, Project
8 Controls Manager, or Decommissioning Waste Manager at Yankee, Yankee Atomic
9 and/or Maine Yankee.

10
11 Q. Have you previously testified before a regulatory commission?

12 A. Yes. I presented testimony before this Commission on behalf of the Company in
13 Docket Nos. ER11-101-000 and ER04-981-000. I also presented testimony on behalf
14 of Maine Yankee in Docket Nos. ER08-1356-000 and ER04-55-000, and on behalf of
15 Yankee Atomic in Docket No. ER06-249-000.

16
17 **II. PURPOSE OF TESTIMONY**

18 Q. What is the purpose of your testimony?

19 A. Yankee is submitting an application to the Commission to reduce its wholesale rates to
20 reflect the combined effect of: (1) Yankee's receipt of a damage award in litigation
21 with the DOE, and the need to address the possible recovery of additional damages in
22 the future phases of litigation; and (2) a projected increase in decommissioning costs

1 due primarily to the extension of the period during which Yankee must store spent
2 nuclear fuel and high-level waste, as well as other revised cost estimates.

3 In my testimony I will present Yankee's new estimate of the costs of various
4 activities and items required to operate and subsequently dismantle and decontaminate
5 ("D&D") the Company's independent spent fuel storage installation ("ISFSI"). I refer
6 to these costs collectively as "decommissioning costs" and to my analysis as the "2013
7 Estimate." Another Yankee witness, Ms. Carla Pizzella, Yankee's Vice President,
8 Chief Financial Officer, and Treasurer, uses the new decommissioning cost estimate to
9 analyze the adequacy of funding for Yankee's Nuclear Decommissioning Trust
10 ("NDT"). Finally, I note that the decommissioning estimate is subject to certain
11 assumptions, and variations in these assumptions could cause large changes in the
12 final costs that the Company may incur. The two other Yankee witnesses, Mr. Wayne
13 Norton and Ms. Pizzella, discuss these assumptions and the potential for changes to
14 the assumptions further in their testimony.

15
16 Q. Can you summarize your testimony?

17 A. The 2013 Estimate is divided into two components: ISFSI operations and ISFS D&D.
18 It projects a total cost of \$334.8 million for storing spent nuclear fuel and high-level
19 waste and ISFSI D&D for the 2013 to 2033 period as shown in Exhibit No. CY-301.
20 This total compares favorably to Yankee's previous estimate of the same costs, which
21 was performed in 2010 (the "2010 Estimate"), when the equivalent portions of the two
22 estimates are compared. The 2010 Estimate projected a total cost (including
23 escalation) of \$184.9 million for the period 2010-2023 as shown in Exhibit No. CY-

1 302. As I will explain, the 2013 Estimate covers a longer period, based on the
2 projected extension of the period during which Yankee will have to operate the ISFSI.
3 However, the two estimates can be compared for the period that they both cover,
4 namely 2010-2023. The combination of actual costs in 2010-2012 with the 2013
5 Estimate's forecast for 2013-2023 totals \$188.1 million, which is an increase of \$3.2
6 million. Thus, on a comparable basis (i.e., comparing the portions of the two
7 estimates covering the same period – 2010 to 2023), the 2013 Estimate is very close to
8 the 2010 Estimate; differing by less than 2%.

9 The 2013 Estimate total of \$334.8 million differs from the 2010 Estimate's
10 projection of \$184.9 million for a number of reasons. The primary reason for the
11 difference is that, based on DOE's delays in removing the spent fuel and high-level
12 waste, Yankee's operations are projected to extend an additional 10 years to 2033.
13 Extending Yankee's operations to 2033 increases the 2013 Estimate (including
14 escalation) to \$334.8 million, which is an increase of \$146.7 million. Other reasons
15 for the difference include the capital costs associated with new security requirements
16 expected to result from regulation changes being considered by the NRC, and the
17 incorporation of the new "site specific" ISFSI D&D cost estimate prepared by
18 independent third-party, as required by recently adopted NRC regulation.

19
20 **II. BACKGROUND**

21 Q. Can you provide some background regarding Yankee's decommissioning efforts?

22 A. Yes. As explained more fully in Mr. Norton's testimony, on December 4, 1996,

23 Yankee's Board of Directors voted to permanently cease power operations at the Plant

1 and commence the process of decommissioning. D&D activities were undertaken
2 beginning in 1998, and were completed in 2007. Construction of the ISFSI was
3 completed in 2002. Transfer of spent fuel and Greater-Than-Class C (“GTCC”) waste
4 to the storage canisters was completed in 2005. On November 26, 2007, the Nuclear
5 Regulatory Commission (“NRC”) issued Yankee a fuel storage-only operating license
6 for the Plant. Yankee has safely and securely stored the spent fuel and GTCC waste
7 from the Plant in the ISFSI since that time.

8 Most of the legal and regulatory issues associated with the Plant’s
9 decommissioning have been resolved by past proceedings and settlement agreements.
10 Thus, for example, under a 2006 settlement agreement, as supplemented by a 2008
11 settlement agreement, the recovery of the costs of the decommissioning activities
12 completed in 2007, including the D&D of the Plant, were finalized. A 2000 settlement
13 agreement established how any net proceeds from litigation against DOE for its delay
14 in removing nuclear materials from the Plant site shall be applied to Yankee costs.
15 With the Plant D&D completed in 2007, Yankee’s principal remaining activities
16 include the current operation of the ISFSI and the future decommissioning of the
17 ISFSI. And, its primary rate component is its decommissioning charge to fund the
18 NDT to cover the costs of these activities.

19
20 Q. When were Yankee’s current decommissioning charges established?

21 A. The Company's current decommissioning charges were established by a 2006
22 settlement, which also established a schedule of charges through 2015. A 2008
23 Settlement revised these charges to account for the difference between actual and

1 projected costs of completing physical decommissioning of the Plant D&D phase of
2 decommissioning. In 2010, Yankee submitted a filing to the Commission that
3 included an updated decommissioning estimate, which is the 2010 Estimate I
4 mentioned earlier. However, in that filing Yankee did not propose any change in its
5 charges to fund the NDT.

6 The current schedule of decommissioning charges include charges of \$40.9
7 million annually for 2011- 2014, and \$43.7 million in 2015, for the purpose of funding
8 (i) ongoing spent fuel/GTCC waste storage costs; (ii) costs of remaining D&D
9 activities that will be required after DOE removes the spent fuel and GTCC waste
10 from the site; (iii) corporate dissolution; and (iv) payment to DOE of the one-time fee
11 associated with pre-1983 spent nuclear fuel, also to be incurred at the time DOE
12 removes the spent fuel and GTCC waste.

13
14 **III. 2013 DECOMMISSIONING ESTIMATE**

15 Q. What are the key assumptions underlying the 2013 Estimate?

16 A. The most important assumption underlying the 2013 Estimate is the projection that the
17 DOE will not remove Yankee's spent fuel and GTCC waste and the site will not be
18 fully decommissioned and remediated before 2033. As Mr. Norton explains, the 2033
19 end-date was chosen based on the assumption that DOE would complete the removal
20 of spent fuel and GTCC waste from the Yankee site in 2031.

21 Another key assumption used in the 2013 Estimate is that DOE will bear the
22 cost of removing the GTCC waste, in addition to the spent nuclear fuel. The Company
23 believes that this is a DOE obligation under the Standard Contract. However, DOE

1 has contested this matter in litigation. In 2008, the Federal Circuit Court of Appeals
2 found that the proper valuation of GTCC waste disposal is an issue that must be
3 resolved in future proceedings, and that the Government need not “bear the cost of
4 GTCC waste disposal alone.” *Yankee Atomic Electric Co. v. U.S.*, 536 F.3d 1268,
5 1279 (2008). In 2010, the U.S. Court of Federal Claims similarly stated that “any
6 additional costs of GTCC disposal are reserved for future proceedings.” *Yankee*
7 *Atomic Electric Co. v. U.S.*, 94 Fed.Cl. 678, 721 n.47 (2010). Notwithstanding these
8 rulings, Yankee believes that it will ultimately prevail on this issue, and thus has
9 assumed in the 2013 Estimate that DOE will bear the cost of GTCC waste removal.
10 Obviously, if Yankee is required to pay a share of the costs of removal and disposal of
11 the GTCC waste, then its costs of decommissioning will increase.

12 Further, with the exception of new NRC ISFSI security requirements expected
13 to result from a pending rulemaking proceeding (discussed below), the 2013 Estimate
14 is based on current laws, regulations, and other mandates applicable to the Company’s
15 decommissioning activities, including nuclear operations, nuclear waste handling,
16 nuclear security, and environmental remediation. Although there have been no major
17 changes in regulatory requirements since the 2010 Estimate, we cannot be assured that
18 this will remain the case over the entire storage period. Such mandates may change
19 over time, and the longer the time period over which storage and decommissioning
20 extend, the greater the chance that such changes may take place.

21 Ms. Pizzella and Mr. Norton provide further detail regarding the assumptions
22 underlying the 2013 Estimate, and discuss a number of uncertainties that may force
23 the Company to adjust these assumptions in the future. It is important to understand

1 that my testimony is based on these assumptions, and is therefore subject to the
2 uncertainties Ms. Pizzella and Mr. Norton identify.

3
4 Q. Describe the approach you took to prepare the 2013 Estimate.

5 A. To prepare the 2013 Estimate, I reviewed the projections of the scope of work and
6 labor and material unit costs that formed the basis for the projections in the 2010
7 Estimate of costs for the fuel storage period, including D&D of the ISFSI in order to
8 determine whether these projections remain valid for purposes of the 2013 Estimate. I
9 performed the analysis in this manner because, with the completion of the physical
10 decommissioning of the Plant, Yankee has entered a steady state of operation that
11 consists of managing the spent fuel and GTCC waste storage on site. Because the
12 Plant is no longer operating, the volume of spent fuel and GTCC waste are constant.
13 Thus, absent any major changes in regulatory requirements, this steady state of
14 operation requires a relatively predictable scope of activities.

15 Likewise, the unit costs of performing these activities are relatively stable on a
16 constant dollar basis in the absence of any significant change in market conditions.
17 The same is true of ISFSI D&D: the constant dollar cost of decontaminating and
18 dismantling the ISFSI should not change if there has not been a change in the
19 regulatory requirements affecting the scope of that work, or a change in market
20 conditions affecting the costs. For example, if there has been no change in insurance
21 market conditions, the premium costs for Yankee to obtain insurance to cover the
22 same scope of work involved in decommissioning should not change. Thus, if there
23 has been no major change in regulatory requirements or market conditions affecting

1 ISFSI operations or D&D, the cost projections in the 2010 Estimate should remain
2 valid, once adjusted for escalation and the extended fuel storage term. In my
3 testimony, I accordingly focus on the portions of the scope of work where I have
4 identified changes in the scope of work or the cost of accomplishing the scope of
5 work.

6
7 Q. How is the 2013 Estimate expressed?

8 A. The 2013 Estimate of the scope and unit cost for completing decommissioning is
9 expressed in constant 2013 dollars; in other words, it assesses the price of goods and
10 services based on the value of a dollar in 2013.

11
12 Q. What is the constant dollar estimate used for?

13 A. The constant dollar estimate is used as an input in Yankee's decommissioning funding
14 model, which also takes into account escalation over the projected period until final
15 decommissioning is completed as well as other factors; this produces the final estimate
16 that becomes the basis of Yankee's funding requirements and decommissioning
17 collections. Ms. Pizzella's testimony describes the development of the funding model.

18
19 Q. After your review of the 2010 projections of the scope of work and labor and material
20 unit costs, what did you conclude?

21 A. Based on my review and analysis, I concluded that the scope of work and unescalated
22 unit costs projected in the 2010 Estimate for ISFSI operations and D&D remain
23 reasonable, with the exceptions that I will discuss. There are only a few significant

1 differences between the two estimates in terms of the scope of work. With the Plant
2 site decommissioning completed, the scope of both estimates is primarily limited to
3 the remaining fuel storage activities – i.e., ISFSI operations and D&D. While there
4 have been no major changes in the regulatory requirements affecting ISFSI operations
5 or ISFSI D&D, Yankee has determined, based on experience since the 2010 Estimate
6 was prepared, that it requires additional management resources to address regulatory
7 requirements. In addition, as I will discuss, the 2013 Estimate takes into account the
8 prospect that security costs will increase to comply with new requirements coming out
9 of a rulemaking currently pending before the NRC. As I will also discuss later in my
10 testimony, there have been a number of areas where I have identified changes in the
11 costs of accomplishing the scope of work reflected in the 2013 Estimate.

12 To be clear, I am not claiming that the nominal costs (i.e., the costs actually
13 charged in a particular year, expressed in the value of dollars existing in that year) of
14 labor and materials will stay the same over the next decade: these nominal costs will
15 undoubtedly increase with inflation. However, the real, constant-dollar costs of these
16 labor and materials projected in the 2010 Estimate remain a reasonable projection of
17 these costs today, when expressed in 2013 dollars to account for escalation since the
18 2010 Estimate was prepared, and taking into account the extended term of spent fuel
19 storage and the other factors I will discuss.

20

1 Q. How did you convert the costs in the 2010 Estimate and the 2013 Estimate to escalated
2 dollars?

3 A. For the 2010 Estimate, I adjusted each of the cost projections in 2010 constant dollars
4 by escalating them annually at an assumed rate of 2.5% per year to the year of
5 expenditure. For the 2013 Estimate, I used the actual costs for the period 2010 through
6 2012 and then similarly adjusted the cost projections in 2013 constant dollars for the
7 period 2013 through 2023 by 2.5% annually to the year of expenditure.

8

9 Q. How does the 2013 Estimate compare with the 2010 Estimate?

10 A. The 2010 Estimate projected a total cost (including escalation) of \$184.9 million over
11 the 2010-2023 period. The combination of actual costs in 2010-2012 with the 2013
12 Estimate's forecast for 2013-2023 totals \$188.1 million, which is an increase of \$3.2
13 million. Thus, on a comparable basis (i.e., comparing the portions of the two
14 estimates covering the same period – 2010 to 2023), the 2013 Estimate is very close to
15 the 2010 Estimate; differing by less than 2 percent. Extending Yankee's operations to
16 2033 increases the 2013 Estimate (including escalation) to \$334.8 million, which is an
17 increase of \$146.7 million.

18

19 Q. What accounts for the difference between the total amount of the 2013 Estimate and
20 the 2010 Estimate?

21 A. The 2013 Estimate total of \$334.8 million differs from the 2010 Estimate's projection
22 of \$184.9 million for a number of reasons. The primary reason for the difference is
23 that, based on DOE's delays in removing the spent fuel and GTCC waste, Yankee's

1 operations are projected to extend an additional 10 years to 2033. Other reasons for
2 the difference include the capital costs associated with new security requirements
3 expected to result from regulation changes being considered by the NRC, and the
4 incorporation of the new “site specific” ISFSI D&D cost estimate prepared by an
5 independent third-party, as required by recently adopted NRC regulation. As I will
6 discuss, other cost categories also changed, with some increasing and some
7 decreasing.

8 I discuss each specific cost category below. First, I address the various
9 activities and cost categories associated with Yankee’s operation of the ISFSI.

10 Second, I address activities and cost categories associated with the dismantlement and
11 decontamination of the Company’s ISFSI.

12
13 **IV. NEW ESTIMATE OF ISFSI OPERATION COSTS**

14 Q. Describe the type of expenses that Yankee expects to incur for ISFSI operations over
15 the next 20 years.

16 A. ISFSI operations will continue until DOE removes the spent fuel and GTCC waste,
17 allowing for the decommissioning of the ISFSI. Yankee expects that the ISFSI
18 operating costs will continue to cover a number of categories, including payments for
19 the storage of wet fuel at the General Electric facility in Morris, Illinois (“GE
20 Morris”), and costs for insurance, labor, security, materials and supplies,
21 miscellaneous expenses, outside services, property taxes, regulatory fees, rentals and
22 leases and utilities.

1 Q. Describe the GE Morris payments.

2 A. Yankee pays General Electric for the storage of spent fuel in 82 fuel assemblies at the
3 GE Morris wet fuel storage facility in Morris, Illinois. The 2013 Estimate, like the
4 2010 Estimate, includes the costs that Yankee pays to General Electric for storing
5 these fuel assemblies. The 2013 Estimate assumes that the DOE will pick up the spent
6 fuel stored at the GE Morris facility consistent with the Standard Contract. Under the
7 Standard Contract, the DOE must remove fuel according to a schedule which grants
8 priority to the oldest fuel. The fuel's age is determined by the date of discharge from
9 the reactor. Thus, the Company assumes that DOE will remove the spent fuel being
10 stored at the GE Morris facility and terminate this category of costs at approximately
11 the same time that it removes the spent fuel from Yankee's ISFSI. The 2013 Estimate
12 projects these costs to be \$44,958,597. The new estimate is similar to the 2010
13 Estimate. In the 2010 Estimate, these costs were projected to be \$24,212,421 for the
14 period 2010-2023. In the 2013 Estimate, the costs are now projected to be slightly
15 lower at \$24,198,180 for that same period.

16

17 Q. Explain how Yankee projected insurance costs.

18 A. The insurance cost estimate is based on an updated estimate of costs provided by
19 Yankee's insurance consultant, Marsh USA Inc., derived from the current contractual
20 terms. The total estimated cost of insurance for the period 2013-2033 is \$15,802,802.
21 The levels of insurance that Yankee procures for prudent business operations and
22 regulations have not materially changed since the 2010 Estimate. However, due to
23 more favorable insurance rates, there has been a significant reduction in projected

1 insurance costs. Namely, in the 2010 Estimate insurance costs were projected to be
2 \$18,352,023 for the period 2010-2023. As a result of the more favorable rates and
3 incorporating actual costs for 2010-2012, such costs are now projected to be only
4 \$8,262,323 for that same period. Based on my review, the new estimate of insurance
5 costs is reasonable.

6
7 Q. Please explain the labor estimate.

8 A. The labor estimate consists of salaries and benefits to staff working in the areas of the
9 long term operations of the ISFSI (excluding contractor security staff, which is
10 discussed separately below). In preparing the estimate, Yankee reviewed the positions
11 held by current staff, and determined whether it plans to fill each position in the future
12 with Company employees or with contracted workers. The Company then forecasted
13 future staffing needs based on activities scheduled to occur during each year, and
14 determined the cost of each position based on existing labor rates. That review of
15 staffing needs revealed a need to add additional resources to manage Yankee's
16 compliance with regulatory requirements, especially those enforced by the NRC.
17 Experience has shown that the shift from power production to spent fuel storage
18 operations has not reduced the regulatory requirements with which Yankee must
19 comply to the extent projected in the 2010 Estimate. The 2013 Estimate includes
20 additional positions that the Company determined it needed to fill to maintain the
21 regulatory authorizations it needs to continue to operate the ISFSI and eventually to
22 decommission it. Namely, Yankee added three program managers and a licensing
23 engineer. All work part-time for Yankee and its sister companies, and each of the

1 program managers has specific areas of expertise (e.g., security and corrective action).
2 Yankee also added a Canister Relicensing Project Manager to manage the planning,
3 engineering and licensing activities to support the license renewal for Yankee and its
4 sister companies, and to support industry efforts to implement Consolidated Interim
5 Storage.

6 The costs of each non-contractor position reflect the costs of employee
7 benefits. Yankee's employee benefits include health and medical, dental and life
8 insurance, as well as compensation costs such as payroll taxes. Medical and dental
9 insurance costs are based on contracted costs for each type of insurance, with
10 anticipated medical trends. Other benefits have been calculated based on the
11 percentage of payroll that such benefits have historically represented.

12 Based on this review, the 2013 Estimate for Labor - Non-Manual is
13 \$45,467,711 for the period 2013-2033. This category of costs has increased from the
14 2010 Estimate as a result of increased labor costs of operating and managing the
15 ISFSI. In the 2010 Estimate labor costs were projected to be \$16,034,062 for the
16 period 2010-2023. As a result of the increase in labor costs and incorporating actual
17 costs for 2010-2012, such costs are now projected to be \$23,872,546 for that same
18 period.

19
20 Q. Describe the estimate for the security costs, including new NRC regulations expected
21 to increase security costs.

22 A. The security category includes the costs associated with "Labor – Security," which
23 includes guarding the ISFSI through Yankee's current vendor, G4S. In preparing the

1 2013 Estimate, Yankee calculated an estimate for a portion of the costs in this
2 category based on review of the contract, rates under the contract, and the work that
3 remains to be performed under the contract. Based on this review, Yankee estimates
4 the costs for this category to be \$73,416,711 for the period 2013-2033. Also, because
5 there have been no material changes to rates or scope of work, the 2013 Estimate is
6 comparable to the 2010 Estimate with respect to Labor – Security costs. In the 2010
7 Estimate, these costs were projected to be \$35,376,767 for the period 2010-2023. In
8 the 2013 Estimate, the costs are now projected to be \$36,390,622 for that same period.

9 In addition to the Labor – Security costs, the 2013 Estimate projects an
10 increase in the costs of maintaining security at Yankee’s ISFSI in compliance with
11 regulations that the NRC’s is considering in a pending rulemaking proceeding. The
12 NRC has initiated a rulemaking to revise the existing security requirements in its
13 regulations that apply during the storage of spent nuclear fuel and high-level waste at
14 ISFSIs. The NRC’s specific objectives for this rulemaking are to: (i) update the ISFSI
15 security regulations to improve the consistency and clarity to reflect current NRC
16 thinking on security requirements, and to incorporate lessons learned from recent
17 security inspections and evaluations conducted; (ii) to make generically applicable
18 requirements similar to those imposed on ISFSI licensees by the post-9/11 security
19 orders; and (iii) to update ISFSI security regulations using a risk-informed and
20 performance based structure. *See Draft Technical Basis for a Rulemaking to Revise*
21 *the Security Requirements for Facilities Storing Spent Nuclear Fuel and High-Level*
22 *Radioactive Waste, Revision 1, NRC-2009-0558 (Dec. 16, 2009). These new*
23 regulations are expected to impose new security requirements on Yankee’s ISFSI

1 operations. In the 2013 Estimate, Yankee has included the projected costs of these
2 new regulations in the “Outside Services - ISFSI OP” category, and estimates these
3 costs to be \$21,648,819 for the period 2013-2033. In the 2010 Estimate, these costs
4 were projected to be \$4,439,501 for the period 2010-2023. In the 2013 Estimate, as a
5 result of the new security requirements and including actuals for 2010-2012, the costs
6 are now projected to be \$14,581,327 for that same period.

7
8 Q. Describe the estimate for the materials and supplies category.

9 A. The materials and supplies category is drawn from the projected costs for consumables
10 to be used during the remainder of operations onsite. Such costs include, among other
11 things, fuel for machinery, office supplies, and computer supplies. Costs are based on
12 a projection of future costs on an item-by-item basis. In the 2013 Estimate, these costs
13 are projected to be \$6,378,875 for the period 2013-2033. They have remained
14 relatively static from the 2010 Estimate. In the 2010 Estimate, these costs were
15 projected to be \$4,443,610 for the period 2010-2023. In the 2013 Estimate, the costs
16 are now projected to be \$4,619,594 for that same period.

17
18 Q. Explain the miscellaneous expenses identified in the 2013 Estimate.

19 A. This category consists of travel, meals, operation and maintenance of vehicles,
20 equipment, and rentals and leases. The Company based its 2013 Estimate of these
21 costs on actual costs prescribed by its contracts over the period until 2033, or on input
22 from the provider of the service or responsible Company manager. The 2013 Estimate
23 for these costs is \$2,676,206 for the period 2013-2033. The estimate of these costs has

1 increased since the 2010 Estimate. In the 2010 Estimate, these costs, including
2 rentals, leases, and vehicle expenses, were projected to be \$1,065,318 for the period
3 2010-2023. In the 2013 Estimate, the costs are now projected to be \$1,848,943 for
4 that same period.

5
6 Q. Explain how Yankee projected the costs of outside legal services.

7 A. The forecast for the cost of legal services was provided by Company's counsel, with
8 input from our outside litigation attorneys. It accounts for anticipated legal matters
9 such as the DOE litigation and upcoming rate cases. The 2013 Estimate of these costs
10 is \$8,539,248. Compared to the 2010 Estimate, there is a significant reduction in the
11 estimate for these costs because of improved efficiencies associated with the DOE
12 litigation process. Namely, in the 2010 Estimate, these costs were projected to be
13 \$14,893,971 for the period 2010-2023. In the 2013 Estimate, as a result of the
14 streamlined DOE litigation processes and taking into account actual costs for 2010-
15 2012, the costs are now projected to be \$9,353,576 for that same period. Of course,
16 delays in current litigation, or unforeseen litigation arising in the future could change
17 this portion of the estimate.

18
19 Q. Explain how Yankee projected the costs of outside services for administrative and
20 general for the 2013 Estimate.

21 A. Yankee estimated the administrative and general ("A&G") costs required to support
22 operation of the Company during the fuel storage period by projecting its current
23 costs, and attempting to identify any changes that would increase the level of these

1 costs (when adjusted for inflation). Yankee based its 2013 Estimate of these costs on
2 actual costs prescribed by its contracts over the period until 2033, or on input from the
3 provider of the service or responsible Company manager. Yankee also compared its
4 estimate of A&G costs with the A&G costs incurred by Maine Yankee and Yankee
5 Atomic in connection with a similar type and scope of work. The 2013 Estimate of
6 these costs is \$15,529,196. The new estimate is not significantly higher than the 2010
7 Estimate. In the 2010 Estimate, these costs were projected to be \$9,758,118 for the
8 period 2010-2023. In the 2013 Estimate, the costs are now projected to be
9 \$10,418,981 for that same period.

10
11 Q. Explain how Yankee projected the cost of property taxes.

12 A. The Company pays property taxes to the Town of Haddam, Connecticut, which is the
13 location of the ISFSI. Yankee is subject to the town's general property tax assessment
14 and tax rates, which are heavily affected by Yankee's status as the only significant
15 taxpaying corporate entity in Haddam. The Company assumed in the 2013 Estimate
16 that property taxes will continue for the remainder of the ISFSI's lifetime, and
17 estimates these costs to total \$32,457,306 for the period 2013-2033. Obviously, such
18 things as major changes in property valuations or tax rates could cause this estimate to
19 change. The property tax estimate in the 2010 Estimate was significantly higher than
20 the current estimate. In the 2010 Estimate, these costs were projected to be
21 \$25,368,201 for the period 2010-2023. In the 2013 Estimate, the costs are now
22 projected to be \$15,226,135 for that same period. This reduction reflects the fact that

1 Yankee now has more experience with the property taxes levied by the Town of
2 Haddam after the completion of physical decommissioning.

3

4 Q. Explain how Yankee estimated its costs for regulatory fees.

5 A. Regulatory Fees consist of the amounts paid to the federal and state agencies that
6 oversee Yankee's activities, including FERC, the NRC, the Connecticut Department
7 of Public Utility Control, and the Connecticut Department of Energy and
8 Environmental Protection. The 2013 Estimate projects \$18,191,136 in regulatory fees
9 for the period 2013-2033. These costs have remained relatively static. In the 2010
10 Estimate, these costs were projected to be \$9,216,037 for the period 2010-2023. That
11 projection has increased only slightly in the 2013 Estimate to \$10,124,028 for that
12 same period, as there have not been material changes in the level of these fees.

13

14 Q. Describe the costs that appear in the rentals and leases category in the 2013 Estimate.

15 A. This category consists of the costs Yankee incurs to obtain items such as office space,
16 furniture, and equipment. Under the 2013 Estimate, Yankee projects that its costs for
17 rentals and leases will be insignificant, based on current contracts and projected needs.
18 Consequently, Yankee does not track these costs separately. Instead, they are included
19 in the miscellaneous expenses category for purposes of the 2013 Estimate. The 2010
20 Estimate projected \$127,032 in rentals and leases costs for the period 2010-2023.

21

1 Q. Please explain how Yankee projected utility costs.

2 A. Similar to rentals and leases, utility costs are based on current contracts and projected
3 needs for water, electricity and telephone service. The Company estimates these costs
4 to total \$1,630,996 for the period 2013-2033. The estimate for utility costs in the 2010
5 Estimate was significantly higher than the current estimate. In the 2010 Estimate,
6 these costs were projected to be \$2,398,904 for the period 2010-2023. In the 2013
7 Estimate, the costs are now projected to be \$946,339 for that same period. This
8 reduction is due primarily to a reduced estimate of Yankee's purchased power costs.

9
10 Q. Does the 2013 Estimate include a contingency allowance? If so, please describe the
11 contingency allowance.

12 A. Yes. The 2013 Estimate includes a contingency allowance. The line item cost
13 estimates described elsewhere in this testimony consider work performed under
14 normal conditions, with no complications such as inclement weather or equipment
15 problems, among others. A contingency calculation is necessary to allow for the likely
16 occurrence of such disruptions. Contingency factors in the 2013 Estimate were
17 derived from Yankee's experience and assessments of future risk, and applied to total
18 costs. Similar to the 2010 Estimate, Yankee used a 5% contingency for ISFSI
19 operations and a 10% contingency for the final three years of the estimate which
20 includes ISFSI D&D. The 2013 Estimate includes a contingency allowance of
21 \$18,938,031 for the period 2013-2033. The new contingency allowance reflects a
22 slight increase from the 2010 Estimate. The contingency allowance in the 2010

1 Estimate was \$9,285,135 for the period 2010-2023, and in the 2013 Estimate it is
2 \$10,123,779 for that period.

3 It is important to remember, however, that contingency factors such as the one
4 included in the 2013 Estimates can only account for minor difficulties, delays and
5 disruptions. That is, they reflect the certainty that any project involving a facility's
6 operation and dismantlement over a lengthy time period will encounter circumstances
7 that cause costs to deviate from projected levels, even though those specific
8 circumstances cannot be predicted or identified in advance. Contingency allowances
9 cannot address the larger uncertainties discussed by Ms. Pizzella or Mr. Norton, such
10 as general inflation, extended delays by the DOE, or industry-wide regulatory
11 changes.

12
13 **V. NEW ESTIMATE OF THE ISFSI D&D COSTS**

14 Q. What are the tasks associated with ISFSI D&D?

15 A. After DOE removes the spent fuel and GTCC waste, it will be necessary for Yankee to
16 dismantle and decontaminate the ISFSI. D&D tasks include engineering, site
17 preparations, ISFSI remediation, removal of major equipment, demolition of
18 remaining portions of the waste containment structure, disposal of low level waste,
19 decontamination and environmental restoration of the site, conducting a final radiation
20 survey, preparation of a final dismantling program report for the NRC, and general
21 corporate, regulatory and administrative costs.

22

1 Q. How were the costs of these D&D activities projected for purposes of the 2013
2 Estimate?

3 A. The NRC now requires each licensee operating an ISFSI to commission a third-party
4 to prepare an estimate of the cost of completing the ISFSI D&D. Yankee
5 commissioned such an estimate, which was completed by Knight Cost Engineering
6 Services, LLC (“KCES”) in December of 2012. The D&D estimate is provided as
7 Exhibit No. CY-303. The D&D estimate was prepared in accordance with the
8 guidelines provided in Regulatory Guide 1.202 and NUREG-1713. In addition, it
9 takes into account the guidelines identified in NUREG-17 57. These are NRC
10 regulations and guidelines addressing the requirements for the preparation of ISFSI
11 D&D cost estimates.

12 Two types of costs were determined in the D&D estimate: (i) activity costs;
13 and (ii) level of effort costs. All costs were current to July, 2012. The activity costs
14 were developed utilizing a unit cost factor approach. Site material quantities for
15 concrete, steel and equipment were developed from site specific drawings.
16 Productivity factors were applied to these quantities to determine activity durations.
17 Labor crews were developed and applied to the material quantities to determine labor
18 costs and person-hours. The activity durations were used to develop a project
19 schedule. The level of effort costs, such as equipment rental and General Contractor
20 (“GC”) staff, were developed based on the project schedule duration. A rental
21 equipment file was developed for the construction effort. The GC staff was assumed
22 to be on-site for the duration of the project.

23

1 Q. What assumptions were used in the preparation of the D&D estimate?

2 A. KCES used a number of assumptions in preparing the D&D estimate. These
3 assumptions, which were based on the most current decommissioning methodologies
4 and site-specific considerations, include the following. Component quantities were
5 developed from actual plant listings. Concrete volumes were developed from plant
6 drawings. The oversight staff was assumed to be the similar size and configuration as
7 it is today, with staff positions and costs at July, 2012 salary and benefit levels.
8 Subcontractor base labor rates and fringe benefits were taken from the 2012 R. S.
9 Means Heavy Construction Cost Data and adjusted to Connecticut based on the City
10 Cost Indexes for Hartford, CT. Activity labor costs did not include any allowance for
11 delays between activities, nor was there any cost allowance for craft labor retained on-
12 site while waiting for work to become available. All skilled laborers will be supplied
13 locally and hired by the GC. Transportation costs were based on actual mileage from
14 Yankee to the Studsvik processing facility in Memphis, Tennessee. The ISFSI
15 concrete pad, Vertical Concrete Cask (“VCC”) exterior concrete and VCC liner steel
16 were assumed to be Class A waste to be disposed of at the Studsvik processing facility
17 in Tennessee. A disposal rate of \$0.13 per pound was used, based on information
18 provided by Studsvik. A number of buildings will be disposed of as clean waste in a
19 local landfill at a disposal rate of \$91.80 per ton, based on information provided in the
20 2012 R. S. Means Building Construction Cost Data. All Multi Purpose Canisters
21 containing both spent fuel and GTCC waste will have been removed from site prior to
22 the start of D&D activities. Property taxes were included at the cost of \$1,400,000 per
23 year, and fees were included at the current cost of \$650,000 per year. Insurance and

1 legal costs were included at the current cost of \$758,073 per year and \$200,000 per
2 year, respectively. The D&D activities will be performed under the current
3 regulations. The removal of the pad and concrete overpacks will be performed in
4 Tyvek coveralls. No subsurface material is assumed to require remediation regarding
5 radionuclides.

6
7 Q. What was the total cost of the D&D estimate?

8 A. KCES determined that the total D&D cost including contingency is \$19.4 million,
9 which includes \$17.7 million for radiological removal and \$1.8 million for non-
10 radiological removal.

11
12 Q. How did you use this third-party ISFSI D&D estimate in connection with the
13 preparation of the overall 2013 Estimate?

14 A. I used the KCES estimate of the GC costs, which are the costs of the hands-on D&D
15 activities. These costs total \$10,540,188, and represent approximately two-thirds of
16 the total KCES D&D estimate. The remaining costs, which are not related to the GC
17 costs, basically comprise A&G and other corporate costs. These costs are represented
18 differently in the overall estimate of decommissioning costs. Consequently, I prepared
19 my own projections of those costs, and relied on the KCES estimate as a check on and
20 support for my projections. With respect to these costs, my projections and the KCES
21 estimate are essentially identical.

22

1 **VI. ESCALATION RATE**

2 Q. You explained earlier that the NDT funding analysis takes into account escalation in
3 decommissioning costs after 2013. Do you have a recommendation regarding a
4 reasonable escalation rate?

5 A. Yes. I recommend that the NDT funding analysis use an escalation rate of 2.5% per
6 year. This is the same escalation rate that was applied to the 2010 Estimate to develop
7 the 2010 funding schedule.

8

9 Q. What is your basis for this recommendation?

10 A. My recommendation to use 2.5% as the annual escalation rate in the Yankee funding
11 analysis is based on several factors. First, a significant portion of the Company's costs
12 of ISFSI operations are incurred under long-term contracts (i.e., contracts with a
13 duration of 3 to 5 years) under which the pricing reflects 2.5% annual escalation.
14 Unlike projections of general inflation rates, which can be open to debate, these
15 contracts leave no doubt that a significant portion of Yankee's costs will escalate at a
16 2.5% annual rate. This fact makes it reasonable and appropriate to use a 2.5% annual
17 inflation assumption in Yankee's decommissioning funding model. Further, the 2.5%
18 escalation rate falls below the long-term CPI average of 3.4% since 1980, as shown in
19 Exhibit No. CY-302.

20

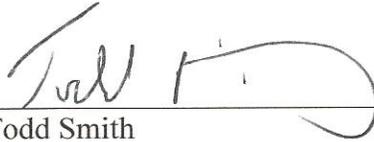
21 Q. Thank you. I have no further questions at this time.

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Connecticut Yankee Atomic Power Company) Docket No. ER13-__-000

DECLARATION OF TODD SMITH

I depose and state under penalty of perjury that the foregoing exhibits were prepared or assembled by me or under my direction, and that I have read the foregoing questions and answers labeled as my testimony; that if asked the same questions my answers in response would be as shown; and that the facts contained in my answers are true to the best of my knowledge, information, and belief.



Todd Smith

EXHIBIT No. CY-301

2013 DECOMMISSIONING COST ESTIMATE

CONNECTICUT YANKEE ATOMIC POWER COMPANY
2013 DECOMMISSIONING COST ESTIMATE
(Escalated 2013 Dollars)

FERC Summary	Costs 2013 - 2033
Contingency	\$18,938,031
GE Morris	\$44,958,597
Insurance	\$15,802,802
Labor - Non-Manual	\$45,467,711
Labor - Security	\$73,416,711
Legal Services	\$5,928,240
Materials & Supplies	\$6,378,875
Miscellaneous	\$2,676,206
Outside Services - A&G	\$15,529,196
Outside Services - Fuel Loading	\$6,405,089
Outside Services - ISFSI OP's	\$21,648,819
Outside Services - Legal	\$8,539,248
Outside Services - NON-RAD D&D of ISFSI	\$1,518,335
Outside Services - RAD D&D of ISFSI	\$15,331,738
Property Taxes	\$32,457,306
Regulatory Fees	\$18,191,136
Rentals & Leases	\$0
Utilities	\$1,630,996
Grand Total	\$334,819,038

**2013 - 2033 Summary
(UNESCALATED)**

FERC Summary	Data										
	Sum of 2013	Sum of 2014	Sum of 2015	Sum of 2016	Sum of 2017	Sum of 2018	Sum of 2019	Sum of 2020	Sum of 2021	Sum of 2022	Sum of 2023
Contingency	\$535,179	\$510,244	\$644,534	\$671,976	\$686,227	\$532,227	\$557,227	\$550,240	\$532,227	\$532,227	\$532,227
GE Morris	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000
Insurance	\$658,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073
Labor - Non-Manual	\$1,710,508	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800
Labor - Security	\$2,355,500	\$2,355,500	\$2,591,050	\$2,850,155	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171
Legal Services	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Materials & Supplies	\$105,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000
Miscellaneous	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500
Outside Services - A&G	\$537,000	\$717,000	\$827,250	\$1,467,000	\$1,467,000	\$467,000	\$467,000	\$577,250	\$467,000	\$467,000	\$467,000
Outside Services - Fuel Loading	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Outside Services - ISFSI OP's	\$547,000	\$662,000	\$2,752,000	\$2,652,000	\$2,652,000	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000
Outside Services - Legal	\$780,000	\$80,000	\$330,000	\$80,000	\$80,000	\$80,000	\$580,000	\$330,000	\$80,000	\$80,000	\$80,000
Outside Services - NON-RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Outside Services - RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Property Taxes	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000
Regulatory Fees	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000
Utilities	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000
Grand Total	\$11,238,760	\$10,715,117	\$13,535,207	\$14,111,504	\$14,410,771	\$11,176,771	\$11,701,771	\$11,555,033	\$11,176,771	\$11,176,771	\$11,176,771

**2013 - 2033 Summary
(UNESCALATED)**

FERC Summary											Sum of Total
	Sum of 2024	Sum of 2025	Sum of 2026	Sum of 2027	Sum of 2028	Sum of 2029	Sum of 2030	Sum of 2031	Sum of 2032	Sum of 2033	2013 - 2033
Contingency	\$532,227	\$569,727	\$532,227	\$532,227	\$532,227	\$664,727	\$544,727	\$1,329,454	\$2,168,684	\$456,177	\$14,146,941
GE Morris	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$1,760,000	\$0	\$35,200,000
Insurance	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$558,073	\$883,073	\$12,144,533
Labor - Non-Manual	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$1,726,800	\$838,200	\$35,357,908
Labor - Security	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$3,135,171	\$500,000	\$0	\$57,679,763
Legal Services	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$500,000	\$4,500,000
Materials & Supplies	\$95,000	\$95,000	\$95,000	\$95,000	\$95,000	\$2,745,000	\$95,000	\$95,000	\$95,000	\$5,000	\$4,565,000
Miscellaneous	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$100,500	\$66,500	\$2,076,500
Outside Services - A&G	\$467,000	\$467,000	\$467,000	\$467,000	\$467,000	\$467,000	\$467,000	\$467,000	\$467,000	\$356,000	\$12,486,500
Outside Services - Fuel Loading	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,150,000	\$1,909,000	\$0	\$4,059,000
Outside Services - ISFSI OP's	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000	\$572,000	\$582,000	\$78,000	\$17,933,000
Outside Services - Legal	\$80,000	\$830,000	\$80,000	\$80,000	\$80,000	\$80,000	\$330,000	\$580,000	\$580,000	\$1,030,000	\$6,330,000
Outside Services - NON-RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$949,761	\$0	\$949,761
Outside Services - RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,590,427	\$0	\$9,590,427
Property Taxes	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,200,000	\$1,918,275	\$400,000	\$25,118,275
Regulatory Fees	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$690,000	\$345,000	\$14,145,000
Utilities	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$60,000	\$1,260,000
Grand Total	\$11,176,771	\$11,964,271	\$11,176,771	\$11,176,771	\$11,176,771	\$13,959,271	\$11,439,271	\$14,623,998	\$23,855,519	\$5,017,950	\$257,542,608

**2013-2033 Summary
(ESCALATED)**

FERC Summary	Data										
	Sum of 2013	Sum of 2014	Sum of 2015	Sum of 2016	Sum of 2017	Sum of 2018	Sum of 2019	Sum of 2020	Sum of 2021	Sum of 2022	Sum of 2023
Contingency	\$535,179	\$523,000	\$677,163	\$723,645	\$757,466	\$602,166	\$646,213	\$654,062	\$648,467	\$664,679	\$681,296
GE Morris	\$1,760,000	\$1,804,000	\$1,849,100	\$1,895,328	\$1,942,711	\$1,991,278	\$2,041,060	\$2,092,087	\$2,144,389	\$2,197,999	\$2,252,949
Insurance	\$658,073	\$572,025	\$586,325	\$600,984	\$616,008	\$631,408	\$647,194	\$663,373	\$679,958	\$696,957	\$714,381
Labor - Non-Manual	\$1,710,508	\$1,769,970	\$1,814,219	\$1,859,575	\$1,906,064	\$1,953,716	\$2,002,559	\$2,052,623	\$2,103,938	\$2,156,537	\$2,210,450
Labor - Security	\$2,355,500	\$2,414,388	\$2,722,222	\$3,069,305	\$3,460,642	\$3,547,158	\$3,635,837	\$3,726,733	\$3,819,901	\$3,915,398	\$4,013,283
Legal Services	\$200,000	\$205,000	\$210,125	\$215,378	\$220,763	\$226,282	\$231,939	\$237,737	\$243,681	\$249,773	\$256,017
Materials & Supplies	\$105,000	\$97,375	\$99,809	\$102,305	\$104,862	\$107,484	\$110,171	\$112,925	\$115,748	\$118,642	\$121,608
Miscellaneous	\$100,500	\$103,013	\$105,588	\$108,228	\$110,933	\$113,707	\$116,549	\$119,463	\$122,449	\$125,511	\$128,648
Outside Services - A&G	\$537,000	\$734,925	\$869,130	\$1,579,799	\$1,619,294	\$528,368	\$541,577	\$686,169	\$568,994	\$583,219	\$597,799
Outside Services - Fuel Loading	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Outside Services - ISFSI OP's	\$547,000	\$678,550	\$2,891,320	\$2,855,914	\$2,927,312	\$647,165	\$663,345	\$679,928	\$696,926	\$714,350	\$732,208
Outside Services - Legal	\$780,000	\$82,000	\$346,706	\$86,151	\$88,305	\$90,513	\$672,622	\$392,266	\$97,472	\$99,909	\$102,407
Outside Services - NON-RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Outside Services - RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Property Taxes	\$1,200,000	\$1,230,000	\$1,260,750	\$1,292,269	\$1,324,575	\$1,357,690	\$1,391,632	\$1,426,423	\$1,462,083	\$1,498,636	\$1,536,101
Regulatory Fees	\$690,000	\$707,250	\$724,931	\$743,055	\$761,631	\$780,672	\$800,188	\$820,193	\$840,698	\$861,715	\$883,258
Rentals & Leases											
Utilities	\$60,000	\$61,500	\$63,038	\$64,613	\$66,229	\$67,884	\$69,582	\$71,321	\$73,104	\$74,932	\$76,805
Grand Total	\$11,238,760	\$10,982,995	\$14,220,426	\$15,196,547	\$15,906,794	\$12,645,490	\$13,570,466	\$13,735,303	\$13,617,810	\$13,958,255	\$14,307,211

**2013-2033 Summary
(ESCALATED)**

FERC Summary	Sum of 2024	Sum of 2025	Sum of 2026	Sum of 2027	Sum of 2028	Sum of 2029	Sum of 2030	Sum of 2031	Sum of 2032	Sum of 2033	Sum of Total 2013 - 2033
Contingency	\$698,328	\$766,220	\$733,681	\$752,023	\$770,824	\$986,791	\$828,867	\$2,073,495	\$3,466,966	\$747,500	\$18,938,031
GE Morris	\$2,309,273	\$2,367,004	\$2,426,179	\$2,486,834	\$2,549,005	\$2,612,730	\$2,678,048	\$2,744,999	\$2,813,624	\$0	\$44,958,597
Insurance	\$732,240	\$750,546	\$769,310	\$788,543	\$808,256	\$828,463	\$849,174	\$870,403	\$892,164	\$1,447,018	\$15,802,802
Labor - Non-Manual	\$2,265,711	\$2,322,354	\$2,380,413	\$2,439,923	\$2,500,921	\$2,563,444	\$2,627,530	\$2,693,219	\$2,760,549	\$1,373,488	\$45,467,711
Labor - Security	\$4,113,615	\$4,216,456	\$4,321,867	\$4,429,914	\$4,540,662	\$4,654,178	\$4,770,533	\$4,889,796	\$799,325	\$0	\$73,416,711
Legal Services	\$262,417	\$268,978	\$275,702	\$282,595	\$289,660	\$296,901	\$304,324	\$311,932	\$319,730	\$819,308	\$5,928,240
Materials & Supplies	\$124,648	\$127,764	\$130,959	\$134,233	\$137,588	\$4,074,968	\$144,554	\$148,168	\$151,872	\$8,193	\$6,378,875
Miscellaneous	\$131,865	\$135,161	\$138,540	\$142,004	\$145,554	\$149,193	\$152,923	\$156,746	\$160,664	\$108,968	\$2,676,206
Outside Services - A&G	\$612,744	\$628,063	\$643,765	\$659,859	\$676,355	\$693,264	\$710,596	\$728,361	\$746,570	\$583,347	\$15,529,196
Outside Services - Fuel Loading	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,353,266	\$3,051,823	\$0	\$6,405,089
Outside Services - ISFSI OP's	\$750,514	\$769,276	\$788,508	\$808,221	\$828,427	\$849,137	\$870,366	\$892,125	\$930,414	\$127,812	\$21,648,819
Outside Services - Legal	\$104,967	\$1,116,258	\$110,281	\$113,038	\$115,864	\$118,760	\$502,134	\$904,602	\$927,217	\$1,687,775	\$8,539,248
Outside Services - NON-RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,518,335	\$0	\$1,518,335
Outside Services - RAD D&D of ISFSI	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,331,738	\$0	\$15,331,738
Property Taxes	\$1,574,504	\$1,613,867	\$1,654,213	\$1,695,569	\$1,737,958	\$1,781,407	\$1,825,942	\$1,871,590	\$3,066,651	\$655,447	\$32,457,306
Regulatory Fees	\$905,340	\$927,973	\$951,173	\$974,952	\$999,326	\$1,024,309	\$1,049,917	\$1,076,165	\$1,103,069	\$565,323	\$18,191,136
Rentals & Leases											\$0
Utilities	\$78,725	\$80,693	\$82,711	\$84,778	\$86,898	\$89,070	\$91,297	\$93,580	\$95,919	\$98,317	\$1,630,996
Grand Total	\$14,664,892	\$16,090,614	\$15,407,302	\$15,792,484	\$16,187,296	\$20,722,616	\$17,406,203	\$22,808,446	\$38,136,630	\$8,222,496	\$334,819,038

EXHIBIT No. CY-302

COMPARISON OF 2010 AND 2013 ESTIMATE

**Connecticut Yankee
Comparison to 2010 Estimate**

Exhibit No. CY-302

Categories for FERC Summary	2010 Estimate 2010-2023 Escalated (2.5%)	2013 Estimate 2010-12 Actuals 2013-23 Escalated	Comments
Contingency	\$ 9,285,135	\$ 10,123,779	
GE Morris	\$ 24,212,421	\$ 24,198,180	
Insurance	\$ 18,352,023	\$ 8,262,323	More Favorable Insurance Rates
Labor - Non-Manual	\$ 16,034,062	\$ 23,872,546	Revised Labor Costs to Manage ISFSI's
Labor - Security	\$ 35,376,767	\$ 36,390,622	
Materials & Supplies	\$ 4,443,610	\$ 4,619,594	
Miscellaneous	\$ 938,286	\$ 1,848,943	
Outside Services - A&G	\$ 9,758,118	\$ 10,418,981	
Outside Services - DECOM	\$ 8,197,962	\$ 13,163,250	ISFSI DECOM estimate Updated in 2012
Outside Services - Fuel Loading	\$ 1,873,927	\$ 5,003,646	ISFSI Fuel loading estimate Updated in 2012
Outside Services - ISFSI OP's	\$ 4,439,501	\$ 14,581,327	2013-2023 estimate includes capital expenditures associated with pending new security regulations
Outside Services - Legal	\$ 14,893,971	\$ 9,353,576	Streamlined DOE Litigation
Property Taxes	\$ 25,368,201	\$ 15,226,135	Revised Estimate for Property taxes
Regulatory Fees	\$ 9,216,037	\$ 10,124,028	
Rentals & Leases	\$ 127,032	\$ -	
Utilities	\$ 2,398,904	\$ 946,339	Revised Estimate for Purchased Power
Grand Total	\$ 184,915,955	\$ 188,133,269	

Footnotes:

1. 2010-2012 Actuals are \$10 Million under FERC Settled Budget for the same time period

EXHIBIT No. CY-303

DECOMMISSIONING STUDY OF THE
CONNECTICUT YANKEE
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

KNIGHT COST ENGINEERING SERVICES, LLC
DECEMBER, 2012

Decommissioning Study of the Connecticut Yankee Independent Spent Fuel Storage Installation

Prepared for Connecticut Yankee Atomic Power
Company

Knight Cost Engineering Services, LLC

December, 2012

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1.0 INTRODUCTION

The purpose of this study is to identify the costs associated with the decommissioning of the Connecticut Yankee (CY) Independent Spent Fuel Storage Installation (ISFSI). This estimate includes only the structures, systems and land within the NRC licensed area. The CY ISFSI is located about three quarters of a mile from the former reactor site, tucked in a slight valley between natural ridgelines. The NAC-MPC fuel storage and transport canister system chosen by CY is licensed by the NRC for both storage and transportation.

There are 43 dry storage casks on the 100 by 200-foot, three-foot-thick concrete pad at the CY ISFSI. Forty of the casks contain the 1019 spent fuel assemblies and three casks store sections of the reactor vessel internals that are classified as Greater Than Class C (GTCC) waste. Each vertical concrete cask has a three and a half-inch steel liner surrounded by 21 inches of reinforced concrete. The entire dry storage process -- procuring materials, fabricating the fuel containers, constructing the storage facility, took approximately three years to complete.

2.0 SUMMARY

Decommissioning is the safe removal of a facility or site from service and the reduction of radioactivity to a level that permits either the release of the property for unrestricted use and NRC license termination; or a restricted release of the property and NRC license termination. This estimate includes all costs incurred to release the property for unrestricted use.

On June 17, 2011, the NRC published a final rule amending its regulations to improve decommissioning planning. The rule will become effective on December 17, 2012 and requires compliance by March 31, 2013. This rule will require licensees to report additional details in their decommissioning cost estimate. To assist in the implementation of the new rule, the NRC issued NUREG-1757, "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping and Timeliness."

NUREG-1757 does not apply to licensees under 10CFR Part 50 nor does it eliminate the need to follow Regulatory Guide 1.202 or NUREG-1713. It does provide additional information to support the development of the cost estimate. This cost estimate was prepared in accordance with the guidelines provided in RG 1.202 and NUREG-1713. In addition, it does take into account the guidelines identified in NUREG-1757.

NUREG-1757 specifies that a contingency of 25% is to be included in the estimate. This estimate takes exception to this contingency level for two reasons. First, the estimate is conservative in that the entire storage pad, concrete overpacks and overpack liners are assumed to be disposed of as potentially contaminated. Second, the CY site has recently been successfully decommissioned. Many of the key personnel involved in that project remain at the CY ISFSI. The lessons learned from that project will be incorporated in the CY ISFSI decommissioning. For this reason it is felt that a 10% contingency is adequate to cover unknown and unplanned occurrences.

The total cost including contingency is \$19.4 million, \$17.7 million for radiological removal and \$1.8 million for non-radiological removal. Table 2-1 provides a summary of costs. Cost details are provided in Appendix A

**TABLE 2-1
SUMMARY OF COSTS**

	<u>Total Cost</u>	<u>Radiological Removal \$</u>	<u>Non- radiological Removal \$</u>
Grand Total Building	\$19,432,609	\$17,681,565	\$1,751,044
Tax on General Contractor	\$718,275	\$653,552	\$64,723
General Contractor with contingency	\$11,311,421	\$10,292,165	\$1,019,255

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KCES 2012-700, Rev. 0

Site Costs with contingency	\$7,402,913	\$6,735,848	\$667,066
General Contractor	\$10,283,110	\$9,356,514	\$926,596
Site Costs	\$6,729,921	\$6,123,498	\$606,423
CY ISFSI	\$17,013,031	\$15,480,011	\$1,533,019
PERIOD DEPENDENT COSTS	\$11,132,644	\$10,129,497	\$1,003,146
1.1 CY Site Costs	\$6,729,921	\$6,123,498	\$606,423
1.1.1 Project Management	\$2,172,341		
1.1.2 Security Staff	\$1,549,507		
1.1.3 Fees	\$650,000	\$591,429	\$58,571
1.1.4 Insurance	\$758,073	\$689,764	\$68,309
1.1.5 Legal	\$200,000	\$181,978	\$18,022
1.1.6 Property Taxes	\$1,400,000	\$1,273,848	\$126,152
1.2 General Contractor	\$4,402,723	\$4,006,000	\$396,723
1.2.1 Decommissioning General Contractor	\$2,170,358		
1.2.2 Waste Packaging and Loading Crew	\$973,899		
1.2.3 Equipment & Materials	\$1,258,466		
ACTIVITIES	\$5,880,387	\$5,350,514	\$529,873
1.3 Project Engineering	\$20,139	\$18,325	\$1,815
1.3.1 Procedure Development and Review - Offsite	\$10,070		
1.3.2 Preparation of QA and Safety Documents - Offsite (in parallel with 1.2.1)	\$10,070		
1.4 Site Mobilization and General Employee Training (GET)	\$115,459	\$105,055	\$10,404
1.4.1 Site Mobilization	\$30,128		
1.4.2 General Employee Training	\$76,622		
1.4.3 Site Specific Training	\$8,709		
1.5 Site Preparation - Performed by Staff	\$16,223	\$14,761	\$1,462
1.5.1 Initial Site Survey			
1.5.2 Setup work areas			
1.5.3 Decontamination Readiness Review			
1.6 Disconnect all utilities to work areas.	\$8,112	\$7,381	\$731
1.6.1 Electrical	\$4,056		
1.6.2 Ventilation	\$2,028		
1.6.3 Piping	\$2,028		
1.7 Removal inside security fence	\$5,295,913	\$5,153,594	\$142,319
1.7.1 Remove EFF	\$5,124		\$5,124
1.7.2 Remove VCCs	\$3,324,922	\$3,324,922	\$0
1.7.2.1 Exterior Concrete	\$1,647,758	\$0	\$0
1.7.2.2 Steel liner	\$1,677,165		
1.7.3 Remove Concrete Pad	\$1,828,671	\$1,828,671	
1.7.4 Remove Security Fence, Indust. Fence, Light Towers, Intrusion Sys. and Access Rd	\$122,185		\$122,185
1.7.5 Remove walkway	\$15,010		\$15,010
1.8 Removal outside fences	\$361,313		\$361,313

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KCES 2012-700, Rev. 0

1.8.1	Diesel Generator	\$5,391		\$5,391
1.8.2	ISFSI Support Building	\$94,127		\$94,127
1.8.3	SAS Building	\$46,962		\$46,962
1.8.4	Septic System	\$23,298		\$23,298
1.8.5	Pumphouse	\$15,568		\$15,568
1.8.6	Power to SAS	\$6,019		\$6,019
1.8.7	Conduit and wire - SAS to pad	\$88,249		\$88,249
1.8.8	Remove road inside licensed area	\$61,119		\$61,119
1.8.9	Remove vehicle barriers	\$20,581		\$20,581
1.9	Final Site Survey Structure gone - By DGC Staff	\$25,000	\$22,747	\$2,253
1.9.1	Prepare Final Status Survey Plan			
1.9.2	Soil Sampling			
1.9.3	Direct Survey			
1.9.4	Sampling Analysis			
1.9.5	Prepare Final Status Survey Report			
1.10	Orise Site Release Confirmation			
1.11	Outside areas	\$6,740		\$6,740
1.11.1	Backfill, grade and seed	\$6,740		\$6,740
1.12	Demolition Crew Demobilization	\$21,419	\$19,489	\$1,930
1.13	Final Project Report - Offsite	\$10,070	\$9,162	\$907

3.0 DECOMMISSIONING COST ESTIMATING APPROACH

Two types of costs were determined in this estimate: activity costs and level of effort costs. The activity costs were developed utilizing a unit cost factor approach. Site material quantities for concrete, steel and equipment were developed from site specific drawings. Productivity factors were applied to these quantities to determine activity durations. Labor crews were developed and applied to the material quantities to determine labor costs and person-hours. The activity durations were used to develop a project schedule.

The level of effort costs such as equipment rental and the General Contractor (GC) staff were developed based on the project schedule duration. A rental equipment file was developed for the construction effort. The GC staff is assumed to be on-site for the duration of the project. The Oversight staff cost is another level of effort cost that is included in the cost estimate.

Bulk removal of the storage pad and concrete storage casks is assumed to be performed using an excavator with a hydraulic hammer attachment. The steel liner will be segmented utilizing torch cutters. All of this waste will be trucked off-site for processing. This leads to a large disposal volume; however, at a lower rate for bulk processing than for direct burial. In addition, there will be far less characterization and iterative decontamination. Clean structures will be demolished using mechanical means and disposed of at a local landfill.

In addition to the removal labor there is a dedicated waste packaging crew included in this estimate. This crew will consolidate, package and prepare containers for transportation. The waste packaging is estimated to remain on site for the duration of the project. This crew consists of 2 laborers; 1 Health Physics Technician; 1 Equipment Operator and 1 Foreman.

4.0 ASSUMPTIONS

Following is a list of assumptions developed by KCES in completing this study. These assumptions are based on the most current decommissioning methodologies and site-specific considerations.

1. **Component quantities** were developed from actual plant listings.
2. **Concrete volumes** were developed from plant drawings.
3. **The oversight staff** is assumed to be the similar size and configuration as it is currently.
4. **The oversight staff positions and costs** were supplied by the Company and represent July, 2012 salary and benefit data.
5. **Subcontractor base labor rates and fringe benefits** were taken directly from the 2012 R. S. Means Heavy Construction Cost Data and adjusted to Connecticut based on the City Cost Indexes for Hartford, CT.
6. **Activity labor** costs do not include any allowance for delays between activities, nor is there any cost allowance for craft labor retained on-site while waiting for work to become available.
7. All **skilled laborers** will be supplied locally and hired by the Decommissioning General Contractor (DGC).
8. The cost for **Utility personnel** assisting the DGC to develop decommissioning activity specifications is included in the Utility Staff costs.
9. **The separate DGC staff salaries**, including overhead and profit, were determined by KCES.
10. **Transportation** costs are based on actual mileage from CY to Memphis, TN processing facility utilized in the estimate.
11. **The ISFSI Concrete Pad, VCC exterior concrete and VCC liner steel** are assumed to be Class A waste. This waste will be disposed of at the Studsvik processing facility in Tennessee. A disposal rate of \$0.13 per pound has been used in this estimate and is based on information provided by Studsvik.
12. **The following buildings are disposed of as Clean waste** in local landfill. A disposal rate of \$91.80 per ton has been used in this estimate and is based on information provided in the 2012 R. S. Means Building Construction Cost Data.

Remove Security Fence, Indust. Fence, Light Towers, Intrusion Sys. and Access Rd Walkway

Electrical Equipment Enclosure
Diesel Generator
ISFSI Support Building
Security Alarm Station
Septic System
Pumphouse
Power to SAS
Conduit and wire - SAS to pad
Road inside licensed area
Vehicle barriers

13. **All costs** used in these calculations were current on July, 2012.
14. The costs of all **required safety analyses and safety measures** for the protection of the general public, the environment, and decommissioning workers are included in the cost estimates.
15. It is assumed that all **MPCs containing both spent fuel and GTCC will have been removed from site** prior to the start of decommissioning.
16. **Property taxes** are included in the estimate at the current cost of \$1,400,000 per year.
17. **Fees** are included in the estimate at the current cost of \$650,000 per year.
18. **Insurance** costs are included in the estimate at the current cost of \$758,073 per year.
19. **Legal** costs are included in the estimate at the current cost of \$200,000 per year.
20. The decommissioning will be performed under the **current regulations**.
21. Removal of the pad and concrete overpacks will be performed in Tyvek coveralls. **Productivity rates** have been adjusted to account for this.
22. No **subsurface material** is assumed to require remediation regarding radionuclides. This assumption is justified because: 1) the ISFSI area was confirmed to be clean of radiological contaminants prior to the construction of the ISFSI; 2) the ISFSI area will be maintained clean of loose radiological contaminants during the storage period; 3) the irradiated fuel and GTCC waste are stored in sealed canisters; 4) nuclear activation of the VCCs, VCCs liners, and ISFSI pad are anticipated; the activation products will remain fixed during the storage period; and 5) if contamination of subsurface material occurs during decommissioning activities, the contamination is expected to remain below the decommissioning criteria of 25 millirem per year Total Effective Dose Equivalent.

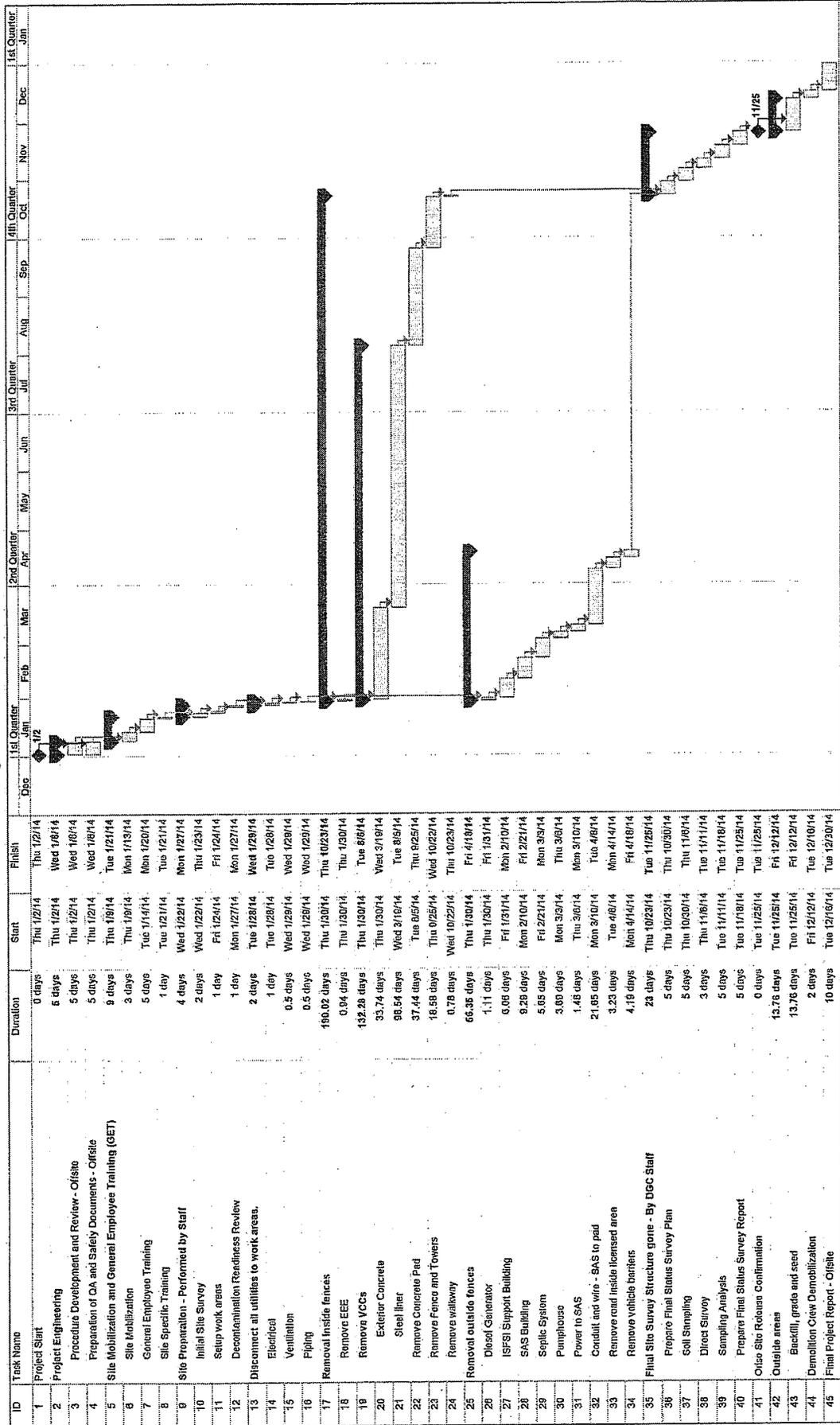
5.0 SCHEDULE

A scenario-specific schedule has been developed for estimate.

Activity durations were determined based on the unit cost factor approach. Plant material inventory quantities were developed from site specific material. Unit rates for cost, man hours and schedule hours were applied to the material quantities. From this calculation the removal or decontamination cost, total man hours and total schedule hours were determined for an activity. The schedule hours are then entered into the schedule to determine project duration. Two work crews are assumed for the concrete pad and concrete overpacks. All other work was assumed to be performed by one crew. Work outside of the security fence will be performed in parallel with the work inside the fence. The total project duration is 11.93 months.

Figure 5-1 provides the detailed decommissioning schedule.

Figure 5-1
Project Schedule



6.0 PROJECT MANAGEMENT

There are three components to project management during decommissioning, Oversight Staff (staff), Decommissioning General Contractor Staff (DGC) and Security. The person levels for each are identified below.

6.1 OVERSIGHT STAFF

The staff size is currently at a level of 18 and is assumed to be maintained at this level and at a similar configuration during the decommissioning. In addition, one final status survey resource will be added and one licensing person will be added to assist in the decommissioning. The staff will provide DGC oversight as well as maintain license compliance. Table 7-1 provides a summary of this staff.

**TABLE 6-1
OVERSIGHT STAFF**

<u>Staff</u>	<u>Number</u>
President	1
Cask Relicensing Project Manager	1
Workers Concerns Manager	1
Business Manager	1
ISFSI Manager	2
ISFSI QA Manager	1
Director Government Relations	1
General Counsel	1
Business Administrator	1
Treasurer	1
Accountant	1
Benefits Manager	1
IT Services	1
ISFSI Operations Specialist	2
Program Manager	1
ISFSI Administrator	1
Licensing Engineer	1
Security Manager	<u>1</u>
	20

6.2 DECOMMISSIONING GENERAL CONTRACTOR

The DGC will be responsible for all of the physical work. The staff will oversee the work crews., schedule work and supply HP support. The DGC will be responsible for finishing the project on time and on budget. Table 7-2 provides a summary of the DGC staff.

TABLE 6-2
DGC STAFF

<u>Position</u>	2012 Base <u>Salary</u>	Person <u>Level</u>
Project Superintendent	\$148,000	1.00
QA Auditor/Inspector	\$70,000	1.00
Health & Safety Supervisor	\$117,000	1.00
Packaging/Shipping Specialist	\$70,000	1.00
Cost Control Accountant	\$55,000	1.00
Scheduler II	\$60,000	1.00
Demolition Specialist	\$86,000	1.00
Industrial Safety	\$86,000	1.00
Engineering Supervisor	\$117,000	1.00
Project Supervisor	\$79,000	1.00
Decontamination Tech	\$55,000	2.00
Instrumentation Tech	\$55,000	1.00
Tool Crib Attendant	\$43,000	<u>1.00</u>
		14.00

6.3 SECURITY

Once spent fuel has been removed from the site the security force will be significantly reduced. This estimate assumes a force of 13 guards and one manager. This will allow a security person level of 5 guards during work time and two guards all other times. The guard force was assumed to consist of various levels of guards and the rate used has been adjusted accordingly.

7.0 References

1. R.S. Means, Inc, *Building Construction Cost Data*, Kingston, Massachusetts, 2012.
2. Regulatory Guide 1.202, "Standard Format and Content of Decommissioning Cost Estimates for Nuclear Power Reactors"
3. NUREG-1713, "Standard Review Plan for Decommissioning Cost Estimates for Nuclear Power Reactors"
4. NUREG-1757, "Consolidated Decommissioning Guidance, Financial Assurance, Recordkeeping and Timeliness"

APPENDIX A

