ATTACHMENT F

TESTIMONY OF MR. TODD SMITH
AND
ASSOCIATED EXHIBITS

EXHIBIT No. YA-300

DIRECT TESTIMONY OF
MR. TODD SMITH

YANKEE ATOMIC ELECTRIC COMPANY

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Yankee Atomic Electric Company) Docket No. ER_____

DIRECT TESTIMONY OF TODD SMITH

I. INTRODUCTION

Q. Please state your name and business address.

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

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

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

Q. Please summarize your educational and professional background.

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

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

Q. Have you previously testified before a regulatory commission?

A. Yes. I presented testimony before this Commission on behalf of the Company in Docket Nos. ER11-109-000 and ER06-249-000. I also presented testimony on behalf of Maine Yankee in Docket Nos. ER08-1356-000 and ER04-55-000, and on behalf of Connecticut Yankee in Docket Nos. ER11-101-000 and ER04-981-000.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

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

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

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

Q. Can you summarize your testimony?

A. The 2013 Estimate is divided into two components: ISFSI operations and ISFSI D&D. It projects a total cost of $225.4 million for storing spent nuclear fuel and high-level waste and ISFSI D&D for the 2013 to 2033 period as shown in Exhibit No. YA-301. This total compares favorably to Yankee's previous estimate of the same costs, which was performed in 2010 (the "2010 Estimate"), when the equivalent portions of the two estimates are compared. The 2010 Estimate projected a total cost (including escalation) of $122 million for the period 2010-2022, as shown in Exhibit No. YA-

302. As I will explain, the 2013 Estimate covers a longer period, based on the projected extension of the period during which Yankee will have to operate the ISFSI. However, the two estimates can be compared for the period that they both cover, namely 2010-2022. The combination of actual costs in 2010-2012 with the 2013 Estimate's forecast for 2013-2022 totals $116 million, which is a decrease of $6 million. Thus, on a comparable basis (i.e., comparing the portions of the two estimates covering the same period – 2010 to 2022), the 2013 Estimate is very close to the 2010 Estimate; differing by less than 5 percent.

The 2013 Estimate total of $225.4 million differs from the 2010 Estimate's projection of $122 million for a number of reasons. The primary reason for the difference is that, based on DOE's delays in removing the spent fuel and high-level waste, Yankee's operations are projected to extend an additional eleven years to 2033. Extending Yankee's operations to 2033 increases the 2013 Estimate (including escalation) to $225.4 million, which is an increase of $103.4 million. Other reasons for the difference include the capital costs associated with new security requirements expected to result from regulation changes being considered by the NRC, and the incorporation of the new "site specific" ISFSI D&D cost estimate prepared by an independent third-party, as required by recently adopted NRC regulation.

II. BACKGROUND

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

A. Yes. As explained more fully in Mr. Norton's testimony, on February 26, 1992, Yankee's Board of Directors voted to permanently cease power operations at the Plant

and commence the process of decommissioning. D&D activities were undertaken beginning in 1993, and were completed in 2007. Construction of the ISFSI was completed in 1998. Transfer of spent fuel and Greater-Than-Class C ("GTCC") waste to the storage canisters was completed in 2003. On August 10, 2007, the Nuclear Regulatory Commission ("NRC") issued Yankee a fuel storage-only operating license for the Plant. Yankee has safely and securely stored the spent fuel and GTCC waste from the Plant in the ISFSI since that time.

Most of the legal and regulatory issues associated with the Plant's decommissioning have been resolved by past proceedings and settlement agreements. Thus, for example, under a 2006 settlement agreement, the recovery of the costs of the decommissioning activities completed in 2007, including the D&D of the Plant, were finalized. The 2006 settlement agreement also established how any net proceeds from litigation against DOE for its delay in removing nuclear materials from the Plant site shall be applied to Yankee costs. With the Plant D&D completed in 2007, Yankee's principal remaining activities include the current operation of the ISFSI and the future decommissioning of the ISFSI. And, its primary rate component is its decommissioning charge to fund the NDT to cover the costs of these activities.

Q. When were Yankee's current decommissioning charges established?

A. The Company's current decommissioning charges were established by a 2006 settlement, which also established a schedule of charges through 2014. In 2010, Yankee submitted a filing to the Commission that included an updated

decommissioning estimate, which is the 2010 Estimate I mentioned earlier. However, in that filing Yankee did not propose any change in its charges to fund the NDT.

The current decommissioning charges include charges of $11.75 million annually for the remainder of 2013 and 2014, for the purpose of funding ongoing spent fuel/GTCC waste storage costs and the costs of remaining D&D activities, including corporate dissolution, that will be required after DOE removes the spent fuel and GTCC waste from the site.

III. 2013 DECOMMISSIONING ESTIMATE

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

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

Another key assumption used in the 2013 Estimate is that DOE will bear the cost of removing the GTCC waste, in addition to the spent nuclear fuel. The Company believes that this is a DOE obligation under the Standard Contract. However, DOE has contested this matter in litigation. In 2008, the Federal Circuit Court of Appeals found that the proper valuation of GTCC waste disposal is an issue that must be resolved in future proceedings, and that the Government need not "bear the cost of GTCC waste disposal alone." *Yankee Atomic Electric Co. v. U.S.*, 536 F.3d 1268, 1279 (2008). In 2010, the U.S. Court of Federal Claims similarly stated that "any

additional costs of GTCC disposal are reserved for future proceedings." *Yankee Atomic Electric Co. v. U.S.*, 94 Fed.Cl. 678, 721 n.47 (2010). Notwithstanding these rulings, Yankee believes that it will ultimately prevail on this issue, and thus has assumed in the 2013 Estimate that DOE will bear the cost of GTCC waste removal. Obviously, if Yankee is required to pay a share of the costs of removal and disposal of the GTCC waste, then its costs of decommissioning will increase.

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

Ms. Pizzella and Mr. Norton provide further detail regarding the assumptions underlying the 2013 Estimate, and discuss a number of uncertainties that may force the Company to adjust these assumptions in the future. It is important to understand that my testimony is based on these assumptions, and is therefore subject to the uncertainties Ms. Pizzella and Mr. Norton identify.

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

A. To prepare the 2013 Estimate, I reviewed the projections of the scope of work and

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

Likewise, the unit costs of performing these activities are relatively stable on a constant dollar basis in the absence of any significant change in market conditions. The same is true of ISFSI D&D: the constant dollar cost of decontaminating and dismantling the ISFSI should not change if there has not been a change in the regulatory requirements affecting the scope of that work, or a change in market conditions affecting the costs. For example, if there has been no change in insurance market conditions, the premium costs for Yankee to obtain insurance to cover the same scope of work involved in decommissioning should not change. Thus, if there has been no major change in regulatory requirements or market conditions affecting ISFSI operations or D&D, the cost projections in the 2010 Estimate should remain valid, once adjusted for escalation and the extended fuel storage term. In my testimony, I accordingly focus on the portions of the scope of work where I have identified changes in the scope of work or the cost of accomplishing the scope of work.

Q. How is the 2013 Estimate expressed?

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

Q. What is the constant dollar estimate used for?

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

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

A. Based on my review and analysis, I concluded that the scope of work and unescalated unit costs projected in the 2010 Estimate for ISFSI operations and D&D remain reasonable, with the exceptions that I will discuss. There are only a few significant differences between the two estimates in terms of the scope of work. With the Plant site decommissioning completed, the scope of both estimates is primarily limited to the remaining fuel storage activities – i.e., ISFSI operations and D&D. While there have been no major changes in the regulatory requirements affecting ISFSI operations or ISFSI D&D, Yankee has determined, based on experience since the 2010 Estimate was prepared, that it requires additional management resources to address regulatory

requirements. In addition, as I will discuss, the 2013 Estimate takes into account the prospect that security costs will increase to comply with new requirements coming out of a rulemaking currently pending before the NRC. As I will also discuss later in my testimony, there have been a number of areas where I have identified changes in the costs of accomplishing the scope of work reflected in the 2013 Estimate.

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

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

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

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

A. The 2010 Estimate projected a total cost (including escalation) of $122 million over the 2010-2022 period. The combination of actual costs in 2010-2012 with the 2013 Estimate's forecast for 2013-2022 totals $116 million, which is a decrease of $6 million. Thus, on a comparable basis (i.e., comparing the portions of the two estimates covering the same period – 2010 to 2022), the 2013 Estimate is very close to the 2010 Estimate; differing by less than 5 percent. Extending Yankee's operations to 2033 increases the 2013 Estimate (including escalation) to $225.4 million, which is an increase of $103.4 million.

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

A. The 2013 Estimate total of $225.4 million differs from the 2010 Estimate's projection of $122 million for a number of reasons. The primary reason for the difference is that, based on DOE's delays in removing the spent fuel and GTCC waste, Yankee's operations are projected to extend an additional 11 years to 2033. Other reasons for the difference include the capital costs associated with new security requirements expected to result from regulation changes being considered by the NRC, and the incorporation of the new "site specific" ISFSI D&D cost estimate prepared by an independent third-party, as required by recently adopted NRC regulation. As I will discuss, other cost categories also changed, with some increasing and some decreasing.

I discuss each specific cost category below. First, I address the various activities and cost categories associated with Yankee's operation of the ISFSI. Second, I address activities and cost categories associated with the dismantlement and decontamination of the Company's ISFSI.

IV. NEW ESTIMATE OF ISFSI OPERATION COSTS

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

A. ISFSI operations will continue until DOE removes the spent fuel and GTCC waste, allowing for the decommissioning of the ISFSI. Yankee expects that the ISFSI operating costs will continue to cover a number of categories, including costs for insurance, labor, security, materials and supplies, miscellaneous expenses, outside services, property taxes, regulatory fees, rentals and leases and utilities.

Q. Explain how Yankee projected insurance costs.

A. The insurance cost estimate is based on an updated estimate of costs provided by Yankee's insurance consultant, Marsh USA Inc., derived from the current contractual terms. The total estimated cost of insurance for the period 2013-2033 is $12,846,183. The levels of insurance that Yankee procures for prudent business operations and regulations have not materially changed since the 2010 Estimate. However, due to more favorable insurance rates, there has been a significant reduction in projected insurance costs. Namely, in the 2010 Estimate insurance costs were projected to be $14,792,743 for the period 2010-2022. As a result of the more favorable rates and

incorporating actual costs for 2010-2012, such costs are now projected to be only $6,999,238 for that same period. Based on my review, the new estimate of insurance costs is reasonable.

Q. Please explain the labor estimate.

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

engineering and licensing activities to support the license renewal for Yankee and its sister companies, and to support industry efforts to implement Consolidated Interim Storage.

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

Based on this review, the 2013 Estimate for Labor - Non-Manual is $42,784,821 for the period 2013-2033. This category of costs has increased from the 2010 Estimate as a result of increased labor costs of operating and managing the ISFSI. In the 2010 Estimate, labor costs were projected to be $14,711,378 for the period 2010-2022. As a result of the increase in labor costs and incorporating actual costs for 2010-2012, such costs are now projected to be $20,887,076 for that same period.

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

A. The security category includes the costs associated with "Labor – Security," which includes guarding the ISFSI through Yankee's current vendor, G4S. In preparing the 2013 Estimate, Yankee calculated an estimate for a portion of the costs in this category based on review of the contract, rates under the contract, and the work that

remains to be performed under the contract. Based on this review, Yankee estimates the costs for this category to be $74,172,018 for the period 2013-2033. Also, because there have been no material changes to rates or scope of work, the 2013 Estimate is comparable to the 2010 Estimate with respect to Labor – Security costs. In the 2010 Estimate, these costs were projected to be $33,431,820 for the period 2010-2022. In the 2013 Estimate, the costs are now projected to be $32,927,759 for that same period.

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

be $20,474,026 for the period 2013-2033. In the 2010 Estimate, these costs were projected to be $8,248,052 for the period 2010-2022. In the 2013 Estimate, as a result of the new security requirements and including actuals for 2010-2012, the costs are now projected to be $12,497,906 for that same period.

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

A. The materials and supplies category is drawn from the projected costs for consumables to be used during the remainder of operations onsite. Such costs include, among other things, fuel for machinery, office supplies, and computer supplies. Costs are based on a projection of future costs on an item-by-item basis. In the 2013 Estimate, these costs are projected to be $1,948,622 for the period 2013-2033. They have remained relatively static from the 2010 Estimate. In the 2010 Estimate, these costs were projected to be $1,232,328 for the period 2010-2022. In the 2013 Estimate, the costs are now projected to be $1,179,544 for that same period.

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

A. This category consists of costs of travel, meals, operation and maintenance of vehicles and equipment, and rentals and leases. The Company based its 2013 Estimate of these costs on actual costs prescribed by its contracts over the period until 2033, or on input from the provider of the service or responsible Company manager. The 2013 Estimate for these costs is $2,156,833 for the period 2013-2033. The estimate of these costs has decreased since the 2010 Estimate. In the 2010 Estimate, these costs were projected to be $2,160,945 for the period 2010-2022. In the 2013 Estimate, the costs are now

projected to be $1,078,208 for that same period. The primary reason for this decrease is due to a revised estimate for non-manual travel expenses. Yankee was conservative in its 2010 non-manual travel expenses estimate. The current estimate reflects Yankee's experience with these expenses

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

A. The forecast for the cost of legal services was provided by Company's counsel, with input from our outside litigation attorneys. It accounts for anticipated legal matters such as the DOE litigation and upcoming rate cases. The 2013 Estimate of these costs is $11,729,783. Compared to the 2010 Estimate, there is a significant reduction in the estimate for these costs because of improved efficiencies associated with the DOE litigation process. Namely, in the 2010 Estimate, these costs were projected to be $9,400,011 for the period 2010-2022. In the 2013 Estimate, as a result of the streamlined DOE litigation processes and taking into account actual costs for 2010-2012, the costs are now projected to be $7,412,722 for that same period. Of course, delays in current litigation, or unforeseen litigation arising in the future could change this portion of the estimate.

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

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

costs (when adjusted for inflation). Yankee based its 2013 Estimate of these costs on actual costs prescribed by its contracts over the period until 2033, or on input from the provider of the service or responsible Company manager. Yankee also compared its estimate of A&G costs with the A&G costs incurred by Maine Yankee and Connecticut Yankee in connection with a similar type and scope of work. The 2013 Estimate of these costs is $15,733,421. The new estimate is not significantly higher than the 2010 Estimate. In the 2010 Estimate, these costs were projected to be $8,898,249 for the period 2010-2022. In the 2013 Estimate, the costs are now projected to be $9,663,638 for that same period.

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

A. The Company pays property taxes to the Town of Rowe, Massachusetts, which is the location of the ISFSI. Yankee is subject to the town's general property tax assessment and tax rates. The Town has only one other significant taxpaying entity, thus the Company's ISFSI represents a significant portion of the total assessed property values. The Company assumed in the 2013 Estimate that property taxes will continue for the remainder of the ISFSI's lifetime, and estimates these costs to total $6,805,473 for the period 2013-2033. Obviously, such things as major changes in property valuations or tax rates could cause this estimate to change. The property tax estimate in the 2010 Estimate was lower than the current estimate. In the 2010 Estimate, these costs were projected to be $2,159,042 for the period 2010-2022. In the 2013 Estimate, the costs are now projected to be $3,430,416 for that same period. This increase reflects the

fact that the property re-valuations conducted by the Town of Rowe resulted in increased annual tax assessments for the Company.

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

A. Regulatory Fees consist of the amounts paid to the federal and state agencies that oversee Yankee's activities, including the Environmental Protection Agency, the FERC, the NRC, the Massachusetts Department of Environmental Protection, the Massachusetts Department of Public Health, and the Massachusetts Department of Public Utilities. The 2013 Estimate projects $11,290,815 in regulatory fees for the period 2013-2033. These costs have remained relatively static. In the 2010 Estimate, these costs were projected to be $ 5,307,349 for the period 2010-2022. That projection has decreased in the 2013 Estimate to $4,254,845 for that same period.

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

A. This category consists of the costs Yankee incurs to obtain items such as office space, furniture, and equipment. Under the 2013 Estimate, Yankee projects that its costs for rentals and leases will be insignificant, based on current contracts and projected needs. Consequently, Yankee does not track these costs separately. Instead, they are included in the miscellaneous expenses category for purposes of the 2013 Estimate. The 2010 Estimate projected $367,197 in rentals and leases costs for the period 2010-2022.

Q. Please explain how Yankee projected utility costs.

A. Similar to rentals and leases, utility costs are based on current contracts and projected needs for water, electricity and telephone service. The Company estimates these costs to total $1,886,443 for the period 2013-2033. The estimate for utility costs in the 2010 Estimate was significantly higher than the current estimate. In the 2010 Estimate, these costs were projected to be $2,673,175 for the period 2010-2022. In the 2013 Estimate, the costs are now projected to be only $964,644 for that same period. This reduction is due primarily to a reduced estimate of Yankee's purchased power costs.

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

A. Yes. The 2013 Estimate includes a contingency allowance. The line item cost estimates described elsewhere in this testimony consider work performed under normal conditions, with no complications such as inclement weather or equipment problems, among others. A contingency calculation is necessary to allow for the likely occurrence of such disruptions. Contingency factors in the 2013 Estimate were derived from Yankee's experience and assessments of future risk, and applied to total costs. Similar to the 2010 Estimate, Yankee used a 5% contingency for ISFSI operations and a 10% contingency for the final three years of the estimate which includes ISFSI D&D. The 2013 Estimate includes a contingency allowance of $13,138,348 for the period 2013-2033. The new contingency allowance reflects a negligible increase from the 2010 Estimate. The contingency allowance in the 2010

Estimate was $6,352,180 for the period 2010-2022, and in the 2013 Estimate it is $6,563,953 for that period.

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

V. NEW ESTIMATE OF THE ISFSI D&D COSTS

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

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

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

A. The NRC now requires each licensee operating an ISFSI to commission a third-party to prepare an estimate of the cost of completing the ISFSI D&D. Yankee commissioned such an estimate, which was completed by Knight Cost Engineering Services, LLC ("KCES") in December of 2012. The D&D estimate is provided as Exhibit No. YA-303. The D&D estimate was prepared in accordance with the guidelines provided in Regulatory Guide 1.202 and NUREG-1713. In addition, it takes into account the guidelines identified in NUREG-1757. These are NRC regulations and guidelines addressing the requirements for the preparation of ISFSI D&D cost estimates.

Two types of costs were determined in the D&D estimate: (i) activity costs; and (ii) level of effort costs. All costs were current to July, 2012. The activity costs were developed utilizing a unit cost factor approach. Site material quantities for concrete, steel and equipment where 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 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 was assumed to be on-site for the duration of the project.

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

A. KCES used a number of assumptions in preparing the D&D estimate. These assumptions, which were based on the most current decommissioning methodologies and site-specific considerations, include the following. Component quantities were developed from actual plant listings. Concrete volumes were developed from plant drawings. The oversight staff was assumed to be the similar size and configuration as it is today, with staff positions and costs at July, 2012 salary and benefit levels. Subcontractor base labor rates and fringe benefits were taken from the 2012 R. S. Means Heavy Construction Cost Data and adjusted to Massachusetts based on the City Cost Indexes for Pittsfield, MA. Activity labor costs did not include any allowance for delays between activities, nor was there any cost allowance for craft labor retained on-site while waiting for work to become available. All skilled laborers will be supplied locally and hired by the GC. Transportation costs were based on actual mileage from Yankee to the Studsvik processing facility in Memphis, Tennessee. The ISFSI concrete pad, Vertical Concrete Cask ("VCC") exterior concrete and VCC liner steel were assumed to be Class A waste to be disposed of at the Studsvik processing facility in Tennessee. A disposal rate of $0.13 per pound was used, based on information provided by Studsvik. A number of buildings will be disposed of as clean waste in a local landfill at a disposal rate of $91.80 per ton, based on information provided in the 2012 R. S. Means Building Construction Cost Data. All Multi Purpose Canisters ("MPCs") containing both spent fuel and GTCC waste will have been removed from site prior to the start of D&D activities. Property taxes were included at the cost of $200,000 per year, and fees were included at the current cost of

$325,000 per year. Insurance and legal costs were included at the current cost of $631,000 per year and $200,000 per year, respectively. The D&D activities will be performed under the current regulations. The removal of the pad and concrete overpacks will be performed in Tyvek coveralls. No subsurface material is assumed to require remediation regarding radionuclides.

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

A. KCES determined that the total D&D cost including contingency is $9.8 million, which includes $8.5 million for radiological removal and $1.3 million for non-radiological removal.

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

A. I used the KCES estimate of the GC costs, which are the costs of the hands-on D&D activities. These costs total $8,987,978, and represent approximately two-thirds of the total KCES D&D estimate. The remaining costs, which are not related to the GC costs, basically comprise A&G and other corporate costs. These costs are represented differently in the overall estimate of decommissioning costs. Consequently, I prepared my own projections of those costs, and relied on the KCES estimate as a check on and support for my projections. With respect to these costs, my projections and the KCES estimate are essentially identical.

VI. ESCALATION RATE

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

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

Q. What is your basis for this recommendation?

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

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

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Yankee Atomic Electric 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. YA-301

2013 DECOMMISSIONING COST ESTIMATE

YANKEE ATOMIC ELECTRIC COMPANY
2013 DECOMMISSIONING ESTIMATE
(Escalated 2013 Dollars)

Cost Categories	**Costs 2013 - 2033**
Contingency	$13,138,348
Insurance	$12,846,183
Labor - Non-Manual	$42,784,821
Labor - Security	$74,172,018
Materials & Supplies	$1,948,622
Miscellaneous	$2,156,833
Outside Services - A&G	$15,733,421
Outside Services - Fuel Loading	$1,487,382
Outside Services - ISFSI OP's	$20,474,026
Outside Services - Legal	$11,729,783
Outside Services - NON-RAD D&D of ISFSI	$1,220,487
Outside Services - RAD D&D of ISFSI	$7,767,491
Property Taxes	$6,805,473
Regulatory Fees	$11,290,815
Utilities	$1,886,443
Grand Total	**$225,442,145**

2013-2033 Summary
(UNESCALATED)

	Data										
FERC Summary	**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	$357,690	$343,148	$465,028	$500,680	$514,704	$364,704	389,704	$377,204	$364,704	$364,704	$364,704
Insurance	$431,000	$537,667	$431,000	$431,000	$431,000	$431,000	431,000	$431,000	$431,000	$431,000	$431,000
Labor - Non-Manual	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750	1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750
Labor - Security	$2,380,000	$2,380,000	$2,618,000	$2,879,800	$3,167,780	$3,167,780	3,167,780	$3,167,780	$3,167,780	$3,167,780	$3,167,780
Materials & Supplies	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	75,000	$75,000	$75,000	$75,000	$75,000
Miscellaneous	$80,950	$80,950	$80,950	$80,950	$80,950	$80,950	80,950	$80,950	$80,950	$80,950	$80,950
Outside Services - A&G	$528,100	$720,600	$776,850	$1,478,100	$1,470,600	$470,600	470,600	$470,600	$470,600	$470,600	$470,600
Outside Services - Fuel Loading	$0	$0	$0	$0	$0	$0	0	$0	$0	$0	$0
Outside Services - ISFSI OP's	$438,000	$548,000	$2,548,000	$2,548,000	$2,548,000	$548,000	548,000	$548,000	$548,000	$548,000	$548,000
Outside Services - Legal	$900,000	$200,000	$450,000	$200,000	$200,000	$200,000	700,000	$450,000	$200,000	$200,000	$200,000
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	$260,000	$260,000	$260,000	$260,000	$260,000	$260,000	260,000	$260,000	$260,000	$260,000	$260,000
Regulatory Fees	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000	390,000	$390,000	$390,000	$390,000	$390,000
Utilities	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	70,000	$70,000	$70,000	$70,000	$70,000
Grand Total	**$7,511,490**	**$7,206,115**	**$9,765,578**	**$10,514,280**	**$10,808,784**	**$7,658,784**	**8,183,784**	**$7,921,284**	**$7,658,784**	**$7,658,784**	**$7,658,784**

2013-2033 Summary
(UNESCALATED)

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 Totals 2013 - 2033
Contingency	$364,704	$402,204	$364,704	$364,704	$364,704	$364,704	$806,158	$826,408	$1,055,378	$514,798	$9,835,440
Insurance	$431,000	$431,000	$431,000	$431,000	$431,000	$431,000	$431,000	$431,000	$431,000	$1,054,000	$9,780,667
Labor - Non-Manual	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,600,750	$1,620,750	$1,715,750	$1,024,750	$33,174,750
Labor - Security	$3,167,780	$3,167,780	$3,167,780	$3,167,780	$3,167,780	$3,167,780	$3,167,780	$3,167,780	$500,000	$0	$58,274,500
Materials & Supplies	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$20,000	$1,520,000
Miscellaneous	$80,950	$80,950	$80,950	$80,950	$80,950	$80,950	$80,950	$80,950	$96,950	$38,700	$1,673,700
Outside Services - A&G	$470,600	$470,600	$470,600	$470,600	$470,600	$470,600	$478,100	$470,600	$426,850	$577,530	$12,574,530
Outside Services - Fuel Loading	$0	$0	$0	$0	$0	$0	$260,000	$700,000	$0	$0	$960,000
Outside Services - ISFSI OP's	$548,000	$548,000	$548,000	$548,000	$548,000	$548,000	$548,000	$548,000	$548,000	$75,000	$16,925,000
Outside Services - Legal	$200,000	$950,000	$200,000	$200,000	$200,000	$200,000	$700,000	$450,000	$200,000	$1,600,000	$8,800,000
Outside Services - NON-RAD D&D of ISFSI	$0	$0	$0	$0	$0	$0	$0	$0	$763,449	$0	$763,449
Outside Services - RAD D&D of ISFSI	$0	$0	$0	$0	$0	$0	$0	$0	$4,858,781	$0	$4,858,781
Property Taxes	$260,000	$260,000	$260,000	$260,000	$260,000	$260,000	$260,000	$260,000	$260,000	$100,000	$5,300,000
Regulatory Fees	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000	$390,000	$608,000	$598,000	$8,616,000
Utilities	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$70,000	$60,000	$1,460,000
Grand Total	**$7,658,784**	**$8,446,284**	**$7,658,784**	**$7,658,784**	**$7,658,784**	**$7,658,784**	**$8,867,738**	**$9,090,488**	**$11,609,158**	**$5,662,778**	**$174,516,816**

Summary 2013 - 2033
(ESCALATED)

	Data										
FERC Summary	**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	$357,690	$351,727	$488,570	$539,178	$568,137	$412,629	$451,937	$448,377	$444,356	$455,465	$466,852
Insurance	$431,000	$551,109	$452,819	$464,140	$475,743	$487,637	$499,828	$512,324	$525,132	$538,260	$551,716
Labor - Non-Manual	$1,600,750	$1,640,769	$1,681,788	$1,723,833	$1,766,928	$1,811,102	$1,856,379	$1,902,789	$1,950,358	$1,999,117	$2,049,095
Labor - Security	$2,380,000	$2,439,500	$2,750,536	$3,101,230	$3,496,636	$3,584,052	$3,673,654	$3,765,495	$3,859,632	$3,956,123	$4,055,026
Materials & Supplies	$75,000	$76,875	$78,797	$80,767	$82,786	$84,856	$86,977	$89,151	$91,380	$93,665	$96,006
Miscellaneous	$80,950	$82,974	$85,048	$87,174	$89,354	$91,587	$93,877	$96,224	$98,630	$101,095	$103,623
Outside Services - A&G	$528,100	$738,615	$816,178	$1,591,752	$1,623,267	$532,441	$545,752	$559,396	$573,380	$587,715	$602,408
Outside Services - Fuel Loading	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Outside Services - ISFSI OP's	$438,000	$561,700	$2,676,993	$2,743,917	$2,812,515	$620,012	$635,512	$651,400	$667,685	$684,377	$701,486
Outside Services - Legal	$900,000	$205,000	$472,781	$215,378	$220,763	$226,282	$811,785	$534,909	$243,681	$249,773	$256,017
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	$260,000	$266,500	$273,163	$279,992	$286,991	$294,166	$301,520	$309,058	$316,785	$324,704	$332,822
Regulatory Fees	$390,000	$399,750	$409,744	$419,987	$430,487	$441,249	$452,280	$463,587	$475,177	$487,057	$499,233
Utilities	$70,000	$71,750	$73,544	$75,382	$77,267	$79,199	$81,179	$83,208	$85,288	$87,420	$89,606
Workmans Compensation											
Grand Total	**$7,511,490**	**$7,386,268**	**$10,259,960**	**$11,322,730**	**$11,930,875**	**$8,665,211**	**$9,490,680**	**$9,415,917**	**$9,331,485**	**$9,564,772**	**$9,803,891**

Summary 2013 - 2033
(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 Totals 2013 - 2033
Contingency	$478,523	$540,920	$502,748	$515,317	$528,200	$541,405	$1,226,665	$1,288,914	$1,687,180	$843,556	$13,138,348
Insurance	$565,509	$579,647	$594,138	$608,992	$624,217	$639,822	$655,817	$672,213	$689,018	$1,727,102	$12,846,183
Labor - Non-Manual	$2,100,323	$2,152,831	$2,206,652	$2,261,818	$2,318,363	$2,376,322	$2,435,730	$2,527,817	$2,742,884	$1,679,172	$42,784,821
Labor - Security	$4,156,402	$4,260,312	$4,366,820	$4,475,990	$4,587,890	$4,702,587	$4,820,152	$4,940,656	$799,325	$0	$74,172,018
Materials & Supplies	$98,406	$100,867	$103,388	$105,973	$108,622	$111,338	$114,121	$116,974	$119,899	$32,772	$1,948,622
Miscellaneous	$106,213	$108,869	$111,590	$114,380	$117,240	$120,171	$123,175	$126,254	$154,989	$63,414	$2,156,833
Outside Services - A&G	$617,468	$632,905	$648,727	$664,945	$681,569	$698,608	$727,486	$733,975	$682,384	$946,350	$15,733,421
Outside Services - Fuel Loading	$0	$0	$0	$0	$0	$0	$395,621	$1,091,761	$0	$0	$1,487,382
Outside Services - ISFSI OP's	$719,023	$736,999	$755,424	$774,310	$793,667	$813,509	$833,847	$854,693	$876,060	$122,896	$20,474,026
Outside Services - Legal	$262,417	$1,277,644	$275,702	$282,595	$289,660	$296,901	$1,065,133	$701,846	$319,730	$2,621,786	$11,729,783
Outside Services - NON-RAD D&D of ISFSI	$0	$0	$0	$0	$0	$0	$0	$0	$1,220,487	$0	$1,220,487
Outside Services - RAD D&D of ISFSI	$0	$0	$0	$0	$0	$0	$0	$0	$7,767,491	$0	$7,767,491
Property Taxes	$341,143	$349,671	$358,413	$367,373	$376,558	$385,971	$395,621	$405,511	$415,649	$163,862	$6,805,473
Regulatory Fees	$511,714	$524,507	$537,619	$551,060	$564,836	$578,957	$593,431	$608,267	$971,979	$979,893	$11,290,815
Utilities	$91,846	$94,142	$96,496	$98,908	$101,381	$103,915	$106,513	$109,176	$111,906	$98,317	$1,886,443
Workmans Compensation											$0
Grand Total	**$10,048,988**	**$11,359,313**	**$10,557,718**	**$10,821,661**	**$11,092,203**	**$11,369,508**	**$13,493,312**	**$14,178,059**	**$18,558,982**	**$9,279,121**	**$225,442,145**

EXHIBIT No. YA-302

COMPARISON OF 2010 AND 2013 ESTIMATE

2013 Estimates
Yankee Atomic
Comparison to 2010 Estimate

Exhibit No. YA-302

	2010 Estimate	2013 Estimate	
Categories for FERC Summary	2010-22 Escalated (2.5%)	2010-2012 Actuals 2013-22 Estimate Escalated	Comments
Contingency	$ 6,352,180	$ 6,563,953	
Insurance	$ 14,792,743	$ 6,999,238	More Favorable Insurance Rates
Labor - Non-Manual	$ 14,711,378	$ 20,887,076	Revised Labor Costs to Manage ISFSI's
Labor - Security	$ 33,431,820	$ 32,927,759	
Materials & Supplies	$ 1,232,328	$ 1,179,544	
Miscellaneous	$ 2,160,945	$ 1,078,208	
Outside Services - A&G	$ 8,898,249	$ 9,663,638	
Outside Services - Decom	$ 11,830,660	$ 7,983,741	ISFSI DECOM estimate updated in 2012
Outside Services - ISFSI OP's	$ 8,248,052	$ 12,497,906	2013-2023 estimate includes capital expenditures associated with pending new security regulations
Outside Services - Legal	$ 9,400,011	$ 7,412,722	Streamlined DOE Litigation
Property Taxes	$ 2,159,042	$ 3,430,416	
Regulatory Fee's	$ 5,307,349	$ 4,254,845	
Rentals & Leases	$ 367,197	$ -	
Utilities	$ 2,673,175	$ 964,644	Revised Estimate for Purchased Power
Grand Total	$ 121,565,127	$ 115,843,689	
Footnotes:			
1. 2010-2012 Actuals are $6.3 Million under 2010 Estimate Budget for the same time period			

EXHIBIT No. YA-303

DECOMMISSIONING STUDY OF THE
YANKEE ROWE
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

KNIGHT COST ENGINEERING SERVICES, LLC
DECEMBER, 2012

Decommissioning Study of the Yankee Rowe Independent Spent Fuel Storage Installation

Prepared for Yankee Atomic Power Company

Knight Cost Engineering Services, LLC
December, 2012

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this study is to identify the costs associated with the decommissioning of the Yankee Rowe (YR) Independent Spent Fuel Storage Installation (ISFSI). This estimate includes only the structures, systems and land within the NRC licensed area. The YR ISFSI is located in the South East portion of the former reactor site. The NAC-MPC fuel storage and transport canister system chosen by YR is licensed by the NRC for both storage and transportation.

There are 16 dry storage casks on the 50 by 180-foot, three-foot-thick concrete pad at the YR ISFSI. Fifteen of the casks contain the 533 spent fuel assemblies and one cask stores 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 and transferring spent fuel was completed in June 2003.

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 YR site has recently been successfully decommissioned. Many of the key personnel involved in that project remain at the YR ISFSI. The lessons learned from that project will be incorporated in the YR 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 **$9.8 million**, $8.5 million for radiological removal and $1.3 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

	Total Cost	Radiological Removal $	Non-radiological Removal $
Grand Total Building	**$9,848,120**	**$8,510,833**	**$1,337,287**
Tax on General Contractor	**$0**	**$0**	**$0**
General Contractor with contingency	**$6,033,612**	**$5,214,301**	**$819,311**

Site Costs with contingency			**$3,814,508**	**$3,296,532**	**$517,976**
General Contractor			**$5,485,102**	**$4,740,274**	**$744,828**
Site Costs			**$3,467,735**	**$2,996,847**	**$470,888**
YR ISFSI			**$8,952,837**	**$7,737,121**	**$1,215,716**
PERIOD DEPENDENT COSTS			$5,814,531	$5,024,970	$789,562
1.1		YR Site Costs	$3,467,735	$2,996,847	$470,888
	1.1.1	Project Management	$1,222,720		
	1.1.2	Security Staff	$889,014		
	1.1.3	Fees	$325,000	$280,868	$44,132
	1.1.4	Insurance	$631,000	$545,316	$85,684
	1.1.5	Legal	$200,000	$172,842	$27,158
	1.1.6	Property Taxes	$200,000	$172,842	$27,158
1.2		General Contractor	$2,346,796	$2,028,122	$318,674
	1.2.1	Decommissioning General Contractor	$1,209,290		
	1.2.2	Waste Packaging Crew	$512,621		
	1.2.3	Equipment & Materials	$624,885		
ACTIVITIES			$3,138,305	$2,712,151	$426,154
1.3		**Project Engineering**	$21,108	$18,242	$2,866
	1.3.1	Procedure Development and Review - Offsite	$10,554		
	1.3.2	Preparation of QA and Safety Documents - Offsite (in parallel with 1.2.1)	$10,554		
1.4		**Site Mobilization and General Employee Training (GET)**	$106,669	$92,184	$14,485
	1.4.1	Site Mobilization	$27,198		
	1.4.2	General Employee Training	$71,738		
	1.4.3	Site Specific Training	$7,733		
1.5		**Site Preparation - Performed by Staff**	$14,404	$12,448	$1,956
	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.**	$7,202	$6,224	$978
	1.6.1	Electrical	$3,601		
	1.6.2	Ventilation	$1,800		
	1.6.3	Piping	$1,800		
1.7		**Removal inside security fence**	$2,596,684	$2,535,505	$61,179
	1.7.1	Remove Guard Posts	$3,305		$3,305
	1.7.2	Instrument Enclosure	$8,375	$0	$8,375
	1.7.3	Remove VCCs	$1,208,823	$1,208,823	$0
	1.7.3.1	Exterior Concrete	$612,010	$0	$0
	1.7.3.2	Steel liner	$596,812		
	1.7.4	Remove Concrete Pad	$1,326,683	$1,326,683	
	1.7.5	Remove Fence and Towers	$39,399		$39,399
	1.7.6	Remove Light Towers	$10,100		$10,100
1.8		**Removal outside security fence**	$334,315		$334,315

1.8.1	Remove Nuisance Fence	$70,485		$70,485
1.8.2	Retaining Wall	$46,334		$46,334
1.8.3	Conduit and wire - Instrument Enclosure to Utility Pole	$23,208		$23,208
1.8.4	Remove road inside licensed area	$190,915		$190,915
1.8.5	Remove vehicle barriers	$3,373		$3,373
1.8.10	Miscellaneous			
1.9	**Final Site Survey Structure gone - By DGC Staff**	$25,000	$21,605	$3,395
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			
1.1	**Orise Site Release Confirmation**			
1.11	**Outside areas**	$2,904		$2,904
1.11.1	Backfill, grade and seed	$2,904		$2,904
1.12	**Demolition Crew Demobilization**	$19,465	$16,822	$2,643
1.13	**Final Project Report - Offsite**	$10,554	$9,121	$1,433

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 where 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 Massachusetts based on the City Cost Indexes for Pittsfield, MA.

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 YR 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.

    Guard Posts
    Instrument Enclosure

Security Fence
Light Towers
Nuisance Fence
Retaining Wall
Conduit and wire - Instrument Enclosure to Utility Pole
Road inside licensed area
Vehicle barrier

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 $200,000 per year.

17. **Fees** are included in the estimate at the current cost of $325,000 per year.

18. **Insurance** costs are included in the estimate at the current cost of $631,000 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

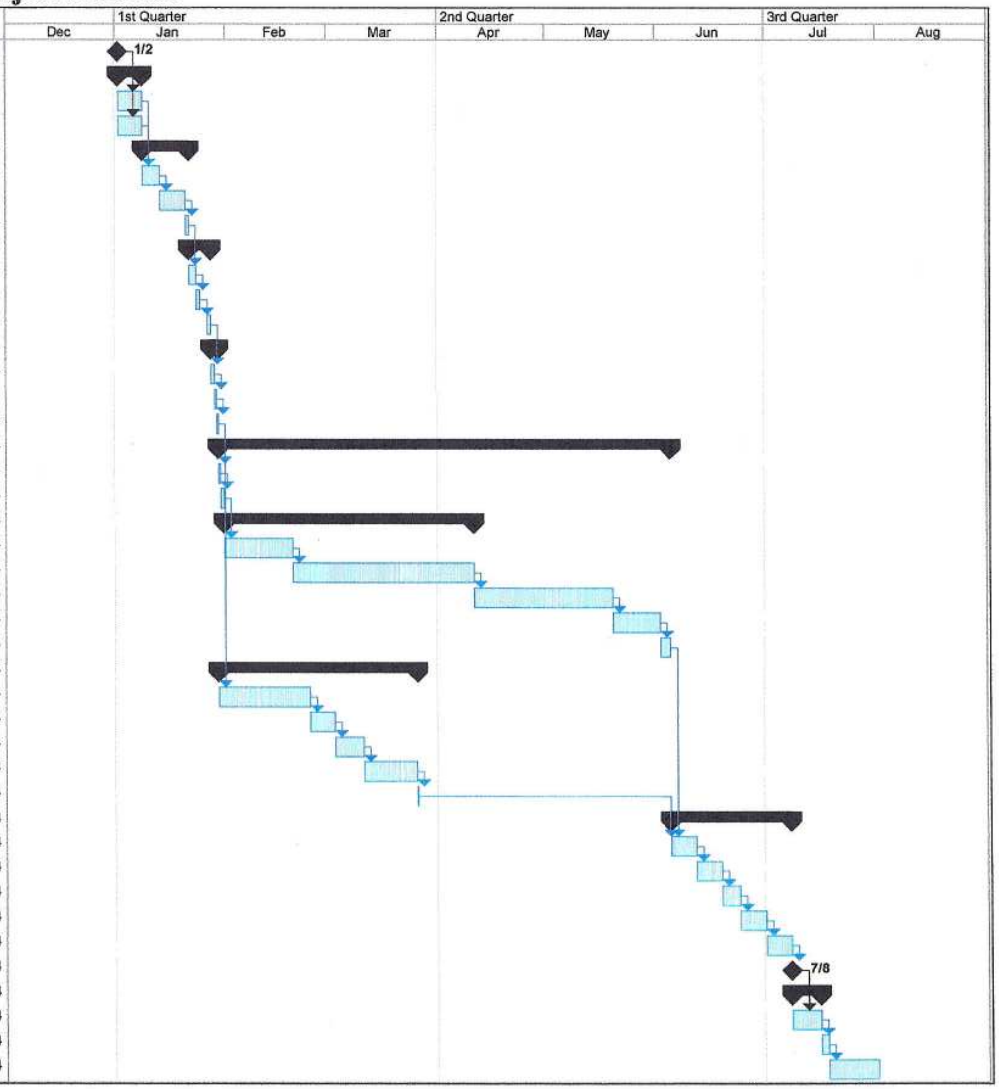
A scenario-specific schedule has been developed for estimate.

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 6.96 months.

Figure 5-1 provides the detailed decommissioning schedule.

Figure 5-1
Project Schedule

ID	Task Name	Duration	Start	Finish
1	Project Start	0 days	Thu 1/2/14	Thu 1/2/14
2	**Project Engineering**	**5 days**	**Thu 1/2/14**	**Wed 1/8/14**
3	Procedure Development and Review - Offsite	5 days	Thu 1/2/14	Wed 1/8/14
4	Preparation of QA and Safety Documents - Offsite	5 days	Thu 1/2/14	Wed 1/8/14
5	**Site Mobilization and General Employee Training (GET)**	**9 days**	**Thu 1/9/14**	**Tue 1/21/14**
6	Site Mobilization	3 days	Thu 1/9/14	Mon 1/13/14
7	General Employee Training	5 days	Tue 1/14/14	Mon 1/20/14
8	Site Specific Training	1 day	Tue 1/21/14	Tue 1/21/14
9	**Site Preparation - Performed by Staff**	**4 days**	**Wed 1/22/14**	**Mon 1/27/14**
10	Initial Site Survey	2 days	Wed 1/22/14	Thu 1/23/14
11	Setup work areas	1 day	Fri 1/24/14	Fri 1/24/14
12	Decontamination Readiness Review	1 day	Mon 1/27/14	Mon 1/27/14
13	**Disconnect all utilities to work areas.**	**2 days**	**Tue 1/28/14**	**Wed 1/29/14**
14	Electrical	1 day	Tue 1/28/14	Tue 1/28/14
15	Ventilation	0.5 days	Wed 1/29/14	Wed 1/29/14
16	Piping	0.5 days	Wed 1/29/14	Wed 1/29/14
17	**Removal Inside Secuirty Fence**	**90.13 days**	**Thu 1/30/14**	**Thu 6/5/14**
18	Remove Guard Posts	0.59 days	Thu 1/30/14	Thu 1/30/14
19	Remove Instrument Enclosure	1.24 days	Thu 1/30/14	Fri 1/31/14
20	**Remove VCCs**	**49.22 days**	**Fri 1/31/14**	**Fri 4/11/14**
21	Exterior Concrete	12.55 days	Fri 1/31/14	Wed 2/19/14
22	Steel liner	36.67 days	Wed 2/19/14	Fri 4/11/14
23	Remove Concrete Pad	27.21 days	Fri 4/11/14	Tue 5/20/14
24	Remove Fence and Towers	9.41 days	Tue 5/20/14	Mon 6/2/14
25	Remove Light Towers	2.46 days	Mon 6/2/14	Thu 6/5/14
26	**Removal Outside Security Fence**	**39.79 days**	**Thu 1/30/14**	**Wed 3/26/14**
27	Remove Nuisance Fence	17.21 days	Thu 1/30/14	Mon 2/24/14
28	Remove Retaining Wall	5.14 days	Mon 2/24/14	Mon 3/3/14
29	Remove Conduit and Wire	6.44 days	Mon 3/3/14	Tue 3/11/14
30	Remove road inside licensed area	10.33 days	Tue 3/11/14	Wed 3/26/14
31	Remove vehicle barrier	0.67 days	Wed 3/26/14	Wed 3/26/14
32	**Final Site Survey Structure gone - By DGC Staff**	**23 days**	**Thu 6/5/14**	**Tue 7/8/14**
33	Prepare Final Status Survey Plan	5 days	Thu 6/5/14	Thu 6/12/14
34	Soil Sampling	5 days	Thu 6/12/14	Thu 6/19/14
35	Direct Survey	3 days	Thu 6/19/14	Tue 6/24/14
36	Sampling Analysis	5 days	Tue 6/24/14	Tue 7/1/14
37	Prepare Final Status Survey Report	5 days	Tue 7/1/14	Tue 7/8/14
38	Orise Site Release Confirmation	0 days	Tue 7/8/14	Tue 7/8/14
39	**Outside areas**	**5.93 days**	**Tue 7/8/14**	**Wed 7/16/14**
40	Backfill, grade and seed	5.93 days	Tue 7/8/14	Wed 7/16/14
41	Demolition Crew Demobilization	2 days	Wed 7/16/14	Fri 7/18/14
42	Final Project Report - Offsite	10 days	Fri 7/18/14	Fri 8/1/14



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

Staff	Number
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	1
	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

Position	2012 Base Salary	Person Level
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	1.00
		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

Yankee Rowe ISFSI Decommissioning Cost Estimate Details

				Crew	Uncorrected Duration (No. of Hours)	Prod. Factor	Adjusted Duration	Man-hours	LSA Waste Disp. Vol (cf)	Hazardous Waste Vol (cf)	Ballast Volume (cf)	Mixed Waste Volume (cf)	Clean Waste Volume (cf)	Lead Waste Volume (cf)	Activated Waste Volume (cf)	Materials, Consumables, & Equipment	Labor Cost	LSA Waste Cost	Hazardous Waste Cost	Mixed Waste Cost	Clean Waste Cost	Lead Waste Cost	Activated Waste Cost	Total Cost	86.42% Radiological Removal $	13.58% Non-radiological Removal $
Grand Total Building																								**$9,849,120**	**$8,510,833**	**$1,337,287**
Contingency =																								**$895,284**		
Tax on General Contractor	0.00%															$0	$0	$0			$0			$0	$0	$0
General Contractor with contingency	10.00%															$763,251	$2,946,107	$2,114,922			$209,331			$6,033,612	$5,214,301	$819,311
Site Costs with contingency																$1,491,600	$2,322,908	$0			$0			$3,814,508	$3,296,532	$517,976
General Contractor								34,684	54,427				548,352			$893,864	$2,678,280	$1,922,657			$190,301			$5,485,102	$4,740,274	$744,828
Site Costs								39,789	0							$1,356,000	$2,111,735	$0			$0			$3,467,735	$2,996,847	$470,888
YR ISFSI								**74,473**	**54,427**				**548,352**			**$2,049,864**	**$4,790,014**	**$1,922,657**			**$190,301**			**$8,952,837**	**$7,737,121**	**$1,215,716**
PERIOD DEPENDENT COSTS								61,439								$1,980,885	$3,833,646	$0			$0			$5,814,531	$5,024,970	$789,562
1.1	YR Site Costs							39,789								$1,356,000	$2,111,735							$3,467,735	$2,996,847	$470,888
	Project duration =			211.00 150.71	days/7days/wk = working days		30.14	6.96	months																	
	Labor cost =	4,790,014	(Used to determine small tool costs and HP Supplies)																							
1.1.1	Project Management							24,114									$1,222,720							$1,222,720		

Staff		Number	Rate	Duration, days*	Use Factor	Cost	Man-hours	FTEs
President		1	$80.53	150.71	100.00%	$97,095	1,205.71	1
Cask Relicensing Project Manager		1	$29.17	150.71	100.00%	$35,167	1,205.71	1
Workers Concerns Manager		1	$11.54	150.71	100.00%	$13,912	1,205.71	1
Business Manager		1	$26.67	150.71	100.00%	$32,155	1,205.71	1
ISFSI Manager	(includes add. LM)	2	$101.69	150.71	100.00%	$245,209	2,411.43	2
ISFSI QA Manager		1	$8.65	150.71	100.00%	$10,434	1,205.71	1
Director Government Relations		1	$40.13	150.71	100.00%	$48,382	1,205.71	1
General Counsel		1	$25.64	150.71	100.00%	$30,916	1,205.71	1
Business Administrator		1	$24.35	150.71	100.00%	$29,357	1,205.71	1
Treasurer		1	$43.75	150.71	100.00%	$52,750	1,205.71	1
Accountant		1	$68.47	150.71	100.00%	$82,560	1,205.71	1
Benefits Manager		1	$13.85	150.71	100.00%	$16,695	1,205.71	1
IT Services		1	$72.12	150.71	100.00%	$86,951	1,205.71	1
ISFSI Operations Specialist	(includes 1 FSS Man	2	$81.08	150.71	100.00%	$195,525	2,411.43	2
Program Manager		1	$59.04	150.71	100.00%	$71,184	1,205.71	1
ISFSI Administrator		1	$42.25	150.71	100.00%	$50,941	1,205.71	1
Licensing Engineer		1	$49.50	150.71	100.00%	$59,683	1,205.71	1
Security Manager		1	$52.92	150.71	100.00%	$63,806	1,205.71	1
		20				$1,222,720	24,114.29	20.00

1.1.2	Security Staff							15,674									$889,014							$889,014		
	Project duration =			211.00	days/7days/wk =		30.14	weeks		6.93	Months															

Staff	Number	Rate	Duration, weeks	Use Factor	Cost	Man-hours
Security Guards - blended rate	13	$42.42	30.14	100.00%	$664,851	15,674.29

	$/month	Duration, Months	Use Factor	Cost
Medical	$26,323.00	6.93	30.00%	$54,745
Dental	$1,443.00	6.93	30.00%	$3,001
401(k)	$25,469.00	6.93	30.00%	$52,969
Ammo	$15,000.00	6.93	30.00%	$31,196
Uniforms	$39,550.00	6.93	30.00%	$82,253
	13			$889,014

1.1.3	Fees	$325,000.00	per year		1.00	years										$325,000								$325,000	$280,868	$44,132
1.1.4	Insurance	$631,000.00	per year		1.00	years										$631,000								$631,000	$545,316	$85,684
1.1.5	Legal	$200,000.00	per year		1.00	years										$200,000								$200,000	$172,842	$27,158
1.1.6	Property Taxes	$200,000.00	per year		1.00	years										$200,000								$200,000	$172,842	$27,158
1.2	General Contractor							21,650								$624,885	$1,721,911							$2,346,796	$2,028,122	$318,674
1.2.1	Decommissioning General Contractor							14,114									$1,209,290							$1,209,290		
	Project duration =			190.00 135.71	days/7days/wk = working days		27.14																			

Staff	Number	Rate	Duration, days*	Use Factor	Cost	Man-hours
Project Superintendent	1	$133.27	135.71	100.00%	$144,888	1,085.71
QA Auditor/Inspector	1	$76.45	135.71	100.00%	$82,999	1,085.71
Health & Safety Supervisor	1	$111.30	135.71	100.00%	$120,837	1,085.71
Packaging/Shipping Specialist	1	$76.45	135.71	100.00%	$82,999	1,085.71
Cost Control Accountant	1	$65.24	135.71	100.00%	$70,829	1,085.71
Scheduler II	1	$68.97	135.71	100.00%	$74,885	1,085.71
Demolition Specialist	1	$88.40	135.71	100.00%	$95,980	1,085.71
Industrial Safety	1	$88.40	135.71	100.00%	$95,980	1,085.71
Engineering Supervisor	1	$111.30	135.71	100.00%	$120,837	1,085.71
Project Supervisor	1	$83.17	135.71	100.00%	$90,300	1,085.71
Decontamination Tech	1	$89.37	135.71	100.00%	$97,035	1,085.71
Instrumentation Tech	1	$65.24	135.71	100.00%	$70,829	1,085.71
Tool Crib Attendant	1	$56.27	135.71	100.00%	$61,093	1,085.71
	13				$1,209,290	14,114.29

1.2.2	Waste Packaging Crew							7,536									$512,621							$512,621		
	Project duration =			190.00 135.71	days/7days/wk = working days		27.14	weeks		7.24	Months															

Staff	Number	Rate	Duration, days	Use Factor	Cost	Man-hours
Laborers	2	$66.34	150.71	100.00%	$199,965	3,014.29
H.P. Tech.	1	$51.00	150.71	100.00%	$76,864	1,507.14
Load Oper.	1	$86.30	150.71	100.00%	$130,070	1,507.14
Foreman	1	$70.15	150.71	100.00%	$105,722	1,507.14
	5				$512,621	7,535.71

1.2.3	Equipment & Materials															$624,885								$624,885		

Equipment	Quantity	Rate	Cost
Respirator	10	$321	$3,210
Reciprocating Saws	3	$1,309	$3,927
Pneumatic chipping hammers	2	$1,280	$2,560
Chipping hammer blades	20	$35	$706
Purchase an air compressor:	2	$1,369	$2,738
Jackhammer	2	$1,233	$2,466

Yankee Rowe ISFSI Decommissioning Cost Estimate Details

			Crew	Uncorrected Duration (No. of Hours)	Prod. Factor	Adjusted Duration	Man-hours	LSA Waste Disp. Vol (cf)	Hazardous Waste Vol (cf)	Ballast Volume (cf)	Mixed Waste Volume (cf)	Clean Waste Volume (cf)	Lead Waste Volume (cf)	Activated Waste Volume (cf)	Materials, Consumables, & Equipment	Labor Cost	LSA Waste Cost	Hazardous Waste Cost	Mixed Waste Cost	Clean Waste Cost	Lead Waste Cost	Activated Waste Cost	Total Cost	86.42% Radiological Removal $	13.58% Non-radiological Removal $
Jackhammer Chisels	20	$30	$600																						
Safety glasses	100	$12	$1,196																						
Fall protection - harness	3	$142	$426																						
Fall protection - lanyard	3	$218	$654																						
Hardhats	30	$43	$1,275																						
Hard hat hearing protection	30	$40	$1,205																						
Trailer rental	2	$840	$11,648																						
Portable toilets	3	$180	$3,744																						
Torch Rental	2	$280	$871																						
Front end loader, wheeled	1	$7,349	$30,423																						
Hydraulic hammer for excavator	1	$9,698	$40,147																						
Excavator	1	$25,688	$106,342																						
Grapple for excavator	1	$2,350	$9,728																						
Hydraulic hammer for excavator	1	$9,698	$34,731																						
Excavator	1	$25,688	$91,994																						
Dump trucks excavation and backfill	1	$20,407	$84,480																						
Water tank Trailer	1	$3,416	$14,141																						
Dust Boss DB 60	1	$850	$3,519																						
Dust Boss DB 60 transport	1	$3,000	$3,000																						
Man lift	1	$2,775	$11,488																						
			$467,216																						
Project duration =	126.00	days/7days/wk =	18.00 weeks		4.14 Months																				
	90.00	working days																							

Consumables	Quantity	Duration	# workers	quantity	Unit Qty	Unit Cost	Cost
Coveralls	2 /man/day	90.00 days	8.50	1,530	1	7	10,067
Shoe covers	4 /man/day	90.00 days	8.50	3,060	1	2	6,059
Latex gloves	4 /man/day	90.00 days	8.50	3,060	1	1	3,672
Rubber overshoes	0.01 /man/day	90.00 days	8.50	8	1	36	272
Gloves	0.5 /man/day	90.00 days	8.50	383	1	2	623
Dosimeters	1 /man/year	0.35 year	27.00	9	1	196	1,831
TLDs	1 /man/mo	4.14 month	27.00	112	1	36	3,966
Bioassays	2 /man/year	0.35 year	27.00	19	1	250	4,673
(Bioassays for aver. crew & management)							10,472
Small Tools - 2% of total labor costs =		$4,790.014 labor costs x	2.00%	=	$95,800		
DGC OH &P on equipment and materials		$642.487	8.00%	=	$51,397		

ACTIVITIES						2,178		2,178	13,034	54,427	0	0	0	648,352	0	0	$88,979	$956,389	$1,922,657	$0	$0	$190,301	$0	$0	$3,138,305	$2,712,151	$426,154
1.3	Project Engineering					80		80	240	0	0	0	0	0	0	0	$0	$21,108	$0	$0	$0	$0	$0		$21,108	$18,242	$2,866
1.3.1	Procedure Development and Review - Offsite					40	1.00	40	120									$10,554							$10,554		
	Staff	Number	Rate	Duration	PLF	Cost	Man-hours																				
	Project Specialist	2	$81.08	40	1.00	$6,487	80																				
	Project Manager	1	$101.69	20	1.00	$2,034	20																				
	Certified Health Physicist	1	$101.69	20	1.00	$2,034	20																				
		4		40		$10,554	120																				
1.3.2	Preparation of QA and Safety Documents - Offsite (in parallel with 1.2.1)					40	1.00	40	120									$10,554							$10,554		
	Staff	Number	Rate	Duration	PLF		Cost	Man-hours																			
	Project Specialist	2	$81.08	40	1.00		6,487	80																			
	Project Manager	1	$101.69	20	1.00		2,034	20																			
	Certified Health Physicist	1	$101.69	20	1.00		2,034	20																			
		4		40			10,554	120																			
1.4	Site Mobilization and General Employee Training (GET)					72	1.00	72	663								$37,075	$69,594							$106,669	$92,184	$14,485
1.4.1	Site Mobilization					24		24	312								$4,000	$23,198							$27,198		
	Crew		Rate, $/hr	Cost, $/hr																							
	1 Project Superintendent			$0.00	With Period Dependent costs																						
	1 QA Auditor/Inspector			$0.00	With Period Dependent costs																						
	1 Health & Safety Supervisor			$0.00	With Period Dependent costs																						
	1 Packaging/Shipping Specialist			$0.00	With Period Dependent costs																						
	1 Cost Control Accountant			$0.00	With Period Dependent costs																						
	1 Scheduler II			$0.00	With Period Dependent costs																						
	1 Demolition Specialist			$0.00	With Period Dependent costs																						
	1 Industrial Safety			$0.00	With Period Dependent costs																						
	1 Engineering Supervisor			$0.00	With Period Dependent costs																						
	1 Project Supervisor			$0.00	With Period Dependent costs																						
	2 Decontamination Tech			$0.00	With Period Dependent costs																						
	1 Instrumentation Tech			$0.00	With Period Dependent costs																						
	1 Tool Crib Attendant			$0.00	With Period Dependent costs																						
	2 Equip Oper		$86.30	$172.60																							
	7 Laborer		$66.34	$464.37																							
	2 Foreman		$70.15	$140.29																							
	2 Craftsman		$94.66	$189.31																							
	27			$966.58																							
	Travel to site		8	hr																							
	Receipt of material and equipment		4	hr																							
	Staging of equipment		4	hr																							
	Set up office and amenities		4	hr																							
	Familiarize staff with facility		4	hr																							
			24	hr																							
	Labor Cost =	24	x	$966.58	$23,198.01																						
	Travel cost =	10	x	$400.00	$4,000.00	For Contractor Management only																					
1.4.2	General Employee Training				40	1.00	40.00	135									$33,075	$36,663							$71,738		
	Crew		Rate, $/hr	Cost, $/hr																							
	1 Project Superintendent		$0.00	$0.00	With Period Dependent costs																						
	1 QA Auditor/Inspector		$0.00	$0.00	With Period Dependent costs																						
	1 Health & Safety Supervisor		$0.00	$0.00	With Period Dependent costs																						
	1 Packaging/Shipping Specialist		$0.00	$0.00	With Period Dependent costs																						
	1 Cost Control Accountant		$0.00	$0.00	With Period Dependent costs																						
	1 Scheduler II		$0.00	$0.00	With Period Dependent costs																						
	1 Demolition Specialist		$0.00	$0.00	With Period Dependent costs																						
	1 Industrial Safety		$0.00	$0.00	With Period Dependent costs																						
	1 Engineering Supervisor		$0.00	$0.00	With Period Dependent costs																						
	1 Project Supervisor		$0.00	$0.00	With Period Dependent costs																						
	2 Decontamination Tech		$0.00	$0.00	With Period Dependent costs																						
	1 Instrumentation Tech		$0.00	$0.00	With Period Dependent costs																						
	1 Tool Crib Attendant		$0.00	$0.00	With Period Dependent costs																						
	2 Equip Oper		$86.30	$172.60																							
	7 Laborer		$66.34	$464.37																							
	2 Foreman		$70.15	$140.29																							
	2 Craftsman		$94.66	$189.31																							
	27			$966.58																							
				Unit Cost	Number Required	Test Cost	Labor Costs	Total Cost																			

Yankee Rowe ISFSI Decommissioning Cost Estimate Details

					Crew	Uncorrected Duration (No. of Hours)	Prod. Factor	Adjusted Duration	Man-hours	LSA Waste Disp. Vol (cf)	Hazardous Waste Vol (cf)	Ballast Volume (cf)	Mixed Waste Volume (cf)	Clean Waste Volume (cf)	Lead Waste Volume (cf)	Activated Waste Volume (cf)	Materials, Consumables, & Equipment	Labor Cost	LSA Waste Cost	Hazardous Waste Cost	Mixed Waste Cost	Clean Waste Cost	Lead Waste Cost	Activated Waste Cost	Total Cost	86.42% Radiological Removal $	13.58% Non-radiological Removal $
		In-Vivo			$600	27	$16,200.00		16,200																		
		In-Vitro			$350	27	$9,450.00		9,450																		
		Physical @	4 hour and		$150	27	$4,050.00	$3,898.34	7,916																		
		Blood Tests	1 hour and		$125	27	$3,375.00	$966.58	4,342																		
		OSHA recertification - assume all certified	hour					$0.00	0																		
			5				$33,075.00	$4,832.92	37,908																		
1.4.3		Site Specific Training				8	1.00	8.00	216									$7,733							$7,733		
		Crew		Rate, $/hr	Cost, $/hr																						
		1 Project Manager		$0.00	$0.00	With Period Dependent costs																					
		1 QA Auditor/Inspector		$0.00	$0.00	With Period Dependent costs																					
		1 Health & Safety Supervisor		$0.00	$0.00	With Period Dependent costs																					
		1 Packaging/Shipping Specialist		$0.00	$0.00	With Period Dependent costs																					
		1 Cost Control Accountant		$0.00	$0.00	With Period Dependent costs																					
		1 Scheduler II		$0.00	$0.00	With Period Dependent costs																					
		1 Demolition Specialist		$0.00	$0.00	With Period Dependent costs																					
		1 Industrial Safety		$0.00	$0.00	With Period Dependent costs																					
		1 Engineering Supervisor		$0.00	$0.00	With Period Dependent costs																					
		1 Project Supervisor		$0.00	$0.00	With Period Dependent costs																					
		2 Decontamination Tech		$0.00	$0.00	With Period Dependent costs																					
		1 Instrumentation Tech		$0.00	$0.00	With Period Dependent costs																					
		1 Tool Crib Attendant		$0.00	$0.00	With Period Dependent costs																					
		2 Equip Oper		$86.30	$172.60																						
		7 Laborer		$66.34	$464.37																						
		2 Foreman		$70.15	$140.29																						
		2 Craftsman		$94.66	$189.31																						
		27			$966.58																						
1.5		Site Preparation - Performed by Staff			B	32.00	1.00	32.00	0									$14,404							$14,404	$12,448	$1,956
	1.5.1	Initial Site Survey				16.00	1.00	16.00																	$0		
		Estimated Duration	16 hrs																								
	1.5.2	Setup work areas				8.00	1	8.00																	$0		
	1.5.3	Decontamination Readiness Review				8.00	1.00	8.00																	$0		
1.6		Disconnect all utilities to work areas.				16.00		16.00	96								$0	$7,202							$7,202	$6,224	$978
	1.6.1	Electrical			B	8.00	1.00	8.00	48									$3,601							$3,601		
	1.6.2	Ventilation			B	4.00	1.00	4.00	24									$1,800							$1,800		
	1.6.3	Piping			B	4.00	1.00	4.00	24									$1,800							$1,800		
1.7		Removal inside security fence				1,333		1,333	9,328	84,427	0	0	0	2,171	0	0	$0	$667,753	$1,922,857	$0	$0	$6,285	$0	$0	$2,596,684	$2,535,505	$61,179
	1.7.1	Remove Guard Posts			A	5	1.00	4.71	33	0				272				$2,361	$0			$944			$3,305		$3,305
			Inventory	Number	Length, ft.	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF												
		Clean	Building	2			648.00		70.00%	194	0	2.00	hrs/ea.		1	4.00	Estimated										
		Clean	Concrete Pad	2			80.00	9,000.00	-30.00%	78	0	25.00	cu. yd./day		1	0.71	Use 2012 Means pg 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
									272	0						4.71											
			Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																	
			Clean		272.40	0.49	$0.00	$134.75	$809.68	944																	
			Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																	
	1.7.2	Instrument Enclosure				A	10	1.00	9.93	69	0			1,092				$4,975	$0			$3,400			$8,375		$8,375
			Inventory	Number	Length, ft.	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF												
		Clean	Building	1			1760.40		60.00%	880	1	8.00	hrs/ea.		1	8.00	Estimated										
		Clean	Concrete Pad	1			162.62	24,392.86	-30.00%	211	1	25.00	cu. yd./day		1	1.93	Use 2012 Means pg 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
									1,092	2						9.93											
			Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																	
			Clean		1,091.60	1.76	$0.00	$485.17	$2,915.24	3,400																	
			Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																	
	1.7.3	Remove VCCs					788	2	788	5,513	19,050		0	0	0	0	0	0	$0	$394,656	$814,167	$0	$0	$0	$0	$0	$1,208,823	$1,208,823	
	1.7.3.1	Exterior Concrete				A	201	1.00	200.86	1,406	16,320				0			$100,654	$511,356			$0			$612,010		
			Inventory		Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF												
		Contaminated	Remove concrete		16		12,553.80	1,883,040.00	-30.00%	16,320	52	25.00	cu. yd./day		1.35	200.86	Use 2012 Means pg 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
									16,320	52						200.86											
			Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																	
			Clean	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																	
			Contaminated	1,883,040.00	16,319.66	52.31	$20,922.67	$245,838.38	$244,795.20	511,356																	
	1.7.3.2	Steel liner				A	587	1.00	586.69	4,107	2,731				0			$294,001	$302,811			$0			$596,812		
			Inventory		Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF												
		Contaminated	Remove steel		16	9,040	2,276.68	1,115,083.20	-20.00%	2,731	31	0.06	hrs/sq. ft.		1.00	586.69	Unit Cost factor #2.										
									2,731	31						586.69											
			Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																	
			Clean	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																	
			Contaminated	1,115,083.20	2,730.82	30.97	$12,388.81	$145,460.13	$144,960.82	302,811																	
	1.7.4	Remove Concrete Pad				A	435	1.00	435.41	3,048	35,377				0			$218,193	$1,108,490			$0			$1,326,683	$1,326,683	
			Inventory		Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF												
									0.00%	0	0																
		Contaminated	Remove concrete				27,213.00	4,081,950.00	-30.00%	35,377	113	25.00	cu. yd./day		1.35	435.41	Use 2012 Means pg 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
									35,377	113						435.41											
			Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $	Diamond Wire cutting $/cuft	Diamond Wire cutting															
			Clean	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																	
			Contaminated	4,081,950.00	35,376.90	113.39	$45,355.00	$532,461.31	$530,953.50	1,108,490																	
	1.7.5	Remove Fence and Towers				A	75	1.00	75.29	527	0			702				$37,729	$0			$1,670			$39,399		$39,399
									Vol. Reduc.	Adjusted	# of																

Yankee Rowe ISFSI Decommissioning Cost Estimate Details

						Crew	Uncorrected Duration (No. of Hours)	Prod. Factor	Adjusted Duration	Man-hours	LSA Waste Disp. Vol (cf)	Hazardous Waste Vol (cf)	Ballast Volume (cf)	Mixed Waste Volume (cf)	Clean Waste Volume (cf)	Lead Waste Volume (cf)	Activated Waste Volume (cf)	Materials, Consumables, & Equipment	Labor Cost	LSA Waste Cost	Hazardous Waste Cost	Mixed Waste Cost	Clean Waste Cost	Lead Waste Cost	Activated Waste Cost	Total Cost	86.42% Radiological Removal $	13.58% Non-radiological Removal $
		Inventory	Number	Length, ft.	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	factor	Volume, cu. ft.	boxes				PLF														
	Clean	Fence		620		516.67		0.00%	517	1	445	ft/day		1.00	9.29			2012 RS Means 02 41 13.60 1700										
	Clean	Poles	66			29.74		0.00%	30	0	0.50	hrs/ea		1.00	33.00			Estimated										
	Clean	Footings	66			155.43	23,314.50	0.00%	155	0	0.50	hrs/ea		1.00	33.00			Estimated										
									702	1					75.29													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean		701.84	0.67	$0.00	$238.26	$1,431.74	1,670																			
		Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																			
1.7.6	Remove Light Towers				A		20	1.00	19.85	138	0				105				$9,850	$0			$250			$10,100		$10,100
		Inventory	Number	Length, ft.	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Ground Cable		1,220		1.41		0.00%	1	0	2200.00	LF/dav		1.00	0.55			2112 RS Means, p. 535 26 05 05.10 1940										
	Clean	Excavate buried pipe				1,800		0.00%	0	0	200	cu. yd./dav		1.00	2.67			2012 RS Means 31 23 16.13 0060										
		Backfill				1,800		0.00%	0	0	1,225	cu. yd./dav		1.00	0.44			2012 RS Means 31 23 23.14 3020										
	Clean	IR tower	4			28.19		0.00%	28	0	2.00	hrs/ea		1.00	8.00			Estimated										
	Clean	Tower base	4			75.36	11,304.00	0.00%	75	0	2.00	hrs/ea		1.00	8.00			Estimated										
									105	0					19.66													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean		104.96	0.13	$0.00	$35.63	$214.11	250																			
		Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8	Removal outside security fence				A		318	1.00	318	2,047	0	0	0	0	546,181	0	0	$0	$150,278	$0	$0	$0	$184,036	$0	$0	$334,315		$334,315
1.8.1	Remove Nuisance Fence				A		138	1.00	137.67	984	0				629				$68,987	$0			$1,497			$70,485		$70,485
		Inventory	Number	Length, ft.	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Fence		1,236		310.00		0.00%	310	0	445	ft/day		1.00	5.57			2012 RS Means 02 41 13.60 1700										
	Clean	Ground Cable		1,545		1.78		0.00%	2	0	2200.00	LF/dav		1.00	0.70			2112 RS Means, p. 535 26 05 05.10 1940										
	Clean	Excavate buried pipe				3,708		0.00%	0	0	200	cu. yd./dav		1.00	5.49			2012 RS Means 31 23 16.13 0060										
		Backfill				3,708		0.00%	0	0	1,225	cu. yd./dav		1.00	0.90			2012 RS Means 31 23 23.14 3020										
	Clean	Poles	125			23.06		0.00%	23	0	0.50	hrs/ea		1.00	62.50			Estimated										
	Clean	Footings	125			294.38	44,156.25	0.00%	294	0	0.50	hrs/ea		1.00	62.50			Estimated										
									629	1					137.67													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean		629.22	0.78	$0.00	$213.62	$1,283.61	1,497																			
		Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8.2	Retaining Wall				B		41	1.00	41.09	247	0				520,000				$18,494	$0			$27,840			$46,334		$46,334
		Inventory			Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Wall			1		2080.00	312,000.00	-30.00%	2,704	9	25.00	cu. yd./dav		1	24.65		Use 2012 Means as 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
	Clean	Footing			1		1386.67	208,000.00	-30.00%	1,803	6	25.00	cu. yd./dav		1	16.43		Use 2012 Means as 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
									4,507	14					41.09													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean	4,506.67	520,000.00	14.44	$0.00	$3,972.22	$23,868.00	27,840																			
		Contaminated	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8.3	Conduit and wire - Instrument Enclosure to Utility Pole				B		51	1.00	51.49	309	0				14				$23,175	$0			$33			$23,208		$23,208
		Inventory	Feet		Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Excavate buried pipe					630		0.00%	0	0	200	cu. yd./dav		1.00	0.93		2012 RS Means 31 23 16.13 0060										
	Clean	Buried pipe, clean	630				14		0.00%	14	0	100	L. F/dav		1.00	50.4		2012 mean. p463, 22 05 5.10 2100										
		Backfill					630		0.00%	0	0	1,225	cu. yd./dav		1.00	0.15		2012 RS Means 31 23 23.14 3020										
										14	0					51.49													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean	0.00	13.74	0.02	$0.00	$4.66	$28.02	33																			
		Contaminated	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8.4	Remove road inside licensed area				B		83	1.00	82.67	496	0				25,389				$37,210	$0			$153,705			$190,915		$190,915
		Inventory			Number	Weight, lbs	Area, sq. ft.	Volume, cu. Ft.	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Pavement				2,870,910	39,060	19530.00	-30.00%	25,389	80	420	S.Y./dav		1.00	82.67		2012 RS Means 02 41 13.17 5050										
									25,389	80					82.67													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean		25,389.00	79.75	$0.00	$21,930.56	$131,774.77	153,705																			
		Contaminated		0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8.5	Remove vehicle barriers				B		5	1.00	5.38	32					149				$2,412				$961			$3,373		$3,373
		Inventory	Feet		Number	Area, sq. ft.	Volume, cu. Ft.	Weight, Lbs	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of boxes				PLF														
	Clean	Foundation					114.64	17,196.00	-30.00%	149	0	25.00	cu. yd./dav		1	1.36		Use 2012 Means as 50, 02 41 13.33 4320, 25 c. y. per day. This rate is for a slab on grade using hand tools, use the same rate for this work with hydraulic equipment.										
	Clean	Gate assembly						752.00	0.00%	0	0	4.00	hrs		1.00	4.00		estimated										
										149	0					5.36													
		Waste	Weight, lbs	Volume	No. of containers	Container, $	Transport, $	Disposal, $	Total, $																			
		Clean	17,948.00	149.03	0.50	$0.00	$137.10	$823.81	961																			
		Contaminated	0.00	0.00	0.00	$0.00	$0.00	$0.00	0																			
1.8.10	Miscellaneous																											
1.9	Final Site Survey Structure zone - By DGC Staff						184.00	1.00	184.00	0									$26,000							$25,000	$21,605	$3,395

				Work hours		Schedule duration, days	
1.9.1	Prepare Final Status Survey Plan	45	days =	360	hrs	5	days - 40 days in parallel with decommissioning
1.9.2	Soil Sampling	5	days =	40	hrs	5	days
1.9.3	Direct Survey	3	days =	24	hrs	3	days
1.9.4	Sampling Analysis	10	days =	0	hrs	5	days - 8 days in parallel to 1.16.2 & 1.16.3

Yankee Rowe ISFSI Decommissioning Cost Estimate Details

					Crew	Uncorrected Duration (No. of Hours)	Prod. Factor	Adjusted Duration	Man-hours	LSA Waste Disp. Vol (cf)	Hazardous Waste Vol (cf)	Ballast Volume (cf)	Mixed Waste Volume (cf)	Clean Waste Volume (cf)	Lead Waste Volume (cf)	Activated Waste Volume (cf)	Materials, Consumables, & Equipment	Labor Cost	LSA Waste Cost	Hazardous Waste Cost	Mixed Waste Cost	Clean Waste Cost	Lead Waste Cost	Activated Waste Cost	Total Cost	86.42% Radiological Removal $	13.58% Non-radiological Removal $
1.9.5	Prepare Final Status Survey Report		10	days =	80	hrs	5	days - five days overlap with 1.16.4																			
					504		23																				
	Sampling analysis	$500.00	per sample x	50	samples =	$25,000.00																					
1.10	Orise Site Release Confirmation																									$0	$0
	This activity will occur in parallel with 1.8.																										
1.11	Outside areas				A	47.42	1.00	47.42	332	0	0.00	0.00	0.00	0.00	0.00	0.00	$2,904	$0	$0	$0	$0	$0	$0	$0	$2,904		$2,904
	1.11.1	Backfill, grade and seed			A	47.42	1.00	47.42	332								$2,904								$2,904		$2,904

Inventory	Width	Depth	Area, sq. ft.	Volume, cu. Ft.	Vol. Reduc. factor	Adjusted Volume, cu. ft.	# of 30 cu yd boxes			PLF		
Grade			87,120		0.00%	0	0	18000	sq ft/8 hr day	1.00	39	2009 RS Means 31 22 16.10 0100
Seed			87,120		0.00%	0	0	80100	sq ft/8 hr day	1.00	9	2009 RS Means 32 92 19.13 1000
						0	0				47.42	

Waste	Area, sq. ft.	Installation, $/SF	Material, $/SY	Equipment, $/SY	Volume, cu. Ft.	Cost, $/cu. yd.	Total, $	
Seed and equipment	87,120.00		$0.20	$0.10			2,904	2011 RS Means 32 92 19.13 1000
Structural fill						$34.67	0	2011 RS Means 31 05 16.10 0800 + 0900 & 31 23 23.24 0400
							2,904	

1.12	Demolition Crew Demobilization					16		16	208								$4,000	$15,465							$19,465	$16,822	$2,643

Crew		Rate, $/hr	Cost, $/hr	
1	Project Superintendent		$0.00	With Period Dependent costs
1	QA Auditor/Inspector		$0.00	With Period Dependent costs
1	Health & Safety Supervisor		$0.00	With Period Dependent costs
1	Packaging/Shipping Specialist		$0.00	With Period Dependent costs
1	Cost Control Accountant		$0.00	With Period Dependent costs
1	Scheduler II		$0.00	With Period Dependent costs
1	Demolition Specialist		$0.00	With Period Dependent costs
1	Industrial Safety		$0.00	With Period Dependent costs
1	Engineering Supervisor		$0.00	With Period Dependent costs
1	Project Supervisor		$0.00	With Period Dependent costs
2	Decontamination Tech		$0.00	With Period Dependent costs
1	Instrumentation Tech		$0.00	With Period Dependent costs
1	Tool Crib Attendant		$0.00	With Period Dependent costs
2	Equip Oper	$86.30	$172.60	
7	Laborer	$66.34	$464.37	
2	Foreman	$70.15	$140.29	
2	Craftsman	$94.66	$189.31	
27			$966.58	

Return rented equipment, including trailers	4	hr		
Dispose of unused material	4	hr		
General site cleanup	4	hr		
Travel home	4			
	16	hr		
Total Cost =	16	x	$966.58	$15,465.34
Travel cost =	10	x	$400.00	$4,000.00 For Contractor Management only

1.13	Final Project Report - Offsite				A	80.00	1.00	80.00	120									$10,554							$10,554	$9,121	$1,433

Staff	Number	Rate	Duration	PLF	Cost	Man-hours
Project Specialist	2	$81.08	40	1.00	$6,487	80
Project Manager	1	$101.69	20	1.00	$2,034	20
Certified Health Physicst	1	$101.69	20	1.00	$2,034	20
	4		80		$10,554	120