U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

NUREG-1307
Revision 20

Report on Waste Burial Charges

Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities

Draft Report for Comment

Office of Nuclear Material Safety and Safeguards

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ABSTRACT

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.75, "Reporting and Recordkeeping for Decommissioning Planning," the U.S. Nuclear Regulatory Commission (NRC) requires nuclear power reactor licensees to adjust annually, in current year dollars, their estimate of the cost to decommission their plants. The annual updates are part of the process for providing reasonable assurance that adequate funds for decommissioning will be available when needed. This NUREG, which is periodically revised, describes the formula in 10 CFR 50.75(c) that is acceptable to the NRC for determining the minimum decommissioning fund requirements for nuclear power reactor licensees. This formula is based on the estimated cost of decommissioning a reference pressurized-water reactor (PWR) and a reference boiling-water reactor (BWR) in 1986, and is escalated to current year dollars using an adjustment factor provided in 10 CFR 50.75(c)(2). The primary purpose of this report is to provide the technical basis, including references, for the estimated cost of decommissioning the reference PWR and reference BWR, and to develop the escalation factor for the low-level radioactive waste (LLW) burial cost portion of the adjustment factor. Escalation factors for the other portions of the adjustment factor (i.e., labor and energy costs), are also provided in this report.

This 20th revision of NUREG-1307, "Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities," contains burial cost escalation factors updated to the year 2024 for the reference PWR and for the reference BWR. As presented in Table 2-1, "Values of B_x as a Function of LLW Burial Site and Year," multiple burial cost escalation factors are provided that reflect various LLW burial scenarios for each reactor type. These were developed because licensees may have the option to dispose of LLW at one or more of the four currently operating LLW disposal facilities in the United States licensed by the NRC or Agreement States, and the cost of disposal varies among each of the four facilities. In addition, there are various limitations on LLW disposal facility access by reactors, based upon the state in which the reactor is located. The different LLW burial scenarios are described in detail in Section 1.2, "LLW Disposal Cost Scenarios."

The currently operating LLW disposal facilities that are licensed by the NRC or Agreement States are located in 1) Texas, 2) South Carolina, 3) Washington, and 4) Utah. The Texas, South Carolina, and Washington facilities are the host disposal sites for the Texas LLW Disposal Compact (Texas Compact), the Atlantic Interstate LLW Management Compact (Atlantic Compact), and the Northwest Compact on LLW Management (Northwest Compact), respectively (Appendix E provides additional information about LLW compacts), and are referred to in this report as compact-affiliated disposal facilities. The Washington LLW disposal facility also accepts LLW generated in the three member-states of the Rocky Mountain LLW Compact (Rocky Mountain Compact). The fourth site (Utah) is not associated with a specific LLW compact, and so is referred to in this report as a non-compact disposal facility. Nuclear power plant facilities located within LLW compacts that have compact-affiliated disposal facilities can dispose of their LLW at the affiliated disposal facility or, in some cases, can dispose of a portion of their LLW at the non-compact disposal facility. Nuclear power plants not located within a LLW compact having a compact-affiliated disposal facility can dispose of their LLW at either the Texas or Utah disposal facilities. The Utah facility accepts only Class A LLW while the Texas compact-affiliated facility will accept Class A, B, and C LLW (see Section 1.1 for definitions of these LLW classes). For plants that have no disposal site available within their designated LLW compact, this report assumes that the cost for disposal of Class A LLW is the same as that for the Utah disposal facility, and the cost for disposal of Class B and C LLW is the same as that for the Texas disposal facility, and includes accounting for out-of-compact fees.

In the 2023 decommissioning fund status reporting cycle, in which licensees provided decommissioning trust fund data to the NRC by March 31, 2023, as required by 10 CFR 50.75(f), 71 of the 93 operating reactors in the U.S. applied LLW burial cost escalation factors based on the Table 2-1 scenario in which generators are located in States that do not have a compact-affiliated LLW disposal facility. In this current revision to NUREG-1307, estimated 2024 disposal costs for this scenario are approximately 9.5 percent lower for the reference PWR and 5.2 percent lower for the reference BWR compared to 2022 disposal costs. For the reference PWR and BWR, decrease in disposal costs are due to decreases in disposal fees for the Clive disposal facility.

In the same 2023 NRC reporting cycle, four of the 93 operating plants in the U.S. applied LLW burial cost escalation factors based on the Table 2-1 scenario in which compact affiliated generators used only the Texas compact-affiliated LLW disposal facility. In this current revision to NUREG-1307, the estimated 2024 disposal costs for the Texas compact-affiliated LLW disposal facility are generally unchanged for the reference PWR and BWR, compared to 2022 disposal costs.

Also, in the 2023 NRC reporting cycle, 13 of the 93 operating plants in the U.S. applied LLW burial cost escalation factors based on the Table 2-1 scenarios in which Atlantic Compact-affiliated generators used only the South Carolina compact-affiliated LLW disposal site or used a combination of both the South Carolina compact-affiliated disposal site and the non-compact disposal facility. (The South Carolina disposal site accepts LLW from facilities located in South Carolina, New Jersey, and Connecticut, all members of the Atlantic Compact.) In this current revision to NUREG-1307, estimated 2024 disposal costs using only the South Carolina compact-affiliated LLW disposal site are approximately 1.2 percent higher for the reference PWR and 1.7 percent higher for the reference BWR compared to 2022 disposal costs. The estimated disposal costs using the combination of both the South Carolina disposal site and the non-compact disposal facility are approximately 8.9 percent lower for the PWR and approximately 3.4 percent lower for the BWR compared to 2022 disposal costs. Increases in disposal costs were due to increases in charges for weight, activity (or curie), and irradiated hardware. Decrease in disposal cost using the combination of both the South Carolina disposal site and the non-compact disposal facility are due to decreases in the charges at the non-compact disposal facility.

Lastly, in the 2023 NRC reporting cycle, one of the 93 operating plants in the U.S. applied a LLW burial cost escalation factor based on the Table 2-1 scenario in which a compact affiliated generator used only the Washington disposal site. The estimated 2024 disposal cost using only the Washington disposal site, which accepts LLW from the 11 member-states of the Northwest and Rocky Mountain Compacts, are approximately 32.4 percent and 31.5 percent higher for the reference PWR and BWR, respectively, compared to 2022 disposal costs. Increases in disposal costs were due to increases in LLW volume, shipment, container, and dose rate charges.

Licensees may use the escalation factors from this NUREG in their cost analyses, or, per regulation at 10 CFR 50.75(b)(1), they may generate and report site-specific cost estimates that result in a total cost estimate of no less than the amount estimated by using the 10 CFR 50.75(c) formula and cost escalation factors presented in this NUREG. In the 2023 NRC reporting cycle, four of the 93 operating plants in the U.S. reported cost data using site-specific cost estimates.

Revision 20 to NUREG-1307 assumes that LLW generated from day-to-day plant operations would be disposed of using the licensee's operating funds, and thus would not rely on

decommissioning funds identified in the formula calculation. However, facilities located in states that are members of a LLW compact with no available LLW disposal site may be forced to provide interim storage for this waste (although most LLW could potentially be disposed of at a non-compact disposal facility, such as the facility located in Utah, or at the compact-affiliated disposal facility located in Texas). Accordingly, some of the LLW may ultimately need to be disposed of during decommissioning following interim storage. For those plants operating through extended license terms, this volume can become significant, and the disposal cost would not be accounted for in a decommissioning trust fund based on the formula calculation.

FOREWORD

Nuclear power reactor licensees are required by 10 CFR 50.75, “Reporting and Recordkeeping for Decommissioning Planning,” to annually adjust the estimated decommissioning costs of their nuclear facilities to ensure adequate funds are available for decommissioning. The regulation (10 CFR 50.75(c)(2)) references NUREG-1307 as the appropriate source for obtaining the escalation factor for waste burial/disposition costs. This 20th revision of NUREG-1307 provides current, as of July 2024, waste burial/disposition costs using the compact-affiliated disposal facilities located in Andrews County, Texas; Barnwell, South Carolina; and Richland, Washington, and the non-compact disposal facility in Clive, Utah. In addition, this revision includes a disposal cost scenario that provides for disposal of low-level waste (LLW) using a combination of non-compact and compact-affiliated disposal facilities. Licensees can factor these numbers into the adjustment formula, as specified in 10 CFR 50.75(c)(2), to determine the minimum decommissioning fund requirement for their nuclear facilities. Although this NUREG is specifically prepared for the use of power reactor licensees, it also can be a valuable source of information for material licensees on current waste burial/disposition costs.

On July 1, 2000, the South Carolina disposal facility became the host disposal facility for the newly formed Atlantic Compact, comprised of the States of Connecticut, New Jersey, and South Carolina. Effective July 1, 2008, LLW from States that are not members of the Atlantic Compact was no longer accepted at the South Carolina disposal facility. The South Carolina Public Service Commission annually determines the costs of waste disposal at the South Carolina disposal facility and provides the site operator with an allowable operating margin.

The Richland, Washington facility only accepts LLW from the Northwest and Rocky Mountain Compacts. The Northwest Compact is comprised of the States of Idaho, Montana, Oregon, Utah, Washington, Wyoming, Alaska, and Hawaii. The Rocky Mountain Compact is comprised of the States of Colorado, Nevada, and New Mexico. The costs of disposal for this facility are determined annually based on waste generator volume projections and a maximum annual operator revenue set by the Washington Utilities and Transportation Commission. If the total operator revenue is exceeded in a given year, a rebate may be sent to the waste generator.

The Texas Compact Waste Facility (CWF), located in Andrews County, Texas, accepts LLW from both the Texas Compact and out-of-compact generators. The fees for LLW disposal are determined by the Texas Commission on Environmental Quality. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity.

Since the South Carolina and Washington LLW disposal facilities are available only to licensees located within their respective compacts, an alternative available to licensees is to dispose of decommissioning Class A LLW at a non-compact disposal facility. Costs for this scenario are based on a price quote received from the operator of the non-compact disposal facility located in Utah. Revision 20 to NUREG-1307 provides waste burial/disposition cost escalation factors for this scenario, in addition to the standard scenario of disposing of 100-percent of decommissioning LLW at a compact-affiliated disposal facility.

In addition to currently available, traditional LLW disposal alternatives using licensed facilities, staff continues to evaluate LLW disposal trends and evolving industry practices that may impact minimum decommissioning fund formula cost calculations provided for in 10 CFR 50.75. The

U.S. Nuclear Regulatory Commission (NRC) is aware that some LLW disposal methods, such as the disposal of very low-level radioactive waste at other-than traditional LLW sites, and other alternatives, such as may be authorized under 10 CFR 20.2002, "Method for obtaining approval of proposed disposal procedures," may be less costly than disposal at traditional LLW sites. A new section, 3.6, “Low Activity Waste,” is included in this revision (Revision 20), which provides information about this category of LLW and the potential for its disposal at sites other than the four currently operating LLW disposal facilities licensed by the NRC or Agreement States. The NRC plans to further evaluate this disposal alternative during the next 18 months in preparation of Revision 21 of this guidance document. As part of its evaluation, NRC will engage the public and industry, as well Tribal, Federal, and local governments, to better understand the availability of and anticipated reliance by power reactor licensees on this alternative disposal method. Based on the outcome of its engagements and research, NRC envisions the next revision of this document to incorporate LLW burial cost escalation factor and other cost-related information associated with low activity waste disposal at other-than-traditional LLW sites.

Revision 20 to NUREG-1307 assumes that LLW generated during plant operations is disposed of using operating funds. Nuclear power plants that are members of a LLW Compact that has no disposal site available for LLW may need to provide interim storage for this waste, although most LLW may be able to be disposed of at the non-compact disposal facility located in Utah or at the compact-affiliated disposal facility located in Texas. The LLW volume could be significant for plants with extended operating periods (e.g., beyond 40-years), and the disposal cost of this additional volume would not be accounted for in a decommissioning trust fund based on the formula calculation.

For licensees with no disposal site available within their designated LLW Compact, NUREG-1307, Revision 20, assumes that the cost for disposal of Class A LLW is the same as that for the Utah disposal facility, and the cost for disposal of Class B and C LLW is the same as that for the Texas disposal facility including accounting for out-of-compact fees. Accordingly, given these considerations, licensees may want to set aside additional funds to cover associated future decommissioning costs.

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ABBREVIATIONS AND ACRONYMS

BIO	biological
BLDG	building
BLS	U.S. Department of Labor, Bureau of Labor Statistics
BWR	boiling water reactor
B_x	LLW burial cost escalation factor
CFR	Code of Federal Regulations
CHG	charge
CNS	Chem-Nuclear Systems, L.L.C.
CONTAINM	containment
CONTAM	contaminated
DHEC	South Carolina Department of Health and Environmental Control
ECI	Employment Cost Index
EHx	excess letdown heat exchanger
E_x	energy cost escalation factor
ft^3	cubic foot
F_x	cost escalation factor for diesel and other fuels for transportation and other heavy equipment operation
gal	gallon
GTCC	greater-than-Class C LLW
ID	identification number
ISFSI	independent spent fuel storage installation
lbs	pounds
LLRWPAA	Low-Level Radioactive Waste Policy Amendments Act of 1985
LLW	low-level radioactive waste
L_x	labor cost escalation factor
MATRL or Matl	material
Misc	miscellaneous
mR/h	millirem per hour
MWt	megawatt-thermal
NA	not available
NPP	nuclear power plant
NRC	U.S. Nuclear Regulatory Commission
P	reactor power level
P_x	cost escalation factor for industrial electric power
PNNL	Pacific Northwest National Laboratory
PPI	Producer Price Index
PWR	pressurized water reactor
RAD	radioactive
RCRA	Resource Conservation and Recovery Act

RCW	Revised Code of Washington
REACT	reactor
R/hr	rem per hour
R.Hx	regenerative heat exchanger
SAC	sacrificial
SMR	small modular reactor
TAC	Texas Administrative Code
TG	turbine-generator
TMI	Three Mile Island Unit 2 Nuclear Power Plant
U.S.	United States
VEN	vendor

1 INTRODUCTION

Nuclear power reactor licensees are required by Title 10 of the *Code of Federal Regulations* (10 CFR) 50.75, "Reporting and Recordkeeping for Decommissioning Planning," to annually adjust the estimated decommissioning costs (in current year dollars) of their nuclear facilities to ensure adequate funds are available for decommissioning. This is one step of a multi-step process for providing reasonable assurance to the U.S. Nuclear Regulatory Commission (NRC) that adequate funds for decommissioning are planned for and accumulated beginning in licensing and through operations. NUREG-1307 provides escalation factors for the waste burial/disposition component of the decommissioning funding formula, as required by 10 CFR 50.75(c)(2). This NUREG also provides the regional escalation factors for the labor and energy components of the decommissioning fund requirement. Together, these escalation factors are used to adjust the NRC minimum decommissioning fund requirement by means of an "adjustment factor." The term "adjustment factor," as used in this NUREG and in 10 CFR 50.75(c)(2), refers to increases and decreases in estimated decommissioning costs subsequent to issuance of the 10 CFR 50.75 regulations. The base decommissioning fund requirements in these regulations were established in 1986 dollars. The adjustment factor escalates the cost, in 1986 dollars, to costs in today's dollars. This NUREG is updated periodically to reflect changes in waste burial/disposition costs and accounts for changes in the labor and energy values.

This NUREG provides the development of a formula for estimating decommissioning costs that are acceptable to the NRC. Sources of information used in the formula are identified. Values developed for the escalation of radioactive waste burial/disposition costs, by site and by year, are also provided. Licensees may use the formula, the coefficients, and the burial/disposition cost escalation factors from this NUREG in their analyses, or they may use an adjustment rate at least equal to the approach presented herein.

The formula and its coefficients, together with guidance to other data sources needed to complete the formula calculation, (i.e., U.S. Department of Labor, Bureau of Labor Statistics), are summarized in Chapter 2. The development of the formula and its coefficients, with sample calculations, are presented in Chapter 3. Price schedules for LLW burial/disposition for the year 2024 are given in Appendix A for compact-affiliated and non-compact disposal facilities. Calculations to determine the burial/disposition escalation factors, B_x, for each site and year of evaluation are summarized in Appendix B.

1.1 Definitions

This section provides the definition of key terms utilized throughout this NUREG.

Low-level radioactive waste (LLW). LLW is a general term for a wide range of items that have become contaminated with radioactive material or have become radioactive through exposure to neutron radiation. Radioactive materials are present at nuclear power plants undergoing decommissioning as the result of plant operations prior to permanent shutdown and as the result of decommissioning activities. Examples include radioactively contaminated equipment, piping, tanks, hardware, and tools; concrete debris and soil; liquid radioactive waste (radwaste) treatment residues; and radioactively contaminated protective shoe covers and clothing; cleaning rags, mops, and filters. The radioactivity in these wastes can range from just above natural background levels to much higher levels, such as seen in components from inside the reactor vessel of a nuclear power plant. LLW from decommissioning activities is typically shipped to a disposal site specifically licensed for disposal of LLW.

LLW Classification. 10 CFR 61.55(a)(2) defines three classes of LLW acceptable for routine near-surface disposal based on its radiological and physical characteristics:

(i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste must meet the minimum requirements set forth in § 61.56(a). If Class A waste also meets the stability requirements set forth in § 61.56(b), it is not necessary to segregate the waste for disposal. (e.g., dry active waste, protective shoe covers and clothing)

(ii) Class B waste is waste that must meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste must meet both the minimum and stability requirements set forth in § 61.56. (e.g., primary resin, primary filters)

(iii) Class C waste is waste that not only must meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste must meet both the minimum and stability requirements set forth in § 61.56. (e.g., radioactive components)

LLW Compacts. The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA) makes each state responsible for disposing of the LLW generated within its boundaries and establishes a mechanism for states to enter into compacts to establish regional LLW disposal facilities. Appendix E identifies the compacts that have been formed and the states affiliated with each. Appendix E also identifies the states that are not affiliated with any compact.

Compact-affiliated Disposal Facility. A Compact-affiliated Disposal Facility is a LLW disposal facility that has been established by a compact in accordance with the LLRWPAA. Four compacts, representing 16 states, have established three LLW disposal facilities: (1) Northwest Compact and Rocky Mountain Compact – U.S. Ecology disposal facility located in Richland, Washington, (2) Atlantic Compact – EnergySolutions disposal facility located in Barnwell, South Carolina, and (3) Texas Compact – Waste Control Specialists disposal facility located in Andrews County, Texas.

Non-compact Disposal Facility. A Non-compact Disposal Facility is a LLW disposal facility that was established outside of the framework of the LLRWPAA and is not affiliated with a compact. An example discussed in this report is the EnergySolutions disposal facility located in Clive, Utah.

Low Activity Waste. Low Activity Waste is a subset of Class A LLW. There is no regulatory definition for this category of waste. The specific definition in terms of waste acceptance criteria is established by each disposal facility with approval by the applicable state regulator.

1.2 LLW Disposal Cost Scenarios

NUREG-1307, Revision 20, contains disposal costs updated to the year 2024 for the reference pressurized-water reactor (PWR) and the reference boiling-water reactor (BWR). Updated disposal costs were developed for three scenarios reflecting alternatives by which nuclear power plant (NPP) licensees may dispose of low-level waste (LLW) generated from decommissioning activities. The first scenario assumes that 100-percent of the LLW generated during decommissioning is disposed of at one of the three compact-affiliated disposal facilities located in Washington, South Carolina, and Texas. Year 2024 LLW burial cost escalation factor

(Bx) escalation factors, expressed as a ratio of 2024 disposal costs to the original 1986 disposal costs, are also provided. For historical purposes, disposal costs for the reference reactors and Bx escalation factors for the year 2022 are also provided. See previous revisions of NUREG-1307 for disposal costs prior to 2022.

The second scenario provides for disposing of LLW using a combination of non-compact and compact-affiliated disposal facilities. For a PWR under this scenario, 93-percent of the LLW is assumed to be disposed of at a non-compact disposal facility (Utah) and the remaining 7-percent is assumed to be disposed of at a compact-affiliated disposal facility. For a BWR under this scenario, 95-percent of the LLW is assumed to be disposed of at a non-compact disposal facility (Utah) and the remaining 5-percent is assumed to be disposed of at a compact-affiliated disposal facility.

The third scenario provides for disposing of all LLW at non-compact disposal facilities or compact-affiliated disposal facilities that accept out-of-compact waste.

The second and third scenarios, which are considered acceptable alternatives for licensees, allow NPP licensees to take advantage of potentially lower disposal costs for much of their LLW. Bx escalation factors for each of these scenarios are also provided.

NUREG–1307, Revision 20, assumes that LLW generated during plant operations is disposed of using operating funds. Plants that are members of a LLW Compact that has no compact-affiliated disposal site available for LLW may be forced to provide interim storage for this waste (although most LLW may be able to be disposed of at the non-compact disposal facility located in Utah or at the compact-affiliated disposal facility located in Texas). Some of this waste may ultimately need to be disposed of during decommissioning. This LLW could be significant for plants with extended operating periods (e.g., beyond 40 years), and the disposal cost of this additional volume would not be accounted for in a decommissioning trust fund based on the formula calculation.

For plants that have no disposal site available within their designated LLW Compact, NUREG-1307, Revision 20, assumes that the cost for disposal of Class A LLW is the same as that for the Utah disposal facility, and that the cost for disposal of Class B and C LLW is the same as that for the Texas disposal facility, including accounting for out-of-compact fees. As new disposal scenarios become available, they will be incorporated into subsequent revisions of NUREG-1307.

2 DECOMMISSIONING COST ELEMENTS

The elements of decommissioning costs under 50.75(c)(2) are assigned to three categories: (1) those that are proportional to labor costs, L_x; (2) those that are proportional to energy costs, E_x; and (3) those that are proportional to burial costs, B_x. The adjustment of the total decommissioning cost estimate can be expressed by:

Estimated cost (Year X) = [1986 $ cost] [$A*L_x + B*E_x + C*B_x$]

where A, B, and C are coefficients representing the percent or portion of the total 1986 dollar costs attributable to labor (0.65), energy (0.13), and burial (0.22), respectively, and sum to 1.0. The factors L_x, E_x, and B_x are defined by:

L_x = labor cost escalation factor, January of 1986 to the latest month of Year X for which data are available,

E_x = energy cost escalation factor, January of 1986 to the latest month of Year X for which data are available, and,

B_x = LLW burial/disposition cost escalation factor, January of 1986 to the latest month of Year X for which data are available.

For labor and energy cost escalation factors used in calculating the total decommissioning cost estimate for years subsequent to 1986, L_x and E_x are based on the U.S. Department of Labor, Bureau of Labor Statistics (BLS) national producer price indexes, national consumer price indexes, and local conditions for a given site (see Chapter 3).

B_x is evaluated by recalculating the costs of burial/disposition of the radioactive wastes from the reference PWR (Reference 1) and the reference BWR (Reference 2) based on the price schedules provided by the available disposal facilities for the year of interest. The results of these recalculations are presented in Table 2-1, by site and by year. These recalculations are performed by an NRC contractor.

Effective January 1, 1993, radioactive waste from states that are not members of the Northwest Compact (comprised of Idaho, Montana, Oregon, Utah, Washington, Wyoming, Alaska, and Hawaii) or Rocky Mountain Compact (comprised of Colorado, Nevada, and New Mexico) was no longer accepted at the Washington disposal site.

Effective July 1, 2000, the South Carolina LLW burial site applied different price schedules for waste from states within and outside the then newly created Atlantic Compact (comprised of South Carolina, Connecticut, and New Jersey). Effective July 1, 2008, radioactive waste from States that are not members of the Atlantic Compact was no longer accepted at the South Carolina disposal site.

Beginning in the Spring of 2012, a new LLW disposal facility became available for disposal of waste from states within the Texas Compact (comprised of Texas and Vermont). Disposal costs for this facility were included in NUREG-1307 Revision 16 for the first time.

Licensees not located in the Northwest, Rocky Mountain, Atlantic, or Texas Compacts are generators located in states not affiliated with a LLW Compact having a compact-affiliated LLW

disposal facility. These generators should use the B_x values for the scenario in Table 2-1 named "B_x Values for Generators Located in the Unaffiliated States and those Located in Compact-Affiliated States having no Disposal Facility" (see footnote (c) in Table 2-1).

Effective with Revision 15 of this NUREG (ML130223A030, January 2013), B_x values were developed for two scenarios for each of the compact-affiliated disposal sites. These are "Compact-Affiliated Disposal Facility Only" and "Combination of Compact-Affiliated and Non-Compact Disposal Facilities.". The B_x values for these scenarios are provided in Table 2-1 (see footnotes (d) and (e) in Table 2-1). The decision rests with the licensees to determine the scenario that best represents their particular situation.

Table 2-1 Values of B_x as a Function of LLW Burial Site and Year[a]

	B_x Values for Washington Site				B_x Values for South Carolina Site				B_x Values for Texas Site[b]				B_x Values for Generators Located in the Unaffiliated States and those Located in Compact-Affiliated States having no Disposal Facility[c]	
	Compact-Affiliated Disposal Facility Only[e]		Combination of Compact-Affiliated and Non-Compact Disposal Facilities[d,e]		Compact-Affiliated Disposal Facility Only[e]		Combination of Compact Affiliated and Non-Compact Disposal Facilities[d,e]		Compact-Affiliated Disposal Facility Only[e]		Combination of Compact Affiliated and Non-Compact Disposal Facilities[d,e]			
Year	PWR	BWR*	PWR	BWR	PWR	BWR*	PWR*	BWR*	PWR*	BWR	PWR	BWR	PWR*	BWR*
2024	13.260	11.274	9.471	8.596	39.197	34.514	12.813	15.017	6.650	6.009	10.923	9.862	12.405	11.658
2022	10.013	8.571	10.526	8.865	38.742	33.934	14.067	15.550	6.650	6.014	12.229	10.497	13.711	12.296
2020	11.019	9.328	8.866	7.549	32.973	28.727	11.679	12.948	8.040	7.399	11.016	10.359	12.793	12.837
2018	10.854	9.118	8.697	7.186	32.329	28.314	11.607	12.872	8.508	8.293	11.054	10.731	12.853	13.422

(a) The values shown in this table for the years 2024 and 2022 are developed in Appendix B, with all values normalized to the 1986 Washington PWR and BWR values by dividing the calculated burial costs for each site and year by the Washington site burial costs calculated for the year 1986. Refer to previous revisions of NUREG-1307 for development of values prior to 2024.

(b) Effective with NUREG-1307, Revision 16, the Compact Waste Facility (CWF) in Andrews County, Texas, is available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States affiliated with the Texas Compact.

(c) Effective with NUREG-1307, Revision 16, the CWF in Andrews County, Texas, is also available as a full-service (i.e., Class A, B, and C) LLW disposal facility for waste generators located in States not affiliated with the Texas Compact. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The State of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and imposes additional fees on LLW disposed of from out-of-compact generators. With the availability of this full-service disposal facility to out-of-compact waste generators and the Clive, Utah disposal facility for any Class A LLW generated in the U.S., the Generic LLW Disposal Site scenario used in previous versions of NUREG-1307 is replaced with this scenario, which provides B_x values representing a composite of the disposal rates for these two disposal facilities. These B_x factors are recommended for use for plants that currently have no disposal site available within their designated LLW Compact.

(d) Effective with NUREG-1307, Revision 14, the bulk of the LLW is assumed to be dispositioned at the Clive, Utah disposal facility.

(e) Effective with NUREG–1307, Revision 15, the nomenclature for the two disposal scenarios was changed to “Compact-Affiliated Disposal Facility Only” and “Combination of Compact-Affiliated and Non-Compact Disposal Facilities” to better describe these scenarios.

(*) The seven columns highlighted with an asterisk reflect B_x LLW burial cost escalation factor data used by the 89 operating power reactor licensees that utilized the minimum decommissioning fund formula in decommissioning trust fund status reports submitted to the NRC in 2023

3 DEVELOPMENT OF COST ESCALATION FACTORS AND COST ADJUSTMENT FACTOR

The minimum decommissioning fund requirement, or minimum formula amount, for radiological decommissioning of a nuclear power plant, was established using January 1986 dollars, and is defined in 10 CFR 50.75(c) as follows (where P is power level of the nuclear power reactor in megawatt-thermal (MWt))[1]:

For a PWR (10 CFR 50.75(c)(1)(i)) –

Greater than or equal to 3400 MWt.……$105 million

Between 1200 MWt and 3400 MWt.……$(75 + 0.0088P) million
(For a PWR of less than 1200 MWt, use P=1200 MWt)

For a BWR (10 CFR 50.75(c)(1)(ii)) –

Greater than or equal to 3400 MWt.……$135 million

Between 1200 MWt and 3400 MWt.……$(104 + 0.009P) million
(For a BWR of less than 1200 MWt, use P=1200 MWt)

The minimum formula amount represents an actual base-year (1986) cost estimate to decommission a nuclear power plant. These 1986 costs are derived from studies finalized in the late 1970s and early 1980s (References 6 and 7) and adjusted to 1986 dollars through addendums to these PWR and BWR documented studies (References 1 and 2).

Present day minimum formula amounts rely on an adjustment factor that is applied to the initial cost estimate. In this way, the adjustment factor accounts for, or escalates, the initial formula amount to a dollar figure that incorporates inflation and other cost escalation factors.

In 10 CFR 50.75(c)(2), the adjustment factor is defined to be at least equal to 0.65L + 0.13E + 0.22B, where L and E are cost escalation factors for labor and energy, respectively, and values are to be taken from regional BLS data, and B is a cost escalation factor for waste burial and is to be taken from this report.

In summary, the adjustment factor incorporated in 10 CFR 50.75(c)(2) provides a mechanism for escalating the decommissioning fund requirement (minimum formula amount) to current year dollars to reflect inflation and other changes in economic conditions since January 1986. This section summarizes how the coefficients (i.e., 0.65, 0.13, and 0.22) in the adjustment factor were originally developed and provides updated L, E, and B cost escalation factors for use in calculating the minimum decommissioning fund requirement in current year (2024) dollars.

[1] The energy input in a heat engine is measured as MWt.

3.1 Development of the Cost Adjustment Factor

For the purpose of adjusting the 1986 minimum decommissioning formula cost estimate into today's dollars, the NRC, working with Pacific Northwest National Laboratory, determined that the total decommissioning cost could be divided into three principal components (major cost drivers) for cost escalation purposes. These components are: (1) labor, materials, and services, (2) electric power and diesel or other fuels for transportation, and (3) radioactive waste burial/disposition. The major elements contributing to each of these three components are provided in Table 3-1. The percent, or portion, of the total decommissioning cost, in January 1986 dollars, categorized as labor, materials, and services, is defined by the coefficient A. The percent, or portion, of the total decommissioning cost, in January 1986 dollars, categorized as energy and radioactive waste transportation, is defined by the coefficient B. The percent, or portion, of the total decommissioning cost, in January 1986 dollars, categorized as radioactive waste burial/disposition, is defined by the coefficient C.

Table 3-1 Evaluation of the Coefficients A, B, and C in January 1986 Dollars

	Reference PWR Values		Reference BWR Values	
Cost Category	**1986 $ (millions)**	**Coefficient**	**1986 $ (millions)**	**Coefficient**
Staff Labor	17.98[a]		35.12[b]	
Special Equipment	1.64[a]		4.03[b	
Misc. Supplies	3.12[a]		3.71[b]	
Specialty Contractor	12.9[a]		21.1[b]	
Nuclear Insurance	1.9[a]		1.9[b]	
Containers	10.9[d]		8.14[c]	
Added Staff	7.5[a]		4.4[b]	
Added Supplies	1.2[a]		0.2[b]	
Spec. Contractor	0.78[a]		0.71[b]	
Pre-engineering	7.4[a]		7.4[b]	
Post-TMI-backfits	0.9[a]		0.1[b]	
Environmental Surveillance	0.31[a]		--	
License Fees	0.14[a]		0.14[b]	
Subtotal	**66.67**	**A = 0.64**	**86.95**	**A = 0.66**
Energy	8.31[a]		8.84[b]	
Transportation	6.08[d]		7.54[c]	
Subtotal	**14.39**	**B = 0.14**	**16.38**	**B = 0.12**
Burial	22.48[d]	**C = 0.22**	29.98[c]	**C = 0.22**
Total	**103.54**		**133.31**	

Note: All costs include a 25-percent contingency factor.
(a) Based on Table 3.1, NUREG/CR-0130, Addendum 4.
(b) Based on Table 3.1, NUREG/CR-0672, Addendum 3.
(c) Based on Table 5.2, NUREG/CR-0672, Addendum 3.
(d) Based on Table 6.2, NUREG/CR-0130, Addendum 4.

Per Table 3-1, the C (LLW burial associated) coefficient, or that percentage representing the portion of decommissioning cost attributable to LLW burial charges, are the same (.22) for both PWRs and BWRs. The A (labor associated) and B (energy associated) coefficients differ only slightly between the two reactor types. Consequently, due to the close similarity in these coefficients, and uncertainty contained within the labor and energy assessments used in developing the minimum formula, the formula in 10 CFR 50.75(c)(2) was simplified. The simplified formula is a composite of the two reactor types by averaging the A and B coefficients derived from the separate PWR and BWR estimates. Hence, the 10 CFR 50.75(c)(2) formula for determining the decommissioning cost of both PWR and BWR reactor types assume the same coefficients, as follows:

$$A_{average} = 0.65 \qquad B_{average} = 0.13 \qquad C_{average} = 0.22$$

All costs categorized as labor, materials, and services are escalated from 1986 dollars to current year dollars by multiplying coefficient A (0.65) by a labor cost escalation factor L_x. All costs categorized as energy and radioactive waste transportation are escalated from 1986 dollars to current year dollars by multiplying coefficient B (0.13) by an energy cost escalation factor E_x. Values for L_x and E_x for years subsequent to 1986 are based on the national producer price indexes, national consumer price indexes, and local conditions for a given site, as described below in Sections 3.2 and 3.3, respectively. All costs categorized as radioactive waste burial/disposition are escalated from 1986 dollars to current year dollars by multiplying coefficient C (0.22) by a burial cost escalation factor B_x. The values to be used in determining B_x are derived from published cost schedules at the three compact-affiliated disposal facilities and a price quote from the non-compact disposal facility located in Utah, as described in Section 3.4.

Note that values for B_x for year 2022 and earlier, are provided in Table 2-1 for information purposes only; licensees will need only the 2024 figures for the minimum formula calculation required by March 31, 2025.

In summary, a simple equation was developed and incorporated into 10 CFR 50.75(c) to determine the minimum decommissioning fund requirement, or minimum formula amount, escalated to current year dollars. This equation is as follows:

Estimated cost (Year X) = [1986 $ Cost]*($A*L_x + B*E_x + C*B_x$) where:

Estimated cost (Year X) = estimated decommissioning costs in Year X (e.g., 2024) dollars,

[1986 $ Cost] = estimated decommissioning costs in 1986 dollars (base cost for PWR/BWR in 1986 dollars),

A = percent or portion (also referred to as coefficient) of the [1986 $ Cost] attributable to labor, materials, and services (0.65),

B = percent or portion (also referred to as coefficient) of the [1986 $ Cost] attributable to energy and radioactive waste transportation (0.13),

C = percent or portion (also referred to as coefficient) of the [1986 $ Cost] attributable to radioactive waste burial/disposition (0.22),

L_x = labor, materials, and services cost escalation, January of 1986 to latest month of Year X for which PPI data are available,

E_x = energy (electricity and fuel oil) and waste transportation cost escalation, January of 1986 to latest month of Year X for which CPI data are available,

B_x = Low-level waste (LLW) burial/disposition cost escalation, January of 1986 to the latest month of Year X for which data are available,

= $(R_x + \Sigma S_x) / (R1986 + \Sigma S1986)$, where:

R_x = radioactive waste burial/disposition costs (excluding surcharges) in Year X dollars,

ΣS_x = summation of surcharges in Year X dollars,

R1986 = radioactive waste burial costs (excluding surcharges) in 1986 dollars, and

$\Sigma S1986$ = summation of surcharges in 1986 dollars.

3.2 Labor Cost Escalation Factors

In addition to costs categorized as labor, certain materials and services are also assumed to escalate at the same rate as labor and therefore included in coefficient A. Examples of these costs include container costs, certain equipment costs, insurance costs, and costs of supplies and materials. Table 3-1 provides additional examples.

Current employment cost indexes for labor (column 3,Table 3-2, below) can be obtained from the "Employment Cost Indexes," published by the BLS (Reference 4). Specifically, the appropriate regional data from Table 6 of Reference 4 entitled "Employment Cost Index for total compensation, for private industry workers, by bargaining status, census region and division, and metropolitan area status" should be used. These indexes may also be obtained from BLS databases available on the Internet (see Appendix C for instructions).

In order to calculate the current labor cost escalation factor (L_x) for a particular region, it must be recognized that the BLS "re-indexed" the Employment Cost Index (ECI) in 2005, to 100. Accordingly, two (2) BLS cost index numbers are required to calculate the current L_x value: 1) the base labor cost escalation factor in 2005 (provided below in Table 3-2), and 2) the current Employment Cost Index (ECI) from the BLS. The December 2005 base labor cost escalation factors, by region, are presented in column 2 of Table 3-2, and current ECIs, for the sake of example, are presented in column 3. The base labor cost escalation factor is the value of L_x at the time the BLS most recently re-indexed the ECI (December 2005). As such, current values of L_x (column 4) are obtained from the simple proportion:

$$L_{x(current)}/ECI_{(current)} = \text{Base } L_{x(2005)}/100$$

For example, to calculate L_x with a 2005 base value for the Northeast region in first quarter 2024, the below formula can be used:

$$L_x/165.0 = 2.16/100$$

or

$$L_x = 2.16*165.0/100 = 3.56$$

Table 3-2 Regional Factors for Labor Cost Adjustment

Region	Base L_x (Dec 2005)	Qtr 1 2024 ECI (Dec 2005 = 100)	L_x (Qtr 1 2024)
Northeast	2.16	165.0	3.56
South	1.98	161.8	3.20
Midwest	2.08	160.7	3.34
West	2.06	168.7	3.48

3.3 Energy Cost Escalation Factors

The cost escalation factor for energy, E_x, is a weighted average of the following components: industrial electric power for onsite decommissioning, P_x, and diesel or other fuels for transportation and heavy equipment operation, F_x. For the reference PWR, E_x is given by:

$$E_x \text{ (PWR)} = 0.58P_x + 0.42F_x$$

and for the reference BWR E_x is given by:

$$E_x \text{ (BWR)} = 0.54P_x + 0.46F_x$$

These equations are derived from Table 6-3 of Reference 1 and Table 5-3 of Reference 2. The 0.58 and 0.54 coefficients for P_x are calculated as the ratio of energy cost to the total energy and fuel for transportation cost for the reference PWR and BWR, respectively. The 0.42 and 0.46 coefficients for F_x are calculated as the ratio of fuel for transportation cost to the total energy and fuel for transportation cost for the reference PWR and BWR, respectively.

The current values of P_x and F_x are calculated from the Producer Price Indexes (PPI), available in the “PPI Detailed Report,” published by the U.S. Department of Labor, BLS (Reference 5). These indexes also can be obtained from BLS databases available on the Internet (see Appendix C for instructions). Because the energy cost category is the cost of the electricity and fuel needed to provide essential systems and services to the plant during decommissioning, the indexes used to calculate P_x should be taken from data for industrial electric power (PPI Commodity Code 0543). The transportation cost category is assumed to escalate with the cost of diesel fuel or light fuel oils. The indexes used to calculate F_x should therefore be taken from data for light fuel oils (PPI Commodity Code 0573). The BLS data available for these PPI commodity codes are currently available by region.

P_x and F_x are the values of current producer price indexes (PPI Codes 0543 and 0573, respectively) divided by the corresponding indexes for January 1986. All PPI values are based on a value of 100 for the year 1982 (base 1982 = 100). Thus, the values of P_x and F_x for March 2024 (latest data available) are[2]:

P_x = 300.3 (March 2024 value of code 0543) ÷
114.2 (January 1986 value of code 0543) = 2.629

F_x = 360.8 (March 2024 value of code 0573) ÷
82.0 (January 1986 value of code 0573) = 4.400

The value of E_x for the reference PWR is therefore:

E_x (PWR) = [(0.58 × 2.629) + (0.42 × 4.400)] = 3.373.

This value of E_x = 3.373 should then be used in the equation to adjust the energy cost (to March 2024 dollars) for decommissioning a PWR.

The value for the reference BWR is:

E_x (BWR) = [(0.54 × 2.629) + (0.46 × 4.400)] = 3.444.

3.4 Waste Burial Cost Escalation Factors

The waste burial cost escalation factors, B_x, for the year 2024 are provided in Table 2-1 for each of the LLW disposal sites.

To calculate the B_x for a particular LLW burial site, the cost of disposal of each of the radioactive materials identified in Tables 3-3 and 3-4 for the reference PWR and BWR, respectively, was first estimated using the year 2024 price schedules provided in Appendix A of this report for each of the LLW disposal facilities. The cost of disposal for each of the radioactive materials or components was calculated based on numerous factors, including its LLW classification (e.g., Class A, B, and C), its weight and volume, the number of packages, the number of shipments, its activity, and its surface dose rate. The values assumed for these factors are reported in NUREG/CR-0130 and NUREG/CR-0672 (References 6 and 7), and associated Addendums 3 and 2 (References 8 and 9), respectively, and are summarized in Tables 3-3 and 3-4 for the reference PWR and BWR, respectively. For each compact-affiliated burial site and for each of the radioactive materials, the unit cost factors provided in Appendix A are multiplied by the applicable factors provided in Tables 3-3 and 3-4 to obtain estimates for each of the following cost categories as applicable: volume or base disposal charge, irradiated hardware handling charge, cask handling charge, curie charge, shipment charge, container charge, and dose rate charge. The result for each cost category for each radioactive material was summed to obtain the total estimated disposal cost for each radioactive material for each LLW burial facility. The total estimated disposal cost for each compact-affiliated LLW burial site was determined by summing the disposal costs for all radioactive materials and then multiplying this result by

[2] The PPI values for industrial electric power increased by 13.3 percent and for light fuel oils decreased by 23.7 percent from NUREG-1307, Revision 19.

applicable factors for taxes, fees, and permits. The results were then divided by the 1986 disposal cost estimate identified in Table 3-1 to develop the year 2024 B_x factors reported in Table 2-1.

Table 3-3 PWR Radioactive Materials and Assumptions Included in the Estimate of LLW Burial Cost

Radioactive Materials	LLW Classification	Weight (MT)	Volume (m^3)	Number Packages	Number Shipments	Activity (Ci)	Surface Dose (R/hr)
Vessel Wall	A	270	108	38	38	19,170	80
Vessel Head & Bottom	A	127	113	40	40	40	0
Upper Core Support Assembly	A	12	11	4	4	10	10
Upper Support Column	A	11	11	4	4	100	10
Upper Core Barrel	B	3	6	2	2	1,000	100
Upper Core Grid Plate	C	5	14	5	5	24,310	100
Guide Tubes	A	15	17	6	6	100	5
Lower Core Barrel	GTCC	43	91	32	32	651,000	100
Thermal Shields	GTCC	10	17	6	6	146,000	100
Core Shroud	GTCC	12	11	4	4	3,431,000	100
Lower Grid Plate	GTCC	4	14	5	5	553,400	100
Lower Support Column	C	3	3	1	1	10,000	100
Lower Core Forging	B	36	31	11	11	2,500	100
Miscellaneous Internals	B	36	23	8	8	2,000	100
Biological Shield Concrete	A	885	707	195	49	2,000	0
Reactor Cavity Liner	A	15	14	4	1	10	0
Reactor Coolant Pumps	A	341	119	8	12	78	0
Pressurizer	A	88	102	8	8	5	0
Heat Exchangers, Sump Pump, Cavity Pump	A	5	11	3	1	12	0
Pressurizer Relief Tank	A	12	34	2	2	4	0
Safety Injection Accumulator Tanks	A	139	113	8	8	81	0
Steam Generators	A	1,248	605	32	32	4,400	0
Reactor Coolant Piping	A	101	93	7	7	298	0
Other Containment Building	A	1,780	1,490	411	101	224	0
Other Buildings	A	13,695	13,510	3,709	796	184	0
Filter Cartridges	B	24	9	42	6	5,000	2
Spent Resins	B	82	57	20	20	42,000	60
Combustible Wastes	A	122	198	930	30	233	0.2
Combustible Wastes	B	122	89	420	30	525	1
Evaporator Bottoms	A	384	266	94	94	13,805	50
Post-TMI-2 Additions	A	190	440	121	10	<<1	0

Acronyms: GTCC – greater than Class C, MT – metric tons, Ci – curies, R/hr – rem/hour

Table 3-4 BWR Radioactive Materials and Assumptions Included in the Estimate of LLW Burial Cost

Radioactive Materials	LLW Classification	Weight (MT)	Volume (m^3)	Number Packages	Number Shipments	Activity (Ci)	Surface Dose (R/hr)
Steam Separator	B	10	10	28	14	9,600	460
Fuel Support Pieces	B	5	5	14	7	700	80
Control Rods & In-core Instruments	C	20	15	8	8	189,000	5000
Control Rod Guide Tubes	A	4	4	12	6	100	20
Jet Pump Assemblies	C	6	14	40	20	20,000	840
Top Fuel Guide	C	2	24	72	72	30,100	840
Core Support Plate	A	19	11	31	16	650	20
Core Shroud	GTCC	32	47	140	140	6,300,000	610
Reactor Vessel Wall	A	158	8	22	20	2,160	20
Sacrificial Shield (neutron-activated)	A	272	90	14	14	170	0
Reactor Water Recirculation	A	87	88	6	7	44	0
Sacrificial Shield (contaminated)	A	704	310	38	38	155	0
Other Primary Containment	A	2,823	3,536	970	170	1,766	0
Containment Atmosphere Control	A	11	48	2	1	24	0
High Pressure Core Spray	A	28	17	2	2	8	0
Low Pressure Core Spray	A	10	10	1	1	5	0
Reactor Building Closed Cooling	A	27	32	6	2	16	0
Reactor Core Isolation Cooling	A	82	13	3	1	6	0
Residual Heat Removal	A	9	62	7	5	31	0
Pool Liner & Racks	A	347	381	37	18	190	0
Reactor Building Contaminated Concrete	A	496	434	108	28	217	0
Other Reactor Building	A	619	1,419	390	46	709	0
Turbine	A	1,663	1,406	278	82	702	0
Nuclear Steam Condensate	A	220	363	44	13	181	0
Low Pressure Feedwater Heaters	A	738	737	44	42	368	0
Main Steam	A	32	71	3	2	35	0
Moisture Separator Reheaters	A	417	715	26	26	357	0
Reactor Feedwater Pumps	A	110	194	20	6	97	0
High Pressure Feedwater Heaters	A	147	121	8	8	60	0
Other Turbine-Generator Building	A	3,190	4,857	1,284	238	2,426	0
Radwaste and Control Building	A	1,090	2,405	642	72	1,201	0
Reactor Building Combustible Wastes	A	122	207	985	6	246	0.2
Reactor Building Combustible Wastes	B	653	93	443	32	554	1
Turbine-Generator Building Combustible Wastes	A	82	140	665	41	166	0.2
Turbine-Generator Building Combustible Wastes	B	429	63	299	21	374	1
Radwaste and Control Building Combustible Wastes	A	82	121	574	4	144	0.2
Radwaste and Control Building Combustible Wastes	B	388	54	258	19	323	1
Concentrator Bottoms	A	1,334	492	173	173	1,452	1
Concentrator Bottoms	B	401	148	52	52	31,200	50
Filter Sludges & Spent Resins	A	470	174	61	61	329	0.2
Post-TMI-2 Additions	A	11	36	0	1	<<1	0

Acronyms: GTCC – greater than Class C, MT – metric tons, Ci – curies, R/hr – rem/hour

A similar process was followed to develop the B_x factors for the cases where a combination of compact-affiliated and non-compact disposal facilities were used. The exception is that in these cases the Class A LLW was assumed to be disposed of at the Clive, Utah disposal facility, which only has unit cost factors based on volume. The unit cost factors were applied to the Class A LLW volumes in Tables 3-3 and 3-4 based on the LLW category assumptions provided in Table 3-5 to develop the disposal estimates for each radioactive material or component.

Appendix B provides the detailed disposal cost results for each LLW burial site and compact-affiliated/non-compact-affiliated combination by radioactive material for the current NUREG-1307 revision and Revision 19.

A comparison of the year 2024 B_x factors in Table 2-1 to the corresponding year 2022 B_x factors reported in Revision 19 of NUREG-1307, shows that 1) for the compact-affiliated disposal facility cases, the values increased for the South Carolina site and Washington site and were essentially unchanged for the Texas disposal facility and 2) for the cases with a combination of compact-affiliated and non-compact disposal facilities, the values generally decreased due to decreases in disposal fees for the non-compact disposal facility. These changes are described in Appendix A.

Table 3-5 Clive, Utah Disposal Facility LLW Class A Categories

PWR		BWR	
Radioactive Materials	**LLW Category**	**Radioactive Materials**	**LLW Category**
Vessel Wall	Oversize Debris	Control Rod Guide Tubes	Oversize Debris
Vessel Head & Bottom	Large Components	Core Support Plate	Oversize Debris
Upper Core Support Assembly	Oversize Debris	Reactor Vessel Wall	Oversize Debris
Upper Support Column	Oversize Debris	Sacrificial Shield (neutron-activated)	Oversize Debris
Guide Tubes	Oversize Debris	Reactor Water Recirculation	Oversize Debris
Biological Shield Concrete	Oversize Debris	Sacrificial Shield (contaminated)	Oversize Debris
Reactor Cavity Liner	Oversize Debris	Other Primary Containment	Oversize Debris
Reactor Coolant Pumps	Large Components	Containment Atmosphere Control	Oversize Debris
Pressurizer	Large Components	High Pressure Core Spray	Oversize Debris
Heat Exchangers, Sump Pump, Cavity Pump	Oversize Debris	Low Pressure Core Spray	Oversize Debris
Pressurizer Relief Tank	Oversize Debris	Reactor Building Closed Cooling	Oversize Debris
Safety Injection Accumulator Tanks	Oversize Debris	Reactor Core Isolation Cooling	Oversize Debris
Steam Generators	Large Components	Residual Heat Removal	Oversize Debris
Reactor Coolant Piping	Oversize Debris	Pool Liner & Racks	Oversize Debris
Other Containment Building	Oversize Debris	Reactor Building Contaminated Concrete	Oversize Debris
Other Buildings	Oversize Debris	Other Reactor Building	Oversize Debris
Combustible Wastes – Class A	Combustibles	Turbine	Large Components
Evaporator Bottoms	Evaporator Bottoms	Nuclear Steam Condensate	Oversize Debris
Post-TMI-2 Additions	Oversize Debris	Low Pressure Feedwater Heaters	Oversize Debris
		Main Steam	Oversize Debris
		Moisture Separator Reheaters	Oversize Debris
		Reactor Feedwater Pumps	Large Components
		High Pressure Feedwater Heaters	Oversize Debris
		Other Turbine-Generator Building	Oversize Debris
		Radwaste and Control Building	Oversize Debris
		Combustible Wastes – Class A	Combustibles
		Concentrator Bottoms – Class A	Evaporator Bottoms
		Filter Sludges & Spent Resins	Oversize Debris
		Post-TMI-2 Additions	Oversize Debris

Regarding changes to the disposal price schedules, the following summarizes the changes:

- For the Washington disposal facility, volume, shipment disposal rates, the charges per container, dose rate charges per container, and the annual site charges increased. The fees for environmental site surveillance did not change from year 2022.

- For the South Carolina disposal facility, all of the charges and surcharges increased except for the Atlantic Compact Commission administrative surcharge, which remained unchanged.

- For the Utah disposal facility, the disposal rates for both solid and liquid LLW decreased from year 2022.

- For the Texas disposal facility, the waste volume charge category, the maximum curie charge, the curie inventory charge, the weight surcharge category, the dose rate surcharge category, and the irradiated hardware surcharge category did not change from year 2022.

3.5 Sample Calculations of Estimated Reactor Decommissioning Costs

Four sample calculations are provided in this section to demonstrate the use of the decommissioning cost equation developed above using the appropriate cost escalation factors of L_x for labor, material, and services; E_x for energy and fuel for waste transportation; and B_x for radioactive waste burial/disposition. The coefficients A, B, and C (0.65 coefficient for labor, 0.13 coefficient for energy, and 0.22 coefficient for LLW burial) used in the examples are developed in Table 3-1. Waste generators with no LLW compact disposal site availability should use the B_x values for the generic LLW disposal site scenario (i.e., the column in Table 2-1 titled "B_x Values for Generators Located in the Unaffiliated States and those Located in Compact-Affiliated States having no Disposal Facility"). Sample decommissioning costs for other years are provided in Appendix D.

Example 1 (No Compact-Affiliated Disposal Facilities)

Scenario Description
Reactor Type: BWR
Thermal Power Rating: 3,400 MWt
Location of Plant: Midwest Compact
LLW Disposition Preference: Non-Compact Disposal Facilities
LLW Burial Location: Non-Compact Disposal Sites (Texas and Utah)

Base Cost (1986 Dollars) = $135 million [from 10 CFR 50.75(c)(1)]

L_x = 3.34 [from Table 3-2]

E_x = 3.444 [from Section 3.3]

B_x = 11.658 [from Table 2-1]

Decommissioning Cost (2024 dollars)
= ($135 million)×[(0.65)×(3.34)+(0.13)×(3.444)+(0.22)×(11.297)] = $700 million

Example 2 (Compact-Affiliated Disposal Facility Only)

Scenario Description
Reactor Type: PWR
Thermal Power Rating: 3,400 MWt
Location of Plant: Texas Compact
LLW Disposition Preference: Compact-Affiliated Disposal Facility Only
LLW Burial Location: Texas

Base Cost (1986 Dollars) = $105 million [from 10 CFR 50.75(c)(1)]

L_x = 3.20 [from Table 3-2]

E_x = 3.373 [from Section 3.3]

B_x = 6.650 [from Table 2-1]

Decommissioning Cost (2024 dollars)
= ($105 million)×[(0.65)×(3.20)+(0.13)×(3.373)+(0.22)×(6.650)] = $418 million

Example 3 (Combination of Compact-Affiliated and Non-Compact Disposal Facilities)

Scenario Description
Reactor Type: PWR
Thermal Power Rating: 3,400 MWt
Location of Plant: Atlantic Compact
LLW Disposition Preference: Combination of Compact-Affiliated and Non-Compact Disposal Facilities
LLW Burial Location: South Carolina and Utah

Base Cost (1986 Dollars) = $105 million [from 10 CFR 50.75(c)(1)]

L_x = 3.56 [from Table 3-2]

E_x = 3.373 [from Section 3.3]

B_x = 12.813 [from Table 2-1]

Decommissioning Cost (2024 dollars)
= ($105 million)×[(0.65)×(3.56)+(0.13)×(3.373)+(0.22)×(12.813)] = $585 million

Example 4 (Compact-Affiliated Disposal Facility Only)

Scenario Description
Reactor Type: BWR
Thermal Power Rating: 3,400 MWt
Location of Plant: Northwest Compact
LLW Disposition Preference: Compact-Affiliated Disposal Facility Only
LLW Burial Location: Washington

Base Cost (1986 Dollars) = $135 million [from 10 CFR 50.75(c)(1)]

L_x = 3.48 [from Table 3-2]

E_x = 3.444 [from Section 3.3]

B_x = 11.274 [from Table 2-1]

Decommissioning Cost (2024 dollars)
= ($135 million)×[(0.65)×(3.48)+(0.13)×(3.444)+(0.22)×(11.274)] = $701 million

3.6 Low Activity Waste

Some wastes generated during decommissioning have very low levels of radioactivity that pose minimal risk to people or the environment. The volumes of these wastes may be significant (e.g., hundreds of thousands of cubic feet). The radioactivity level of this waste may be so low that it may be safely disposed of in hazardous or municipal solid waste landfills. These wastes, generally referred to as low activity or very low activity waste (there is no NRC regulatory definition for this waste category), do not necessarily require the controls specified in 10 CFR Part 61. Regulations in 10 CFR Part 20 provide an approach for the NRC to approve alternative disposal methods for these wastes.

Since 2000, the NRC has approved several 10 CFR 20.2002 requests allowing for the disposal of low or very low activity waste, including hundreds of thousands of cubic feet of concrete and other demolition debris from NPPs being decommissioned (see Reference 10 for a review of several decommissioning projects that have applied the alternative disposal methods process). NRC approved alternative methods of disposal have typically been for disposal of very low activity waste at Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste disposal sites and, in a few cases, at RCRA Subtitle D municipal landfill disposal facilities where long-term controls are not in place. Although these materials could be disposed in a LLW disposal facility licensed under 10 CFR Part 61, use of alternative disposal procedures under 10 CFR 20.2002 may reduce overall risk (e.g., risk associated with increased transportation distances and associated radiological and non-radiological impacts) and may preserve disposal capacity at LLW disposal facilities for higher risk waste streams, while also providing reasonable assurance of adequate protection of public health and safety and protection of the environment.

As cited in the foreword to this document, the NRC plans to further evaluate this disposal alternative in preparation for the next revision (Revision 21) of NUREG-1307. As part of its evaluation, NRC will engage the public and industry, as well as Tribal, Federal, and local governments, to better understand the availability of and anticipated reliance by power reactor licensees on this alternative disposal method. Based on the outcome of its engagements and research, NRC envisions the next revision of this document to incorporate LLW burial cost

escalation factor and other cost-related information associated with low activity waste disposal at other-than-traditional LLW sites.

3.7 Small Modular Reactors and Advanced Reactors

As discussed in Section 3.1, the minimum decommissioning fund requirement, or minimum formula amount, defined in 10 CFR 50.75(c) for radiological decommissioning of a NPP, was based on large (greater than 1200 MWt) PWR and BWR reactor units. Small modular reactors (SMRs) and advanced reactors are of designs that differ significantly from large PWR and BWR reactor units. Accordingly, the decommissioning fund formula in 10 CFR 50.75(c) is not anticipated to be directly applicable to SMRs and advanced reactors. The NRC is currently evaluating its approach for assessing decommissioning costs for purposes of providing decommissioning funding assurance for these types of reactors.

4 REFERENCES

1. Konzek G.J. and R.I. Smith, “Technology, Safety, and Costs of Decommissioning a Reference Pressurized-Water Reactor Power Station–Technical Support for Decommissioning Matters Related to Preparation of the Final Decommissioning Rule,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0130, Addendum 4, U.S. Nuclear Regulatory Commission, July 1988.

2. Konzek G.J. and R.I. Smith, “Technology, Safety and Costs of Decommissioning a Reference Boiling-Water Reactor Power Station–Technical Support for Decommissioning Matters Related to Preparation of the Final Decommissioning Rule,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0672, Addendum 3, U.S. Nuclear Regulatory Commission, July 1988.

3. U.S. Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, “Report on Waste Burial Charges–Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities,” NUREG-1307, Revision 8, December 1998.

4. U.S. Department of Labor, Bureau of Labor Statistics, *Employment Cost Index*, data for Series IDs CIU2010000000210I, CIU2010000000220I, CIU2010000000230I, and CIU2010000000240I obtained from http://www.bls.gov/data, data retrieved on August 8, 2024.

5. U.S. Department of Labor, Bureau of Labor Statistics, *Producer Price Index - Commodities*, data for Series IDs WPU0543 and WPU0573 obtained from http://www.bls.gov/data, data retrieved on August 8, 2024.

6. Smith, R.I., G.J. Konzek, and W.E. Kennedy, Jr., “Technology, Safety, and Costs of Decommissioning a Reference Pressurized-Water Reactor Power Station,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0130, Vol. 1 and 2, U.S. Nuclear Regulatory Commission, June 1978.

7. Oak, H.D., G.M. Holter, W.E. Kennedy, and G.J. Konzek, “Technology, Safety and Costs of Decommissioning a Reference Boiling-Water Reactor Power Station,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0672, Vol. 1 and 2, U.S. Nuclear Regulatory Commission, June 1980.

8. Murphy, E.S., “Technology, Safety, and Costs of Decommissioning a Reference Pressurized-Water Reactor Power Station– Classification of Decommissioning Wastes,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0130, Addendum 3, U.S. Nuclear Regulatory Commission, September 1984.

9. Murphy, E.S., “Technology, Safety and Costs of Decommissioning a Reference Boiling-Water Reactor Power Station–Classification of Decommissioning Wastes,” (Report prepared by Pacific Northwest Laboratory, Richland, Washington), NUREG/CR-0672, Addendum 2, U.S. Nuclear Regulatory Commission, September 1984.

10. Electric Power Research Institute (EPRI), “Basis for National and International Low Activity and Very Low Level Waste Disposal Classifications,” Technical Report Number 1024844, March 2012. See https://www.epri.com/research/products/1024844

APPENDIX A
LOW-LEVEL WASTE BURIAL/DISPOSITION PRICES FOR THE CURRENT YEAR

This appendix contains the price schedules for burial/disposition of LLW at the compact-affiliated LLW disposal facilities located in Texas, Washington, and South Carolina for the year 2024. Also provided is a price quote for the non-compact disposal facility located in Utah. These schedules are used to calculate the burial/disposition costs discussed in Appendix B.

A.1 Texas LLW Disposal Site

Beginning in the Spring of 2012, a new facility located in Andrews County, Texas (which is owned by the State of Texas and operated by Waste Control Specialists [WCS]) became available for disposal of LLW from states within the Texas Compact (comprised of Texas and Vermont). The Texas facility, or Texas Compact Waste Facility (CWF), also accepts LLW from out-of-compact generators. The fees for LLW disposal are determined by the Texas Commission on Environmental Quality. Out-of-compact generators, however, must submit an import petition to the Texas Compact Commission for approval prior to shipping. The state of Texas also limits total non-compact waste disposed at the CWF to 30-percent of licensed capacity and charges additional fees for out-of-compact LLW.

The current approved rate schedule for disposal of LLW at the CWF is provided in Section 336.1310 (Subchapter N) of Title 30 of the Texas Administrative Code (TAC). This rate schedule is provided in Exhibit A-1. Effective November 8, 2018, the schedule no longer includes a separate waste volume charge for shielded Class A LLW, a Carbon-14 inventory charge, surcharges for weights less than or equal to 50,000 pounds, surcharges for dose rates less than or equal to 500 R/hour, or surcharges for shielded waste cask handling. All of the charges remained unchanged from 2022. The fees in this Exhibit A-1 are the maximum disposal rates that can be charged to in-compact generators. Fees charged to out-of-compact generators must be greater than these rates. Various established Texas fees charged to out-of-compact LLW currently amounts to an additional 31.25-percent on top of the rates shown in Exhibit A-1. In addition, it is assumed that an additional 20-percent in fees/taxes is charged for out-of-compact LLW. As a result of the disposal fees being unchanged from Revision 19, the cost to disposition the LLW from a PWR and a BWR are generally unchanged.

A.2 South Carolina LLW Disposal Site

Access to the South Carolina site by waste generators outside the Southeast Compact ended June 30, 1994, with site closure scheduled for December 31, 1995. However, effective July 1, 1995, the scheduled closure was canceled and access to the South Carolina facility was extended to all states except North Carolina. In June 2000, prohibition on waste from North Carolina was lifted.

Effective November 1, 1996, the operator of the South Carolina disposal site implemented a restructured waste disposal rate schedule. The restructured pricing is based on weight, dose rate, and curies with a cost incentive toward higher density packaging. All business after November 1, 1996, is through customer-specific contracts.

Effective July 1, 2008, out-of-compact waste was prohibited from disposal at the South Carolina disposal site.

Weight charges, curie surcharges, and irradiated hardware charges increased approximately 1.2 percent from the 2022 Atlantic Compact rates. The dose rate surcharges and Atlantic Compact Commission administrative surcharge remained constant. As a result, the cost to disposition the LLW from a PWR and a BWR increased approximately 1.2 percent and 1.7 percent, respectively, compared to 2022. The rate schedule for the South Carolina LLW disposal site, effective July 1, 2024, is presented in Exhibit A-2.

A.3 Washington LLW Disposal Site

Beginning in 1993, the Northwest Compact imposed an annual permit fee on eligible (Northwest or Rocky Mountain Compact) waste generators based on the volume of waste to be shipped to the Washington site for disposal. For 2024, the permit fees range from $424 to $42,400. Hospitals, universities, research centers, and industries pay the lower fees; NPPs pay the highest fee of $42,400. Permit fees for NPPs are included in this analysis for the years 1993 and later.

Beginning in 1994, the rate schedule for handling and disposing of heavy objects (greater than 5,000 pounds) at the Washington site was revised to recover additional crane rental costs from the waste generator. In 1996, the heavy object limit was raised to 17,500 pounds. A series of shipments of heavy objects for disposal was assumed that would minimize the crane surcharge and result in a one-time only heavy object charge.

Effective January 1, 1996, the operator of the Washington site implemented a restructured rate schedule based on waste volume, number of shipments, number of containers, and dose rate at the container surface. Each waste generator also is assessed an annual site availability charge based on cumulative volume and dose rate at the surface of all containers disposed. This restructured rate schedule was established in a settlement agreement between U.S. Ecology Washington, Inc., (the operator of the Washington disposal facility) and several large waste generators and was accepted by the Washington Utilities and Transportation Commission. The rate design for the restructured rate schedule was for an original period of six years, and has been renewed on this schedule since 1996. The rates are updated annually to adjust for inflation and other factors. A significant element of the rate design is the imposition of a revenue requirement that limits the profit that U.S. Ecology can earn each year. Any revenue earned in excess of this requirement must be returned to the waste generators who used the disposal facility during the year. Hence, disposal rates can vary significantly from year to year depending on the projected LLW volume and its characteristics that are received at the facility each year.

Compared with the 2022 rate schedule used in Revision 19 of NUREG-1307, the 2024 schedule reflects increases in volume rate (53.2 percent), shipment rates (35.6 percent), container rates (30.1 percent), and dose rates (about 19 percent). As a result of these rate increases, subject to the limitations described in the previous paragraph, the cost to disposition the LLW from a PWR and a BWR increased by 32.4 percent and 31.5 percent, respectively. The rate schedule for the Washington LLW disposal site, effective May 1, 2024, is presented in Exhibit A-3.

A.4 Non-compact Disposal Facilities

Beginning in 2010, with Revision 14 of NUREG-1307, the EnergySolutions Clive, Utah disposal facility was explicitly included as an available, optional disposal facility for Class A LLW. This disposal facility is not associated with any of the LLW compacts and is licensed to receive Class A LLW generated from any facility in the United States. The fees for LLW disposal are

established by EnergySolutions and are not subject to review and approval by the Utah Department of Environmental Quality, which is the state of Utah regulator for the Clive disposal facility.

Disposal rates for the Clive disposal facility are obtained directly from EnergySolutions via a survey. In support of Revision 20 of NUREG-1307, a similar survey was conducted. In response to this survey, a price quote to disposition the components of the reference PWR and BWR at the Utah disposal facility was obtained. Unit costs, exclusive of taxes, were provided for several different categories of components, which are provided in Table A-1. The updated rates decreased by approximately 13.5 percent for all categories, with the exception of Evaporator Bottoms, which decreased by approximately 12 percent, from the 2024 rates. These rates assume no volume discounts, which can be substantial. The development of the B_x factor for the "Combination of Compact-Affiliated and Non-Compact Disposal Facilities" scenario and the "Non-Compact Disposal Facilities" scenario was based on these rates and assumed a 10 percent tax.

Table A-1 Price Quotes for Disposition of Class A LLW at the Non-Compact Disposal Facility Located in Clive, Utah

Component Class	Cost	Per Unit
Large Components	$418	ft^3
Debris	$174	ft^3
Oversize Debris	$198	ft^3
Resins/Filters	$550	ft^3
Combustibles	$686	ft^3
Evaporator Bottoms	$29	Gallon

Exhibit A-1

Texas Commission on Environmental Quality
Chapter 336 – Radioactive Substance Rules

SUBCHAPTER N: FEES FOR LOW-LEVEL RADIOACTIVE WASTE DISPOSAL

EFFECTIVE August 6, 2020

§336.1310. Rate Schedule.

Fees charged for disposal of party-state compact waste must be equal to or less than the compact waste disposal fees under this section. Additionally, fees charged for disposal of nonparty compact waste must be greater than the compact waste disposal fees under this section.

Figure: 30 TAC §336.1310[1]

Disposal Rate for the Compact Waste Disposal Facility

1. Base Disposal Charge:

1A. Waste Volume Charge	Charge per cubic foot ($/ft3)
Class A LLW	$100
Class B and C LLW	$1,000
Sources – Class A	$500

1B. Radioactivity Charge	
Curie Inventory Charge ($/mCi)	$0.05
Maximum Curie Charge (per shipment) (excluding C-14)	$220,000/shipment

[1] The Texas Administrative Code (TAC) Title 30, Part 1, Chapter 336, Subchapter N, Rule §336.1310 is available at: https://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=336&rl=1310

2. Surcharges to the Base Disposal Charge:

2A. Weight Surcharge - Weight (lbs.) of Container	Surcharge ($/container)
Greater than 50,000 lbs	$20,000

2B. Dose Rate Surcharge - Surface Dose Rate (R/hour) of Container	Surcharge per cubic foot ($/ft3)
Greater than 500 R/hour	$400

2C. Irradiated Hardware Surcharge	
Surcharge for special handling per shipment	$75,000/shipment

Amended to be Effective August 6, 2020

Exhibit A-2

Pursuant to 48-46-40(A)(2), S.C.C.

Uniform Schedule of Maximum Disposal Rates
for Atlantic Compact Regional Waste

EFFECTIVE JULY 1, 2024

The Uniform Schedule of Maximum Disposal Rates for Atlantic Compact Regional Waste is a permanent ceiling on disposal rates applicable to Atlantic Compact waste that is adjusted each year in accordance with the Producer Price Index. South Carolina may charge Atlantic Compact generators less than the Uniform Maximum Schedule, but cannot charge regional generators more than this rate.

THE MINIMUM CHARGE PER SHIPMENT, EXCLUDING SURCHARGES AND SPECIFIC OTHER CHARGES, IS $1,000.00

1. WEIGHT CHARGES (not including surcharges)

A. Base weight charge

Density Range	**Weight Rate**
i) Equal to or greater than 120 lbs./ft^3	$9.917 per pound
ii) Equal to or greater than 75 lbs./ft^3 and less than 120 lbs./ft^3	$10.910 per pound
iii) Equal to or greater than 60 lbs./ft^3 and less than 75 lbs./ft^3	$13.387 per pound
iv) Equal to or greater than 45 lbs./ft^3 and less than 60 lbs./ft^3	$17.356 per pound
v) Less than 45 lbs./ft^3	$17.356 per pound multiplied by: (45 ÷ pounds per cubic foot of the package)

B. Dose multiplier on base weight charge

Container Dose Level	**Multiplier on Weight Rate, above**
0 mR/hr - 200 mR/hr	1.00
>200 mR/hr - 1 R/hr	1.08
>1R/hr - 2R/hr	1.12
>2R/hr - 3R/hr	1.17
>3R/hr - 4R/hr	1.22
>4R/hr - 5R/hr	1.27
>5R/hr - 10R/hr	1.32
>10R/hr - 25R/hr	1.37
>25R/hr - 50R/hr	1.42
>50R/hr	1.48

C. Biological Waste: Add $2.155 per pound to rate calculated above

2. SURCHARGES

A.	Millicurie surcharge	$0.743 per millicurie*

*In lieu of above, generator may opt for an alternative millicurie charge of $1.484 per millicurie applicable only to millicuries with greater than 5-year half-life. Such election must be provided in writing to the disposal site operator prior to July 1, 2023.

MAXIMUM MILLICURIE CHARGE IS $297,000 PER SHIPMENT (400,000 MCI).

B.	Irradiated hardware charges (See Note B under Miscellaneous)	$112,714 per shipment
C.	Special nuclear material surcharge	$22.537 per gram
D.	Atlantic Compact Commission administrative surcharge	$6.00 per cubic foot (*Subject to change during year)*

Exhibit A-2

NOTES

A. Surcharges for the Barnwell Extended Care Fund and the Decommissioning Trust Fund are included in the rates.

B. Irradiated hardware: As a general rule, billing as irradiated hardware pertains to shipments of exceptionally high activity that require clearing of the site and special off-loading into a slit trench. These generally include TN-RAM[2] and other horizontally offloaded cask shipments. In addition to items of irradiated hardware, shipments considered irradiated hardware, for purposes of disposal, have included certain sealed sources and materials with exceptionally high levels of radioactivity.

C. Large components (e.g., steam generators, reactor pressure vessels, coolant pumps).

Disposal fees for large components (e.g., steam generators, reactor pressure vessels, reactor coolant pumps, or items that will not fit into standard sized disposal vaults) are based on the generally applicable rates, in their entirety, except that the weight and volume used to determine density and weight related charges is calculated as follows:

1. For packages where the large component shell qualifies as the disposal vault per Department of Health and Environmental Control (DHEC) regulations, weight and volume calculations are based on all sub-components and material contained within the inside surface of the large component shell, including all internals and any stabilization media injected by the shipper, but excluding the shell itself and all incidental external attachments required for shipping and handling; and

2. For packages with a separate shipping container that qualifies as the disposal vault per DHEC regulations, weight and volume calculations are based on the large component, all sub-components, and material contained within the inside surface of the shipping container, including any stabilization media injected by the shipper (including that between the large component and the shipping container), but excluding the shipping container itself and all incidental external attachments required for shipping and handling.

D. Co-mingled shipments from brokers and processors: For containers that include waste from different generators (DHEC permittees), the weight and density of the waste from each generator will be assessed separately for purposes of the weight charge in I.A. The dose of the container as a whole will be used to assess the dose multiplier in I.B. The millicurie charge 2.A. above, applies individually to each portion of waste in the shipment from each generator. The disposal site operator will provide guidelines for application of this method.

E. Transport vehicles with additional shielding features may be subject to an additional handling fee, which will be provided upon request.

F. In certain circumstances, the disposal site operator may assess additional charges for necessary services that are not part of and are additional to disposal rates established by the State of South

[2] TN-RAM is a radioactive material cask used to transport irradiated non-fuel bearing solid materials.

Carolina. These include decontamination services and special services as described in the Barnwell Site Disposal Criteria.

G. The disposal site operator has established the following policies and procedures, which are provided herein for informational purposes:

i. Terms of payment are net 30 days upon presentation of invoices. A per-month service charge of one and one-half percent (1½ percent) shall be levied on accounts not paid within thirty (30) days.

ii. Company purchase orders or a written letter of authorization and substance acceptable to Chem-Nuclear Systems, L.L.C. (CNS) shall be received before receipt of radioactive waste material at the Barnwell Site and shall refer to CNS Radioactive Material License, the Barnwell Site Disposal Criteria, and subsequent changes thereto.

iii. All shipments shall receive a CNS shipment identification number and conform to the Prior Notification Plan.

Exhibit A-3

U.S. ECOLOGY WASHINGTON, INC.
RICHLAND, WASHINGTON FACILITY
RADIOACTIVE WASTE DISPOSAL

SCHEDULE OF CHARGES
EFFECTIVE MAY 1, 2024
SCHEDULE A, FORTIETH REVISION

Note: Rates in this Schedule A are subject to adjustment in accordance with the rate adjustment mechanism adopted in the Commission's Sixth Supplemental Order in Docket No. UR-950619 as extended by Commission Order in Docket Nos. UR-010623 and UR-010706, and TL-070848.

A. SITE AVAILABILITY CHARGE

1. Rates

Block	Block Criteria	Annual Charge per Generator in $
0	No site use at all	$440
1	Greater than zero but less than or equal to 10 ft^3 and 50 mR/h	841
2	Greater than 10 ft^3 or 50 mR/h* but less than or equal to 20 ft^3 and 100 mR/h*	1,615
3	Greater than 20 ft^3 or 100 mR/h* but less than or equal to 40 ft^3 and 200 mR/h*	3,099
4	Greater than 40 ft^3 or 200 mR/h* but less than or equal to 80 ft^3 and 400 mR/h*	5,951
5	Greater than 80 ft^3or 400 mR/h* but less than or equal to 160 ft^3 and 800 mR/h*	11,429
6	Greater than 160 ft^3 or 800 mR/h* but less than or equal to 320 ft^3 and 1,600 mR/h*	21,917
7	Greater than 320 ft^3 or 1,600 mR/h* but less than or equal to 640 ft^3 and 3,200 mR/h*	42,087
8	Greater than 640 ft^3 or 3,200 mR/h* but less than or equal to 1,280 ft^3 and 6,400 mR/h*	80,795
9	Greater than 1,280 ft^3 or 6,400 mR/h* but less than or equal to 2,560 ft^3 and 12,800 mR/h*	155,125
10	Greater than 2,560 ft^3 or 12,800 mR/h* but less than or equal to 5,120 ft^3 and 25,600 mR/h*	176,701
11	Greater than 5,120 ft^3 or 25,600 mR/h*	176,701

* For purposes of determining the site availability charge, mR/hour is calculated by summing the mR per hour at container surface of all containers received during the year.

2. Exemptions

a. As to waste which is generated for research, medical or educational purposes, educational research institutions shall be placed in a rate block for the site availability charge which is one (1) lower than what would otherwise apply through application of the block criteria shown above. *"Educational research Institution" means a state or independent, not-for-profit, post-secondary educational institution*.

b. As to waste which arises as residual or secondary waste from brokers' provision of compaction or processing services for others, if application of the block criteria shown above would place a broker in a rate block for the site availability charge which is greater than Block No. 7, such broker shall be placed in the rate block which is the greater of (i) Block No. 7, or (ii) the block which is two (2) lower than what would otherwise apply

through application of the block criteria shown above. “Brokers” are those customers holding the “broker” classification of site use permits issued by the Department of Health.

3. Payment Arrangements

a. Initial Determination

Initial determination as to the applicable rate block for each customer shall be based on projections provided by customers prior to the beginning of each calendar year. For those customers who do not intend to ship waste to the facility during the calendar year (those assigned to block No. 0) and for those customers who are initially determined to fall into block Nos. 1–2, the entire site availability charge for the year will be due and payable as of January 1. For those customers who are initially determined to fall into block Nos. 3–8, the entire site availability charge will also be due and payable as of January 1, although those customers may make special arrangements with the Company to pay the charge in equal installments at the beginning of each calendar quarter. For those generators who are initially determined to fall in block nos. 9-11, 1/12 of the site availability charge will be due and payable as of the beginning of each calendar month. These customers may pay in advance if they wish.

b. Reconciliation

The site availability charge is assessed on the basis of actual volume and dose rate of waste delivered during the calendar year. Assessment of additional amounts, or refunds of overpaid amounts, will be made as appropriate to reconcile the initial determination regarding applicable rate block with the actual volume and dose rates during the calendar year.

Exhibit A-3

SCHEDULE A (Continued)

B. DISPOSAL RATES

1. Volume: $287.30 per cubic foot

2. Shipment: $28,680 per manifested shipment

3. Container: $20,430 per container on each manifest.

4. Dose Rate:

Block No.	Dose Rate at Container Surface	Charge per Container in $
1	Less than or equal to 200 mR/h	$119
2	Greater than 200 mR/h but less than or equal to 1,000 mR/h	8,460
3	Greater than 1,000 mR/h but less than or equal to 10,000 mR/h	33,810
4	Greater than 10,000 mR/h but less than or equal to 100,000 mR/h	50,920
5	Greater than 100,000 mR/h	855,000

EXTRAORDINARY VOLUMES

Waste shipments qualifying as an “extraordinary volume” under RCW 81.108.020(3) are charged a rate equal to 51.5% of the volume disposal rate.

NUCLEAR DECOMMISSIONING WASTE

The volume disposal rate applicable to waste from the decommissioning of nuclear generating units shall be 80 percent of those set forth above; provided, however, that such waste must satisfy the quantity requirements for “extraordinary volume” under RCW 81.108.020(3).[3]

SCHEDULE B
Surcharges and Other Special Charges
Fourteenth Revision

ENGINEERED CONCRETE BARRIERS

72" x 8' barrier	$23,945.00 each
84" x 8' barrier	$28,618.00 each

[3] Revised Code of Washington (RCW) 81.108.020(3) - "Extraordinary volume" means volumes of low-level radioactive waste delivered to a site caused by nonrecurring events, outside normal operations of a generator, that are in excess of twenty thousand cubic feet or twenty percent of the preceding year's total volume at such site, whichever is less.

http://leg.wa.gov/ or (http://app.leg.wa.gov/RCW/default.aspx?cite=81.108.020)

SURCHARGE FOR HEAVY OBJECTS

The Company shall collect its actual labor and equipment costs incurred, plus a margin thereon of 25 percent, in handling and disposing of objects or packages weighing more than seventeen thousand five hundred (17,500) pounds.

SCHEDULE C
Tax and Fee Rider
First Revision

The rates and charges set forth in Schedules A and B shall be increased by the amount of any fee, surcharge, or tax assessed on a volume or gross revenue basis against or collected by U.S. Ecology Washington, Inc. as listed below:

Perpetual Care and Maintenance Fees	$1.75 per cubic foot
Business & Occupation Tax	3.3 percent of rates and charges
Site Surveillance Fee	$26.00 per cubic foot
Surcharge (RCW 43.200.233)	$6.50 per cubic foot
Commission Regulatory Fee	1.0 percent of rates and charges

APPENDIX B
CALCULATION OF LOW-LEVEL WASTE BURIAL/DISPOSITION COST ESCALATION FACTORS

The calculations necessary to determine the costs for burial/disposition of radioactive wastes resulting from decommissioning the reference PWR and the reference BWR are performed using spreadsheet models. The spreadsheets evaluate the burial/disposition costs for each of the items originally budgeted in the PWR and BWR decommissioning studies and in Addendums 4 and 3 (References 1 and 2), respectively, to those reports. The costs are based on the published price schedules from the compact-affiliated disposal facilities and a price quote from the non-compact disposal facility located in Utah.

The B_x values reported in this document reflect the updated rate schedules and price quote. All the calculations are based on the same inventory of radioactive wastes as was postulated in the 1986 and 1978–1980 analyses. Starting in 1988, the inventories also included post-Three Mile Island (TMI)-2 contributions from the reference PWR and the reference BWR (References 1 and 2).

B.1 Generators Located in States Not Affiliated with a Compact having a Disposal Facility

Both the Utah and Texas disposal facilities are available for the disposal of all LLW regardless of whether a generator has a compact-affiliated disposal facility available for disposal of their LLW or not. The Utah facility can only dispose of Class A LLW, while the Texas facility is a full-service disposal facility and so can dispose of Class A, B, and C LLW (subject to the constraints described in Section A.3). For the year 2024, B_x = 12.405 and 11.658 for a PWR and BWR, respectively, for disposal of most Class A LLW at the Utah non-compact site and for the remainder of LLW at the Texas LLW disposal site. The B_x values include the additional fees imposed for the disposal of non-compact LLW at the Texas disposal facility. The B_x values are summarized in Table 2-1. These B_x values should be used by generators located in States not affiliated with a compact having a disposal facility.

Waste burial costs for the year 2024 were developed using both the rate schedules for the Texas disposal facility provided in Exhibit A-1, and the associated additional fees for out-of-compact waste, and the price quote for the non-compact disposal facility provided in Table A-1. The spreadsheet calculations for the current year, which are too voluminous to present here, are summarized in Table B-1 and Table B-2 for PWR and BWR plants, respectively. For comparison purposes, Table B-3 and Table B-4 provide summaries of the waste burial/disposition costs for 2022 for PWR and BWR plants, respectively.

B.2 Texas LLW Disposal Site

For the year 2024, B_x = 6.650 and 6.009 for a PWR and BWR, respectively, at the Texas disposal facility. These B_x values reflect the adjustment in waste burial costs at the Texas LLW disposal site normalized to the 1986 Washington LLW disposal site burial costs.

Waste burial costs for the year 2024 were developed using the rate schedules provided in Exhibit A-1. The spreadsheet calculations for the current year, which are too voluminous to present here, are summarized in Table B-5 and Table B-6 for PWR and BWR plants,

respectively. For comparison purposes, Table B-7 and Table B-8 provide summaries of the waste burial costs at the Texas LLW disposal site for 2022 for PWR and BWR plants, respectively.

B.3 South Carolina LLW Disposal Site

For the year 2024, B_x = 39.197 and 34.514 for a PWR and BWR, respectively, at the South Carolina disposal facility. These B_x values reflect the adjustment in waste burial costs at the South Carolina LLW disposal site normalized to the 1986 Washington LLW disposal site burial costs. B_x values for several previous revisions of NUREG-1307 are summarized in Table 2-1.

Waste burial costs for the year 2024 were developed using the rate schedules provided in Exhibit A-2. The spreadsheet calculations for the current year, which are too voluminous to present here, are summarized in Table B-9 and Table B-10 for PWR and BWR plants, respectively. For comparison purposes, Table B-11 and Table B-12 provide summaries of the waste burial costs at the South Carolina LLW disposal site for 2022 for PWR and BWR plants, respectively.

B.4 Washington LLW Disposal Site

The LLW disposal site located in Washington was used to develop the original decommissioning cost estimates for the reference PWR and BWR. These estimates are the basis for the minimum decommissioning fund requirement specified in 10 CFR 50.75(c), which is in 1986 dollars. Thus, B_x = 1.0/1.0 (for PWR/BWR) for 1986.

For the year 2024, B_x = 13.260 and 11.274 for a PWR and BWR, respectively, at the Washington disposal facility. These B_x values reflect the adjustment in waste burial costs at the Washington LLW disposal site since 1986. B_x values for several previous revisions of NUREG-1307 are summarized in Table 2-1.

Waste burial costs for the year 2024 were developed using the rate schedule provided in Exhibit A-1. The spreadsheet calculations for the current year, which are too voluminous to present here, are summarized in Table B-13 and Table B-14 for PWR and BWR plants, respectively. For comparison purposes, Table B-15 and B-16 provide summaries of the waste burial costs at the Washington LLW disposal site for 2022 for PWR and BWR plants, respectively.

B.5 Combination of Non-Compact and Compact-Affiliated Disposal Facilities

For the year 2024, B_x = 9.471 and 8.596 for a PWR and BWR, respectively, for disposal of most Class A LLW at the Utah non-compact disposal site, and for the remainder of LLW at the Washington LLW disposal site. B_x = 12.813 and 15.017 for a PWR and BWR, respectively, for disposal of most Class A LLW at the Utah non-compact disposal site, and for the remainder of LLW at the South Carolina disposal site. B_x = 10.923 and 9.862 for a PWR and BWR, respectively, for disposal of most Class A LLW at the Utah non-compact site, and for the remainder of LLW at the Texas LLW disposal site. B_x values are summarized in Table 2-1.

Waste burial costs for the year 2024 were developed using both the rate schedules for the compact-affiliated disposal facilities provided in Exhibits A-1, A-2, and A-3 and for the price quote for the non-compact disposal facility provided in Table A-2. The spreadsheet calculations for the current year, which are too voluminous to present here, are summarized in Table B-17 through Table B-22 for the Texas, South Carolina, and Washington LLW disposal sites for PWR

and BWR plants, respectively. For comparison purposes, Table B-23 through Table B-28 provide summaries of the Texas, South Carolina, and Washington waste burial/disposition costs for 2022 for PWR and BWR plants, respectively.

B.6 Other

As other low-level radioactive waste burial sites come into service in the interstate compacts, values for B_x will be calculated using the price schedules for each of those sites and will be incorporated into subsequent issues of this NUREG. Those materials whose activity concentrations exceed the limits for Class C LLW are identified by footnote as greater-than-Class C (GTCC) material. Because the analyses in this NUREG postulate placing this material in a LLW disposal facility, the disposal costs for this material may be significantly overestimated compared with high-density packaging and geologic repository disposal. It may also be feasible to store GTCC waste in independent spent fuel storage installations (ISFSIs) or other interim storage facilities, as permitted by 10 CFR Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste.”

Table B-1 PWR Disposition Costs for Generators Located in States Not Affiliated with a Compact having a Disposal Facility (2024 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	0	827,640	827,640
VESSEL HEAD & BOTTOM	0	0	0	0	0	0	1,839,200	1,839,200
UPPER CORE SUPPORT ASSM	0	0	0	0	0	0	87,120	87,120
UPPER SUPPORT COLUMN	0	0	0	0	0	0	87,120	87,120
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	0	1,975,000
GUIDE TUBES	0	0	0	0	0	0	130,680	130,680
LOWER CORE BARREL[a]	3,200,000	2,400,000	0	0	7,040,000	0	0	12,640,000
THERMAL SHIELDS[a]	600,000	450,000	0	0	1,320,000	0	0	2,370,000
CORE SHROUD[a]	400,000	300,000	0	0	13,420,000	0	0	14,120,000
LOWER GRID PLATE[a]	500,000	375,000	0	0	2,200,000	0	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	0	1,500,000
BIO SHIELD CONCRETE	0	0	0	0	0	0	5,436,288	5,436,288
REACTOR CAVITY LINER	0	0	0	0	0	0	111,514	111,514
REACTOR COOLANT PUMPS	0	0	0	0	0	0	1,931,160	1,931,160
PRESSURIZER	0	0	0	0	0	0	1,655,280	1,655,280
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	0	87,120	87,120
PRESSURIZER RELIEF TANK	0	0	0	0	0	0	261,360	261,360
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	0	871,200	871,200
STEAM GENERATORS	0	0	0	0	0	0	9,822,248	9,822,248
REACTOR COOLANT PIPING	0	0	0	0	0	0	718,740	718,740
REMAINING CONTAM. MATLS	0	0	0	0	0	0	11,458,022	11,458,022
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	0	103,914,776	103,914,776
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	0	4,100,000
COMBUSTIBLE WASTES - CLASS A	0	0	0	0	0	0	5,263,335	5,263,335
COMBUSTIBLE WASTES - CLASS B	3,150,000	0	0	0	26,250	0	0	3,176,250
EVAPORATOR BOTTOMS	0	0	0	0	0	0	2,243,253	2,243,253
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	3,388,115	3,388,115
SUBTOTAL PWR COSTS	**12,865,000**	**5,550,000**	**0**	**0**	**27,951,250**	**0**	**150,134,170**	**196,500,420**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)								26,660,594
TOTAL PWR COSTS								**223,161,013**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-2 BWR Disposition Costs for Generators Located in States Not Affiliated with a Compact having a Disposal Facility (2024 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,018	0	0	1,883,164
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,001	0	0	736,574
CONTROL RODS/INCORES	529,719	600,000	0	0	1,760,350	211,888	0	3,101,956
CONTROL RODS GUIDES	0	0	0	0	0	0	30,766	30,766
JET PUMPS	494,404	1,500,000	0	0	1,000,037	197,762	0	3,192,203
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,505,056	339,020	0	8,091,626
CORE SUPPORT PLATE	0	0	0	0	0	0	84,607	84,607
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,811,655	663,914	0	43,635,356
REACTOR VESSEL WALL	0	0	0	0	0	0	61,532	61,532
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	0	692,237	692,237
REACT. WATER REC	0	0	0	0	0	0	676,854	676,854
SAC SHIELD Contaminated Matl	0	0	0	0	0	0	2,384,371	2,384,371
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	0	27,197,214	27,197,214
CONTAINM. ATMOSPHERIC	0	0	0	0	0	0	369,193	369,193
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	0	130,756	130,756
LOW PRESSURE CORE SPRAY	0	0	0	0	0	0	76,915	76,915
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	0	246,129	246,129
REACTOR CORE ISO COOLING	0	0	0	0	0	0	99,990	99,990
RESIDUAL HEAT REMOVAL	0	0	0	0	0	0	476,874	476,874
POOL LINER & RACKS	0	0	0	0	0	0	2,930,469	2,930,469
CONTAMINATED CONCRETE	0	0	0	0	0	0	3,338,120	3,338,120
OTHER REACTOR BUILDING	0	0	0	0	0	0	10,914,267	10,914,267
TURBINE	0	0	0	0	0	0	22,830,140	22,830,140
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	0	2,792,022	2,792,022
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	5,668,650	5,668,650
MAIN STEAM	0	0	0	0	0	0	546,098	546,098
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	0	5,499,437	5,499,437
REACTOR FEEDWATER PUMPS	0	0	0	0	0	0	3,150,105	3,150,105
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	930,674	930,674
OTHER TG BLDG	0	0	0	0	0	0	37,357,712	37,357,712
RAD WASTE BLDG	0	0	0	0	0	0	18,498,105	18,498,105
REACTOR BLDG - CLASS A	0	0	0	0	0	0	1,590,991	5,512,221
REACTOR BLDG - CLASS B	3,285,317	0	0	0	27,688	0	0	3,313,005
TG BLDG - CLASS A	0	0	0	0	0	0	1,074,121	3,721,449
TG BLDG - CLASS B	2,217,404	0	0	0	18,688	0	0	2,236,091
RAD WASTE & CONTROL - CLASS A	0	0	0	0	0	0	927,136	3,212,198
RAD WASTE & CONTROL - CLASS B	1,913,345	0	0	0	16,125	0	0	1,929,470
CONCENTRATOR BOTTOMS - CLASS A	0	0	0	0	0	0	554,256	554,256
CONCENTRATOR BOTTOMS - CLASS B	5,226,561	0	0	0	1,560,000	0	0	6,786,561
OTHER	0	0	0	0	0	0	1,338,324	1,338,324
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	276,895	276,895
SUBTOTAL BWR COSTS	**16,703,806**	**19,575,000**	**0**	**0**	**37,214,616**	**1,412,584**	**152,744,958**	**236,504,584**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)								43,145,230
TOTAL BWR COSTS								**279,575,538**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-3 PWR Disposition Costs for Generators Located in States Not Affiliated with a Compact having a Disposal Facility (2022 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	0	957,220	957,220
VESSEL HEAD & BOTTOM	0	0	0	0	0	0	2,129,600	2,129,600
UPPER CORE SUPPORT ASSM	0	0	0	0	0	0	100,760	100,760
UPPER SUPPORT COLUMN	0	0	0	0	0	0	100,760	100,760
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	0	1,975,000
GUIDE TUBES	0	0	0	0	0	0	151,140	151,140
LOWER CORE BARREL[a]	3,200,000	2,400,000	0	0	7,040,000	0	0	12,640,000
THERMAL SHIELDS[a]	600,000	450,000	0	0	1,320,000	0	0	2,370,000
CORE SHROUD[a]	400,000	300,000	0	0	13,420,000	0	0	14,120,000
LOWER GRID PLATE[a]	500,000	375,000	0	0	2,200,000	0	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	0	1,500,000
BIO SHIELD CONCRETE	0	0	0	0	0	0	6,287,424	6,287,424
REACTOR CAVITY LINER	0	0	0	0	0	0	128,973	128,973
REACTOR COOLANT PUMPS	0	0	0	0	0	0	2,236,080	2,236,080
PRESSURIZER	0	0	0	0	0	0	1,916,640	1,916,640
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	0	100,760	100,760
PRESSURIZER RELIEF TANK	0	0	0	0	0	0	302,280	302,280
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	0	1,007,600	1,007,600
STEAM GENERATORS	0	0	0	0	0	0	11,373,129	11,373,129
REACTOR COOLANT PIPING	0	0	0	0	0	0	831,270	831,270
REMAINING CONTAM. MATLS	0	0	0	0	0	0	13,251,955	13,251,955
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	0	120,184,261	120,184,261
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	0	4,100,000
COMBUSTIBLE WASTES - CLASS A	0	0	0	0	0	0	6,091,965	6,091,965
COMBUSTIBLE WASTES - CLASS B	3,150,000	0	0	0	26,250	0	0	3,176,250
EVAPORATOR BOTTOMS	0	0	0	0	0	0	2,552,667	2,552,667
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	3,918,577	3,918,577
SUBTOTAL PWR COSTS	**12,865,000**	**5,550,000**	**0**	**0**	**27,951,250**	**0**	**173,623,060**	**219,989,310**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)								26,660,594
TOTAL PWR COSTS								**246,649,904**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-4 BWR Disposition Costs for Generators Located in States Not Affiliated with a Compact having a Disposal Facility (2022 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,150	0	0	1,883,296
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,009	0	0	736,582
CONTROL RODS/INCORES	529,719	600,000	0	0	1,762,100	211,888	0	3,103,707
CONTROL RODS GUIDES	0	0	0	0	0	0	35,583	35,583
JET PUMPS	494,404	1,500,000	0	0	1,000,644	197,762	0	3,192,810
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,509,440	339,020	0	8,096,011
CORE SUPPORT PLATE	0	0	0	0	0	0	97,853	97,853
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,933,950	663,914	0	43,757,651
REACTOR VESSEL WALL	0	0	0	0	0	0	71,166	71,166
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	0	800,617	800,617
REACT. WATER REC	0	0	0	0	0	0	782,826	782,826
SAC SHIELD Contaminated Matl	0	0	0	0	0	0	2,757,682	2,757,682
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	0	31,455,364	31,455,364
CONTAINM. ATMOSPHERIC	0	0	0	0	0	0	426,996	426,996
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	0	151,228	151,228
LOW PRESSURE CORE SPRAY	0	0	0	0	0	0	88,957	88,957
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	0	284,664	284,664
REACTOR CORE ISO COOLING	0	0	0	0	0	0	115,645	115,645
RESIDUAL HEAT REMOVAL	0	0	0	0	0	0	551,536	551,536
POOL LINER & RACKS	0	0	0	0	0	0	3,389,280	3,389,280
CONTAMINATED CONCRETE	0	0	0	0	0	0	3,860,755	3,860,755
OTHER REACTOR BUILDING	0	0	0	0	0	0	12,623,066	12,623,066
TURBINE	0	0	0	0	0	0	26,434,899	26,434,899
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	0	3,229,156	3,229,156
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	6,556,166	6,556,166
MAIN STEAM	0	0	0	0	0	0	631,598	631,598
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	0	6,360,460	6,360,460
REACTOR FEEDWATER PUMPS	0	0	0	0	0	0	3,647,490	3,647,490
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	1,076,385	1,076,385
OTHER TG BLDG	0	0	0	0	0	0	43,206,647	43,206,647
RAD WASTE BLDG	0	0	0	0	0	0	21,394,273	21,394,273
REACTOR BLDG - CLASS A	0	0	0	0	0	0	1,840,085	1,840,085
REACTOR BLDG - CLASS B	3,285,317	0	0	0	27,688	0	0	3,313,005
TG BLDG - CLASS A	0	0	0	0	0	0	1,242,291	1,242,291
TG BLDG - CLASS B	2,217,404	0	0	0	18,688	0	0	2,236,091
RAD WASTE & CONTROL - CLASS A	0	0	0	0	0	0	1,072,293	1,072,293
RAD WASTE & CONTROL - CLASS B	1,913,345	0	0	0	16,125	0	0	1,929,470
CONCENTRATOR BOTTOMS - CLASS A	0	0	0	0	0	0	630,705	630,705
CONCENTRATOR BOTTOMS - CLASS B	5,226,561	0	0	0	1,560,000	0	0	6,786,561
OTHER	0	0	0	0	0	0	1,547,860	1,547,860
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	320,247	320,247
SUBTOTAL BWR COSTS	**16,703,806**	**19,575,000**	**0**	**0**	**37,343,793**	**1,412,584**	**176,683,774**	**251,718,957**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)								43,145,230
TOTAL BWR COSTS								**294,864,187**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-5 PWR Burial Costs at the Texas Site (2024 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	DISPOSAL COST
VESSEL WALL	380,000	2,850,000	0	0	958,500	0	4,188,500
VESSEL HEAD & BOTTOM	400,000	3,000,000	0	0	1,000	0	3,401,000
UPPER CORE SUPPORT ASSM	40,000	300,000	0	0	500	0	340,500
UPPER SUPPORT COLUMN	40,000	300,000	0	0	5,000	0	345,000
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	1,975,000
GUIDE TUBES	60,000	450,000	0	0	5,000	0	515,000
LOWER CORE BARREL[(a)]	3,200,000	2,400,000	0	0	7,040,000	0	12,640,000
THERMAL SHIELDS[(a)]	600,000	450,000	0	0	1,320,000	0	2,370,000
CORE SHROUD[(a)]	400,000	300,000	0	0	13,420,000	0	14,120,000
LOWER GRID PLATE[(a)]	500,000	375,000	0	0	2,200,000	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	1,500,000
BIO SHIELD CONCRETE	2,496,000	0	0	0	100,000	0	2,596,000
REACTOR CAVITY LINER	51,200	0	0	0	500	0	51,700
REACTOR COOLANT PUMPS	420,000	0	0	240,000	3,883	0	663,883
PRESSURIZER	360,000	0	0	0	254	0	360,254
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	40,000	0	0	0	590	0	40,590
PRESSURIZER RELIEF TANK	120,000	0	0	0	202	0	120,202
SAFETY INJECTION ACCUM TANKS	400,000	0	0	0	4,072	0	404,072
STEAM GENERATORS	2,136,200	0	0	640,000	220,000	0	2,996,200
REACTOR COOLANT PIPING	330,000	0	0	0	14,900	0	344,900
REMAINING CONTAM. MATLS	5,260,800	0	0	0	11,190	0	5,271,990
CONTAMINATED MATRL OTHR BLD	47,711,100	0	0	0	9,213	0	47,720,313
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	4,100,000
COMBUSTIBLE WASTES - CLASS A	697,500	0	0	0	11,625	0	709,125
COMBUSTIBLE WASTES - CLASS B	3,150,000	0	0	0	26,250	0	3,176,250
EVAPORATOR BOTTOMS	940,000	0	0	0	690,250	0	1,630,250
POST-TMI-2 ADDITIONS	1,555,608	0	0	0	0	0	1,555,608
SUBTOTAL PWR COSTS	**76,303,408**	**12,450,000**	**0**	**880,000**	**29,987,927**	**0**	**119,621,335**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)							0
TOTAL PWR COSTS							**119,621,335**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-6 BWR Burial Costs at the Texas Site (2024 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,018	0	1,883,164
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,001	0	736,574
CONTROL RODS/INCORES	529,719	600,000	0	0	1,760,350	211,888	3,101,956
CONTROL RODS GUIDES	14,126	450,000	0	0	5,000	0	469,126
JET PUMPS	494,404	1,500,000	0	0	1,000,037	197,762	3,192,203
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,505,056	339,020	8,091,626
CORE SUPPORT PLATE	38,846	1,200,000	0	0	32,501	0	1,271,347
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,811,655	663,914	43,635,356
REACTOR VESSEL WALL	28,252	1,500,000	0	0	108,002	0	1,636,254
SAC SHIELD Neutron-Activated Matl	317,831	0	0	0	8,500	0	326,332
REACT. WATER REC	310,768	0	0	0	2,198	0	312,966
SAC SHIELD Contaminated Matl	1,094,753	0	0	0	7,741	0	1,102,494
OTHER PRIMARY CONTAINMENT	12,487,243	0	0	0	88,302	0	12,575,545
CONTAINM. ATMOSPHERIC	169,510	0	0	0	1,199	0	170,709
HIGH PRESSURE CORE SPRAY	60,035	0	0	0	425	0	60,459
LOW PRESSURE CORE SPRAY	35,315	0	0	0	250	0	35,564
REACTOR BLDG CLOSED COOLING	113,007	0	0	0	799	0	113,806
REACTOR CORE ISO COOLING	45,909	0	0	0	325	0	46,234
RESIDUAL HEAT REMOVAL	218,951	0	0	0	1,548	0	220,499
POOL LINER & RACKS	1,345,486	0	0	0	9,514	0	1,355,001
CONTAMINATED CONCRETE	1,532,654	0	0	0	10,838	0	1,543,492
OTHER REACTOR BUILDING	5,011,142	0	0	0	35,436	0	5,046,578
TURBINE	4,965,233	0	0	0	35,111	0	5,000,344
NUCLEAR STEAM CONDENSATE	1,281,920	0	0	0	9,065	0	1,290,985
LOW PRESSURE FEEDWATER HEATERS	2,602,686	0	0	0	18,405	0	2,621,091
MAIN STEAM	250,734	0	0	0	1,773	0	252,507
MOISTURE SEPARATOR REHEATERS	2,524,994	0	0	0	17,855	0	2,542,849
REACTOR FEEDWATER PUMPS	685,103	0	0	0	4,845	0	689,948
HIGH PRESSURE FEEDWATER HEATERS	427,307	0	0	0	3,022	0	430,328
OTHER TG BLDG	17,152,301	0	0	0	121,291	0	17,273,592
RAD WASTE BLDG	8,493,161	0	0	0	60,059	0	8,553,220
REACTOR BLDG - CLASS A	730,483	0	0	0	12,313	0	742,795
REACTOR BLDG - CLASS B	3,285,317	0	0	0	27,688	0	3,313,005
TG BLDG - CLASS A	493,168	0	0	0	8,313	0	501,481
TG BLDG - CLASS B	2,217,404	0	0	0	18,688	0	2,236,091
RAD WASTE & CONTROL - CLASS A	425,682	0	0	0	7,175	0	432,857
RAD WASTE & CONTROL - CLASS B	1,913,345	0	0	0	16,125	0	1,929,470
CONCENTRATOR BOTTOMS - CLASS A	1,737,478	0	0	0	72,600	0	1,810,078
CONCENTRATOR BOTTOMS - CLASS B	5,226,561	0	0	0	1,560,000	0	6,786,561
OTHER	614,474	0	0	0	16,450	0	630,924
POST-TMI-2 ADDITIONS	127,133	0	0	0	0	0	127,133
SUBTOTAL BWR COSTS	**82,039,489**	**22,725,000**	**0**	**0**	**37,915,470**	**1,412,584**	**144,092,543**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)							0
TOTAL BWR COSTS							**144,092,543**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-7 PWR Burial Costs at the Texas Site (2022 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	DISPOSAL COST
VESSEL WALL	380,000	2,850,000	0	0	958,500	0	4,188,500
VESSEL HEAD & BOTTOM	400,000	3,000,000	0	0	1,000	0	3,401,000
UPPER CORE SUPPORT ASSM	40,000	300,000	0	0	500	0	340,500
UPPER SUPPORT COLUMN	40,000	300,000	0	0	5,000	0	345,000
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	1,975,000
GUIDE TUBES	60,000	450,000	0	0	5,000	0	515,000
LOWER CORE BARREL[a]	3,200,000	2,400,000	0	0	7,040,000	0	12,640,000
THERMAL SHIELDS[a]	600,000	450,000	0	0	1,320,000	0	2,370,000
CORE SHROUD[a]	400,000	300,000	0	0	13,420,000	0	14,120,000
LOWER GRID PLATE[a]	500,000	375,000	0	0	2,200,000	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	1,500,000
BIO SHIELD CONCRETE	2,496,000	0	0	0	100,000	0	2,596,000
REACTOR CAVITY LINER	51,200	0	0	0	500	0	51,700
REACTOR COOLANT PUMPS	420,000	0	0	240,000	3,883	0	663,883
PRESSURIZER	360,000	0	0	0	254	0	360,254
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	40,000	0	0	0	590	0	40,590
PRESSURIZER RELIEF TANK	120,000	0	0	0	202	0	120,202
SAFETY INJECTION ACCUM TANKS	400,000	0	0	0	4,072	0	404,072
STEAM GENERATORS	2,136,200	0	0	640,000	220,000	0	2,996,200
REACTOR COOLANT PIPING	330,000	0	0	0	14,900	0	344,900
REMAINING CONTAM. MATLS	5,260,800	0	0	0	11,190	0	5,271,990
CONTAMINATED MATRL OTHR BLD	47,711,100	0	0	0	9,213	0	47,720,313
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	4,100,000
COMBUSTIBLE WASTES - CLASS A	697,500	0	0	0	11,625	0	709,125
COMBUSTIBLE WASTES - CLASS B	3,150,000	0	0	0	26,250	0	3,176,250
EVAPORATOR BOTTOMS	940,000	0	0	0	690,250	0	1,630,250
POST-TMI-2 ADDITIONS	1,555,608	0	0	0	0	0	1,555,608
SUBTOTAL PWR COSTS	**76,303,408**	**12,450,000**	**0**	**880,000**	**29,987,927**	**0**	**119,621,335**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)							0
TOTAL PWR COSTS							**119,621,335**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-8 BWR Burial Costs at the Texas Site (2022 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,150	0	1,883,296
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,009	0	736,582
CONTROL RODS/INCORES	529,719	600,000	0	0	1,762,100	211,888	3,103,707
CONTROL RODS GUIDES	14,126	450,000	0	0	5,001	0	469,127
JET PUMPS	494,404	1,500,000	0	0	1,000,644	197,762	3,192,810
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,509,440	339,020	8,096,011
CORE SUPPORT PLATE	38,846	1,200,000	0	0	32,506	0	1,271,352
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,933,950	663,914	43,757,651
REACTOR VESSEL WALL	28,252	1,500,000	0	0	108,001	0	1,636,252
SAC SHIELD Neutron-Activated Matl	317,831	0	0	0	8,500	0	326,332
REACT. WATER REC	310,768	0	0	0	2,198	0	312,966
SAC SHIELD Contaminated Matl	1,094,753	0	0	0	7,741	0	1,102,494
OTHER PRIMARY CONTAINMENT	12,487,243	0	0	0	88,302	0	12,575,545
CONTAINM. ATMOSPHERIC	169,510	0	0	0	1,199	0	170,709
HIGH PRESSURE CORE SPRAY	60,035	0	0	0	425	0	60,459
LOW PRESSURE CORE SPRAY	35,315	0	0	0	250	0	35,564
REACTOR BLDG CLOSED COOLING	113,007	0	0	0	799	0	113,806
REACTOR CORE ISO COOLING	45,909	0	0	0	325	0	46,234
RESIDUAL HEAT REMOVAL	218,951	0	0	0	1,548	0	220,499
POOL LINER & RACKS	1,345,486	0	0	0	9,514	0	1,355,001
CONTAMINATED CONCRETE	1,532,654	0	0	0	10,838	0	1,543,492
OTHER REACTOR BUILDING	5,011,142	0	0	0	35,436	0	5,046,578
TURBINE	4,965,233	0	0	0	35,111	0	5,000,344
NUCLEAR STEAM CONDENSATE	1,281,920	0	0	0	9,065	0	1,290,985
LOW PRESSURE FEEDWATER HEATERS	2,602,686	0	0	0	18,405	0	2,621,091
MAIN STEAM	250,734	0	0	0	1,773	0	252,507
MOISTURE SEPARATOR REHEATERS	2,524,994	0	0	0	17,855	0	2,542,849
REACTOR FEEDWATER PUMPS	685,103	0	0	0	4,845	0	689,948
HIGH PRESSURE FEEDWATER HEATERS	427,307	0	0	0	3,022	0	430,328
OTHER TG BLDG	17,152,301	0	0	0	121,291	0	17,273,592
RAD WASTE BLDG	8,493,161	0	0	0	60,059	0	8,553,220
REACTOR BLDG - CLASS A	730,483	0	0	0	12,313	0	742,795
REACTOR BLDG - CLASS B	3,285,317	0	0	0	27,688	0	3,313,005
TG BLDG - CLASS A	493,168	0	0	0	8,313	0	501,481
TG BLDG - CLASS B	2,217,404	0	0	0	18,688	0	2,236,091
RAD WASTE & CONTROL - CLASS A	425,682	0	0	0	7,175	0	432,857
RAD WASTE & CONTROL - CLASS B	1,913,345	0	0	0	16,125	0	1,929,470
CONCENTRATOR BOTTOMS - CLASS A	1,737,478	0	0	0	72,600	0	1,810,078
CONCENTRATOR BOTTOMS - CLASS B	5,226,561	0	0	0	1,560,000	0	6,786,561
OTHER	614,474	0	0	0	16,450	0	630,924
POST-TMI-2 ADDITIONS	127,133	0	0	0	0	0	127,133
SUBTOTAL BWR COSTS	**82,039,489**	**22,725,000**	**0**	**0**	**38,044,651**	**1,412,584**	**144,221,724**
OUT-OF-COMPACT TAXES & FEES (% OF CHARGES)							0
TOTAL BWR COSTS							**144,221,724**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-9 PWR Burial Costs at the South Carolina Site (2024 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	DISPOSAL COST
VESSEL WALL	5,898,632	4,283,132	11,286,000	0	2,831,343	24,299,107
VESSEL HEAD & BOTTOM	3,757,731	4,508,560	14,860	0	0	8,281,151
UPPER CORE SUPPORT ASSM	354,756	450,856	7,430	0	113,522	926,563
UPPER SUPPORT COLUMN	327,982	450,856	74,300	0	104,954	958,092
UPPER CORE BARREL	156,204	225,428	594,000	0	74,978	1,050,610
UPPER CORE GRID PLATE	390,510	563,570	1,485,000	0	187,445	2,626,525
GUIDE TUBES	577,955	676,284	74,300	0	156,048	1,484,587
LOWER CORE BARREL[(a)]	2,499,264	3,606,848	9,504,000	0	1,199,647	16,809,759
THERMAL SHIELDS[(a)]	468,612	676,284	1,782,000	0	224,934	3,151,830
CORE SHROUD[(a)]	362,788	450,856	18,117,000	0	174,138	19,104,782
LOWER GRID PLATE[(a)]	390,510	563,570	2,970,000	0	187,445	4,111,525
LOWER SUPPORT COLUMN	99,064	112,714	297,000	0	47,551	556,328
LOWER CORE FORGING	1,076,315	1,239,854	1,857,500	0	516,631	4,690,300
MISC INTERNALS	872,800	901,712	1,486,000	0	418,944	3,679,456
BIO SHIELD CONCRETE	21,274,500	0	1,486,000	0	0	22,760,500
REACTOR CAVITY LINER	428,384	0	7,430	0	0	435,814
REACTOR COOLANT PUMPS	7,457,584	0	57,701	0	0	7,515,285
PRESSURIZER	3,384,420	0	3,767	0	0	3,388,187
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	312,408	0	8,760	0	0	321,168
PRESSURIZER RELIEF TANK	937,224	0	3,002	0	0	940,226
SAFETY INJECTION ACCUM TANKS	3,338,460	0	60,510	0	0	3,398,970
STEAM GENERATORS	27,291,584	0	3,269,200	0	0	30,560,784
REACTOR COOLANT PIPING	2,971,914	0	221,414	0	0	3,193,328
REMAINING CONTAM. MATLS	52,537,282	0	166,276	0	0	52,703,557
CONTAMINATED MATRL OTHR BLD	404,171,067	0	136,898	0	0	404,307,965
FILTER CARTRIDGES	535,518	676,284	1,782,000	0	64,262	3,058,064
SPENT RESINS	1,963,800	2,254,280	5,940,000	0	942,624	11,100,704
COMBUSTIBLE WASTES – CLASS A	5,447,615	0	172,748	0	0	5,620,362
COMBUSTIBLE WASTES – CLASS B	2,945,700	6,762,840	390,075	0	235,656	10,334,271
EVAPORATOR BOTTOMS	9,229,860	10,595,116	10,257,115	0	1,260,760	31,342,851
POST-TMI-2 ADDITIONS	18,512,359	0	0	0	0	18,512,359
SUBTOTAL PWR COSTS	**579,972,799**	**38,999,044**	**73,512,285**	**0**	**8,740,880**	**701,225,008**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE						3,883,494
TOTAL PWR COSTS (NSIDE COMPACT)						**705,108,503**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-10 BWR Burial Costs at the South Carolina Site (2024 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	DISPOSAL COST
STEAM SEPARATOR	363,503	3,155,992	4,158,000	0	174,481	7,851,976
FUEL SUPPORT & PIECES	159,962	1,577,996	520,100	0	76,782	2,334,840
CONTROL RODS/INCORES	476,479	901,712	2,376,000	0	228,710	3,982,900
CONTROL RODS GUIDES	133,922	1,352,568	74,300	0	49,551	1,610,341
JET PUMPS	386,140	4,508,560	5,940,000	0	185,347	11,020,047
TOP FUEL GUIDES	661,954	8,115,408	21,384,000	0	317,738	30,479,100
CORE SUPPORT PLATE	444,970	3,494,134	482,950	0	164,639	4,586,693
CORE SHROUD[(a)]	1,296,326	15,779,960	41,580,000	0	622,237	59,278,523
REACTOR VESSEL WALL	3,447,833	2,479,708	1,604,880	0	1,275,698	8,808,120
SAC SHIELD Neutron-Activated Matl	5,946,802	0	126,310	0	0	6,073,112
REACT. WATER REC	2,572,968	0	32,656	0	0	2,605,624
SAC SHIELD Contaminated Matl	15,400,468	0	115,038	0	0	15,515,506
OTHER PRIMARY CONTAINMENT	108,017,664	0	1,312,175	0	0	109,329,838
CONTAINM. ATMOSPHERIC	1,323,908	0	17,812	0	0	1,341,720
HIGH PRESSURE CORE SPRAY	669,620	0	6,309	0	0	675,928
LOW PRESSURE CORE SPRAY	296,904	0	3,711	0	0	300,615
REACTOR BLDG CLOSED COOLING	1,040,765	0	11,875	0	0	1,052,640
REACTOR CORE ISO COOLING	358,558	0	4,824	0	0	363,382
RESIDUAL HEAT REMOVAL	1,978,313	0	23,008	0	0	2,001,320
POOL LINER & RACKS	13,265,931	0	141,385	0	0	13,407,317
CONTAMINATED CONCRETE	14,629,734	0	161,053	0	0	14,790,787
OTHER REACTOR BUILDING	39,138,019	0	526,577	0	0	39,664,596
TURBINE	49,074,097	0	521,753	0	0	49,595,849
NUCLEAR STEAM CONDENSATE	10,012,051	0	134,706	0	0	10,146,757
LOW PRESSURE FEEDWATER HEATERS	21,780,803	0	273,493	0	0	22,054,296
MAIN STEAM	1,958,280	0	26,347	0	0	1,984,627
MOISTURE SEPARATOR REHEATERS	19,720,707	0	265,329	0	0	19,986,037
REACTOR FEEDWATER PUMPS	5,350,793	0	71,991	0	0	5,422,785
HIGH PRESSURE FEEDWATER HEATERS	3,534,746	0	44,902	0	0	3,579,647
OTHER TG BLDG	133,962,903	0	1,802,384	0	0	135,765,287
RAD WASTE BLDG	66,333,288	0	892,472	0	0	67,225,760
REACTOR BLDG – CLASS A	5,705,214	0	182,964	0	0	5,888,178
REACTOR BLDG – CLASS B	14,279,321	7,213,696	411,436	0	1,142,346	23,046,799
TG BLDG – CLASS A	3,851,744	0	123,524	0	0	3,975,268
TG BLDG – CLASS B	9,370,804	4,733,988	277,696	0	749,664	15,132,153
RAD WASTE & CONTROL – CLASS A	3,324,663	0	106,621	0	0	3,431,284
RAD WASTE & CONTROL – CLASS B	8,478,347	4,283,132	239,618	0	678,268	13,679,364
CONCENTRATOR BOTTOMS – CLASS A	29,161,849	19,499,522	1,078,836	0	5,137,879	54,878,086
CONCENTRATOR BOTTOMS – CLASS B	8,765,411	5,861,128	15,444,000	0	1,544,334	31,614,873
OTHER	10,282,502	6,875,554	244,447	0	256,220	17,658,722
POST-TMI-2 ADDITIONS	1,512,928	0	0	0	0	1,512,928
SUBTOTAL BWR COSTS	**618,471,194**	**89,833,058**	**102,745,481**	**0**	**11,432,588**	**823,653,626**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE						4,020,364
TOTAL BWR COSTS (INSIDE COMPACT)						**827,673,990**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-11 PWR Burial Costs at the South Carolina Site (2022 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	DISPOSAL COST
VESSEL WALL	5,829,635	4,232,972	11,156,800	0	2,798,225	24,017,632
VESSEL HEAD & BOTTOM	3,713,942	4,455,760	14,680	0	0	8,184,382
UPPER CORE SUPPORT ASSM	350,622	445,576	7,340	0	112,199	915,736
UPPER SUPPORT COLUMN	324,160	445,576	73,400	0	103,731	946,867
UPPER CORE BARREL	154,377	222,788	587,200	0	74,101	1,038,466
UPPER CORE GRID PLATE	385,943	556,970	1,468,000	0	185,252	2,596,165
GUIDE TUBES	571,195	668,364	73,400	0	154,223	1,467,182
LOWER CORE BARREL[(a)]	2,470,032	3,564,608	9,395,200	0	1,185,615	16,615,455
THERMAL SHIELDS[(a)]	463,131	668,364	1,761,600	0	222,303	3,115,398
CORE SHROUD[(a)]	358,560	445,576	17,909,600	0	172,109	18,885,845
LOWER GRID PLATE[(a)]	385,943	556,970	2,936,000	0	185,252	4,064,165
LOWER SUPPORT COLUMN	97,909	111,394	293,600	0	46,997	549,900
LOWER CORE FORGING	1,063,772	1,225,334	1,835,000	0	510,611	4,634,717
MISC INTERNALS	862,560	891,152	1,468,000	0	414,029	3,635,741
BIO SHIELD CONCRETE	21,024,900	0	1,468,000	0	0	22,492,900
REACTOR CAVITY LINER	423,392	0	7,340	0	0	430,732
REACTOR COOLANT PUMPS	7,370,352	0	57,002	0	0	7,427,354
PRESSURIZER	3,344,835	0	3,721	0	0	3,348,556
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	308,754	0	8,654	0	0	317,408
PRESSURIZER RELIEF TANK	926,262	0	2,965	0	0	929,227
SAFETY INJECTION ACCUM TANKS	3,299,292	0	59,777	0	0	3,359,069
STEAM GENERATORS	26,972,352	0	3,229,600	0	0	30,201,952
REACTOR COOLANT PIPING	2,937,282	0	218,732	0	0	3,156,014
REMAINING CONTAM. MATLS	51,925,060	0	164,262	0	0	52,089,321
CONTAMINATED MATRL OTHR BLD	399,461,223	0	135,240	0	0	399,596,462
FILTER CARTRIDGES	529,254	668,364	1,761,600	0	63,510	3,022,728
SPENT RESINS	1,940,760	2,227,880	5,872,000	0	931,565	10,972,205
COMBUSTIBLE WASTES – CLASS A	5,383,898	0	170,655	0	0	5,554,553
COMBUSTIBLE WASTES – CLASS B	2,911,140	6,683,640	385,350	0	232,891	10,213,021
EVAPORATOR BOTTOMS	9,121,572	10,471,036	10,132,870	0	1,245,968	30,971,446
POST-TMI-2 ADDITIONS	18,295,818	0	0	0	0	18,295,818
SUBTOTAL PWR COSTS	**573,207,925**	**38,542,324**	**72,657,588**	**0**	**8,638,581**	**693,046,418**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE						3,883,494
TOTAL PWR COSTS (NSIDE COMPACT)						**696,929,912**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-12 BWR Burial Costs at the South Carolina Site (2022 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	DISPOSAL COST
STEAM SEPARATOR	359,251	3,119,032	4,110,400	0	172,440	7,761,123
FUEL SUPPORT & PIECES	158,098	1,559,516	513,800	0	75,887	2,307,301
CONTROL RODS/INCORES	470,888	891,152	2,348,800	0	226,026	3,936,867
CONTROL RODS GUIDES	132,356	1,336,728	73,400	0	48,972	1,591,455
JET PUMPS	381,623	4,455,760	5,872,000	0	183,179	10,892,563
TOP FUEL GUIDES	654,211	8,020,368	21,139,200	0	314,021	30,127,801
CORE SUPPORT PLATE	439,749	3,453,214	477,100	0	162,707	4,532,771
CORE SHROUD[a]	1,281,164	15,595,160	41,104,000	0	614,959	58,595,283
REACTOR VESSEL WALL	278,855	2,450,668	1,585,440	0	103,176	4,418,140
SAC SHIELD Neutron-Activated Matl	5,877,242	0	124,780	0	0	6,002,022
REACT. WATER REC	2,542,985	0	32,260	0	0	2,575,245
SAC SHIELD Contaminated Matl	15,220,327	0	113,644	0	0	15,333,972
OTHER PRIMARY CONTAINMENT	106,754,263	0	1,296,280	0	0	108,050,543
CONTAINM. ATMOSPHERIC	1,308,423	0	17,597	0	0	1,326,019
HIGH PRESSURE CORE SPRAY	661,764	0	6,232	0	0	667,996
LOW PRESSURE CORE SPRAY	293,444	0	3,666	0	0	297,110
REACTOR BLDG CLOSED COOLING	1,028,592	0	11,731	0	0	1,040,323
REACTOR CORE ISO COOLING	354,365	0	4,766	0	0	359,130
RESIDUAL HEAT REMOVAL	1,955,102	0	22,729	0	0	1,977,831
POOL LINER & RACKS	13,110,770	0	139,673	0	0	13,250,442
CONTAMINATED CONCRETE	14,459,253	0	159,102	0	0	14,618,355
OTHER REACTOR BUILDING	38,680,251	0	520,198	0	0	39,200,450
TURBINE	48,502,232	0	515,433	0	0	49,017,664
NUCLEAR STEAM CONDENSATE	9,894,948	0	133,074	0	0	10,028,022
LOW PRESSURE FEEDWATER HEATERS	21,526,989	0	270,181	0	0	21,797,170
MAIN STEAM	1,935,376	0	26,028	0	0	1,961,404
MOISTURE SEPARATOR REHEATERS	19,490,049	0	262,115	0	0	19,752,165
REACTOR FEEDWATER PUMPS	5,288,209	0	71,119	0	0	5,359,329
HIGH PRESSURE FEEDWATER HEATERS	3,493,275	0	44,358	0	0	3,537,633
OTHER TG BLDG	132,396,040	0	1,780,552	0	0	134,176,592
RAD WASTE BLDG	65,557,438	0	881,661	0	0	66,439,099
REACTOR BLDG – CLASS A	5,638,485	0	180,748	0	0	5,819,232
REACTOR BLDG – CLASS B	14,112,295	7,129,216	406,453	0	1,128,984	22,776,947
TG BLDG – CLASS A	3,806,693	0	122,028	0	0	3,928,720
TG BLDG – CLASS B	9,261,193	4,678,548	274,333	0	740,895	14,954,969
RAD WASTE & CONTROL – CLASS A	3,285,777	0	105,329	0	0	3,391,106
RAD WASTE & CONTROL – CLASS B	8,379,175	4,232,972	236,715	0	670,334	13,519,196
CONCENTRATOR BOTTOMS – CLASS A	28,820,740	19,271,162	1,065,768	0	5,077,781	54,235,451
CONCENTRATOR BOTTOMS – CLASS B	8,662,881	5,792,488	15,267,200	0	1,526,270	31,248,839
OTHER	10,162,226	6,795,034	241,486	0	253,223	17,451,969
POST-TMI-2 ADDITIONS	1,495,231	0	0	0	0	1,495,231
SUBTOTAL BWR COSTS	**608,112,229**	**88,781,018**	**101,561,378**	**0**	**11,298,855**	**809,753,480**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE						4,020,364
TOTAL BWR COSTS (INSIDE COMPACT)						**813,773,844**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-13 PWR Burial Costs at the Washington Site (2024 dollars)

REFERENCE PWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	DISPOSAL COST
VESSEL WALL	598,274	519,854	425,434	1,060,358	2,603,920
VESSEL HEAD & BOTTOM	629,762	547,214	447,826	2,608	1,627,410
UPPER CORE SUPPORT ASSM	62,976	54,721	44,783	74,112	236,592
UPPER SUPPORT COLUMN	62,976	54,721	44,783	74,112	236,592
UPPER CORE BARREL	31,488	27,361	22,391	55,808	137,048
UPPER CORE GRID PLATE	78,720	68,402	55,978	139,521	342,621
GUIDE TUBES	94,464	82,082	67,174	111,167	354,888
LOWER CORE BARREL[(a)]	503,809	437,772	358,260	892,933	2,192,774
THERMAL SHIELDS[(a)]	94,464	82,082	67,174	167,425	411,145
CORE SHROUD[(a)]	62,976	54,721	44,783	111,617	274,097
LOWER GRID PLATE[(a)]	78,720	68,402	55,978	139,521	342,621
LOWER SUPPORT COLUMN	15,744	13,680	11,196	27,904	68,524
LOWER CORE FORGING	173,184	150,484	123,152	306,946	753,766
MISC INTERNALS	125,952	109,443	89,565	223,233	548,194
BIO SHIELD CONCRETE	3,929,712	670,338	2,183,150	12,716	6,795,916
REACTOR CAVITY LINER	80,609	13,680	44,783	261	139,333
REACTOR COOLANT PUMPS	661,250	164,164	89,565	522	915,501
PRESSURIZER	566,785	109,443	89,565	522	766,315
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	62,976	13,680	33,587	196	110,439
PRESSURIZER RELIEF TANK	188,928	27,361	22,391	130	238,811
SAFETY INJECTION ACCUM TANKS	629,762	109,443	89,565	522	829,291
STEAM GENERATORS	3,363,242	437,772	358,260	2,087	4,161,361
REACTOR COOLANT PIPING	519,553	95,763	78,369	456	694,142
REMAINING CONTAM. MATLS	8,282,625	1,381,716	4,601,408	26,802	14,292,551
CONTAMINATED MATRL OTHR BLD	75,116,547	10,889,567	41,524,629	241,871	127,772,613
FILTER CARTRIDGES	49,594	82,082	470,217	778,171	1,380,064
SPENT RESINS	314,881	273,607	223,913	558,083	1,370,484
COMBUSTIBLE WASTES – CLASS A	1,098,147	410,411	10,411,945	60,647	11,981,150
COMBUSTIBLE WASTES – CLASS B	495,937	410,411	4,702,169	1,081,624	6,690,141
EVAPORATOR BOTTOMS	1,479,940	1,285,954	1,052,390	1,081,624	4,899,908
POST-TMI-2 ADDITIONS	2,449,156	136,804	1,354,672	7,891	3,948,522
HEAVY OBJECT SURCHARGE					243,872
SITE AVAILABILITY CHARGES					883,505
OPERATING MARGIN					9,064,312
SUBTOTAL PWR COSTS	**101,903,154**	**18,783,134**	**69,189,055**	**7,241,389**	**207,308,422**
TAXES & FEES (% OF CHARGES)					8,914,262
TAXES & FEES ($/UNIT VOL.)					22,099,781
ANNUAL PERMIT FEES (3 YRS)					212,000
TOTAL PWR COSTS					**238,534,465**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-14 BWR Burial Costs at the Washington Site (2024 dollars)

REFERENCE BWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	DISPOSAL COST
STEAM SEPARATOR	55,599	191,525	313,478	1,081,624	1,642,226
FUEL SUPPORT & PIECES	27,800	95,763	156,739	390,658	670,959
CONTROL RODS/INCORES	83,399	109,443	89,565	1,081,624	1,364,031
CONTROL RODS GUIDES	22,240	82,082	134,348	334,850	573,520
JET PUMPS	77,839	273,607	447,826	1,081,624	1,880,896
TOP FUEL GUIDES	133,439	984,986	806,086	1,081,624	3,006,134
CORE SUPPORT PLATE	61,159	218,886	347,065	865,029	1,492,139
CORE SHROUD[a]	261,317	1,915,250	1,567,390	1,081,624	4,825,581
REACTOR VESSEL WALL	44,480	273,607	246,304	613,892	1,178,282
SAC SHIELD NEUTRON-ACTIVATED MATL	500,395	191,525	156,739	913	849,572
REACT. WATER REC	489,275	68,402	67,174	391	625,242
SAC SHIELD CONTAMINATED MATERIAL	1,723,583	519,854	425,434	2,478	2,671,349
OTHER PRIMARY CONTAINMENT	19,659,965	2,325,661	10,859,771	63,256	32,908,652
CONTAINM. ATMOSPHERIC	266,877	13,680	22,391	130	303,079
HIGH PRESSURE CORE SPRAY	94,519	27,361	22,391	130	144,401
LOW PRESSURE CORE SPRAY	55,599	13,680	11,196	65	80,541
REACTOR BLDG CLOSED COOLING	177,918	27,361	67,174	391	272,844
REACTOR CORE ISO COOLING	72,279	13,680	33,587	196	119,742
RESIDUAL HEAT REMOVAL	344,717	68,402	78,369	456	491,944
POOL LINER & RACKS	2,118,339	246,246	414,239	2,413	2,781,237
CONTAMINATED CONCRETE	2,413,016	383,050	1,209,129	7,043	4,012,238
OTHER REACTOR BUILDING	7,889,562	629,297	4,366,300	25,433	12,910,590
TURBINE	7,817,282	1,121,790	3,112,388	18,129	12,069,589
NUCLEAR STEAM CONDENSATE	2,018,260	177,845	492,608	2,869	2,691,582
LOW PRESSURE FEEDWATER HEATERS	4,097,679	574,575	492,608	2,869	5,167,732
MAIN STEAM	394,756	27,361	33,587	196	455,899
MOISTURE SEPARATOR REHEATERS	3,975,360	355,689	291,087	1,696	4,623,832
REACTOR FEEDWATER PUMPS	1,078,629	82,082	223,913	1,304	1,385,928
HIGH PRESSURE FEEDWATER HEATERS	672,753	109,443	89,565	522	872,283
OTHER TG BLDG	27,004,652	3,255,926	14,375,202	83,732	44,719,511
RAD WASTE BLDG	13,371,667	984,986	7,187,601	41,866	21,586,120
REACTOR BLDG – CLASS A	1,150,075	82,082	11,027,705	64,234	12,324,096
REACTOR BLDG – CLASS B	517,242	437,772	4,959,669	1,081,624	6,996,305
TG BLDG – CLASS A	776,446	54,721	7,445,101	43,366	8,319,634
TG BLDG – CLASS B	349,109	287,288	3,347,496	1,081,624	5,065,517
RAD WASTE & CONTROL – CLASS A	670,196	54,721	6,426,297	37,432	7,188,646
RAD WASTE & CONTROL – CLASS B	301,238	259,927	2,888,475	1,081,624	4,531,264
CONCENTRATOR BOTTOMS – CLASS A	2,735,493	2,366,702	1,936,846	802,042	7,841,083
CONCENTRATOR BOTTOMS – CLASS B	822,872	711,379	582,173	1,081,624	3,198,048
OTHER	967,430	834,502	682,934	3,978	2,488,844
POST-TMI-2 ADDITIONS	200,158	13,680	156,739	913	371,490
HEAVY OBJECT SURCHARGE					353,090
SITE AVAILABILITY CHARGES					883,505
OPERATING MARGIN					9,064,312
SUBTOTAL BWR COSTS	**105,494,614**	**20,465,819**	**87,594,687**	**13,147,486**	**237,003,513**
TAXES & FEES (% OF CHARGES)					10,191,151
TAXES & FEES ($/UNIT VOL.)					22,949,577
ANNUAL PERMIT FEES (3 YRS)					212,000
TOTAL BWR COSTS					**270,356,241**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-15 PWR Burial Costs at the Washington Site (2022 dollars)

REFERENCE PWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	DISPOSAL COST
VESSEL WALL	396,863	416,547	332,306	781,880	1,927,596
VESSEL HEAD & BOTTOM	417,750	438,470	349,796	1,932	1,207,948
UPPER CORE SUPPORT ASSM	41,775	43,847	34,980	54,946	175,548
UPPER SUPPORT COLUMN	41,775	43,847	34,980	54,946	175,548
UPPER CORE BARREL	20,888	21,924	17,490	41,152	101,452
UPPER CORE GRID PLATE	52,219	54,809	43,725	102,879	253,631
GUIDE TUBES	62,663	65,771	52,469	82,419	263,322
LOWER CORE BARREL[(a)]	334,200	350,776	279,837	658,426	1,623,239
THERMAL SHIELDS[(a)]	62,663	65,771	52,469	123,455	304,357
CORE SHROUD[(a)]	41,775	43,847	34,980	82,303	202,905
LOWER GRID PLATE[(a)]	52,219	54,809	43,725	102,879	253,631
LOWER SUPPORT COLUMN	10,444	10,962	8,745	20,576	50,726
LOWER CORE FORGING	114,881	120,579	96,194	226,334	557,988
MISC INTERNALS	83,550	87,694	69,959	164,606	405,810
BIO SHIELD CONCRETE	2,606,760	537,126	1,705,256	9,419	4,858,560
REACTOR CAVITY LINER	53,472	10,962	34,980	193	99,607
REACTOR COOLANT PUMPS	438,638	131,541	69,959	386	640,524
PRESSURIZER	375,975	87,694	69,959	386	534,015
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	41,775	10,962	26,235	145	79,116
PRESSURIZER RELIEF TANK	125,325	21,924	17,490	97	164,835
SAFETY INJECTION ACCUM TANKS	417,750	87,694	69,959	386	575,790
STEAM GENERATORS	2,230,994	350,776	279,837	1,546	2,863,153
REACTOR COOLANT PIPING	344,644	76,732	61,214	338	482,928
REMAINING CONTAM. MATLS	5,494,248	1,107,138	3,594,154	19,851	10,215,391
CONTAMINATED MATRL OTHR BLD	49,828,280	8,725,561	32,434,834	179,145	91,167,820
FILTER CARTRIDGES	32,898	65,771	367,286	576,934	1,042,888
SPENT RESINS	208,875	219,235	174,898	411,516	1,014,524
COMBUSTIBLE WASTES – CLASS A	728,452	328,853	8,132,757	44,919	9,234,980
COMBUSTIBLE WASTES – CLASS B	328,978	328,853	3,672,858	948,041	5,278,730
EVAPORATOR BOTTOMS	981,713	1,030,405	822,021	948,041	3,782,180
POST-TMI-2 ADDITIONS	1,624,638	109,618	1,058,133	5,844	2,798,233
HEAVY OBJECT SURCHARGE					229,873
SITE AVAILABILITY CHARGES					796,630
OPERATING MARGIN					7,944,852
SUBTOTAL PWR COSTS	**67,597,076**	**15,050,496**	**54,043,482**	**5,645,920**	**151,308,329**
TAXES & FEES (% OF CHARGES)					6,506,258
TAXES & FEES ($/UNIT VOL.)					22,099,781
ANNUAL PERMIT FEES (3 YRS)					212,000
TOTAL PWR COSTS					**180,126,369**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-16 BWR Burial Costs at the Washington Site (2022 dollars)

REFERENCE BWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	DISPOSAL COST
STEAM SEPARATOR	36,882	153,465	244,857	911,914	1,383,245
FUEL SUPPORT & PIECES	18,441	76,732	122,429	371,234	505,663
CONTROL RODS/INCORES	55,323	87,694	69,959	911,914	1,161,017
CONTROL RODS GUIDES	14,753	65,771	104,939	318,200	432,372
JET PUMPS	51,634	219,235	349,796	911,914	1,568,707
TOP FUEL GUIDES	88,516	789,247	629,633	911,914	2,455,437
CORE SUPPORT PLATE	40,570	175,388	271,092	822,018	1,124,900
CORE SHROUD[a]	173,344	1,534,646	1,224,286	911,914	3,880,317
REACTOR VESSEL WALL	29,505	219,235	192,388	583,367	893,796
SAC SHIELD NEUTRON-ACTIVATED MATL	331,935	153,465	122,429	872	608,505
REACT. WATER REC	324,559	54,809	52,469	374	432,127
SAC SHIELD CONTAMINATED MATERIAL	1,143,332	416,547	332,306	2,368	1,894,021
OTHER PRIMARY CONTAINMENT	13,041,364	1,863,499	8,482,553	60,438	23,434,267
CONTAINM. ATMOSPHERIC	177,032	10,962	17,490	125	205,580
HIGH PRESSURE CORE SPRAY	62,699	21,924	17,490	125	102,209
LOW PRESSURE CORE SPRAY	36,882	10,962	8,745	62	56,637
REACTOR BLDG CLOSED COOLING	118,021	21,924	52,469	374	192,704
REACTOR CORE ISO COOLING	47,946	10,962	26,235	187	85,288
RESIDUAL HEAT REMOVAL	228,666	54,809	61,214	436	345,028
POOL LINER & RACKS	1,405,192	197,312	323,561	2,305	1,927,852
CONTAMINATED CONCRETE	1,600,665	306,929	944,449	6,729	2,857,260
OTHER REACTOR BUILDING	5,233,511	504,241	3,410,511	24,300	9,167,100
TURBINE	5,185,565	898,864	2,431,082	17,321	8,528,939
NUCLEAR STEAM CONDENSATE	1,338,805	142,503	384,776	2,742	1,868,209
LOW PRESSURE FEEDWATER HEATERS	2,718,180	460,394	384,776	2,742	3,565,475
MAIN STEAM	261,860	21,924	26,235	187	310,163
MOISTURE SEPARATOR REHEATERS	2,637,041	285,006	227,367	1,620	3,150,669
REACTOR FEEDWATER PUMPS	715,505	65,771	174,898	1,246	957,139
HIGH PRESSURE FEEDWATER HEATERS	446,268	87,694	69,959	498	604,308
OTHER TG BLDG	17,913,435	2,608,899	11,228,452	80,002	31,812,802
RAD WASTE BLDG	8,870,045	789,247	5,614,226	40,001	15,304,526
REACTOR BLDG – CLASS A	762,898	65,771	8,613,727	61,372	9,489,970
REACTOR BLDG – CLASS B	343,110	350,776	3,873,991	911,914	5,515,918
TG BLDG – CLASS A	515,053	43,847	5,815,359	41,434	6,406,378
TG BLDG – CLASS B	231,580	230,197	2,614,725	911,914	4,024,543
RAD WASTE & CONTROL – CLASS A	444,572	43,847	5,019,573	35,764	5,535,716
RAD WASTE & CONTROL – CLASS B	199,825	208,273	2,256,184	911,914	3,550,288
CONCENTRATOR BOTTOMS – CLASS A	1,814,579	1,896,384	1,512,868	766,403	5,817,936
CONCENTRATOR BOTTOMS – CLASS B	545,849	570,012	454,735	911,914	2,518,636
OTHER	641,741	668,667	533,439	3,801	1,846,794
POST-TMI-2 ADDITIONS	132,774	10,962	122,429	872	266,841
HEAVY OBJECT SURCHARGE					332,821
SITE AVAILABILITY CHARGES					796,630
OPERATING MARGIN					7,944,852
SUBTOTAL BWR COSTS	**69,979,457**	**16,398,793**	**68,420,098**	**10,990,933**	**174,863,584**
TAXES & FEES (% OF CHARGES)					7,519,134
TAXES & FEES ($/UNIT VOL.)					22,949,577
ANNUAL PERMIT FEES (3 YRS)					212,000
TOTAL BWR COSTS					**205,544,294**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-17 PWR LLW Disposition Costs Using a Combination of Non-Compact Facility and the Texas Disposal Facility (2024 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	0	827,640	827,640
VESSEL HEAD & BOTTOM	0	0	0	0	0	0	1,839,200	1,839,200
UPPER CORE SUPPORT ASSM	0	0	0	0	0	0	87,120	87,120
UPPER SUPPORT COLUMN	0	0	0	0	0	0	87,120	87,120
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	0	1,975,000
GUIDE TUBES	0	0	0	0	0	0	130,680	130,680
LOWER CORE BARREL[(a)]	3,200,000	2,400,000	0	0	7,040,000	0	0	12,640,000
THERMAL SHIELDS[(a)]	600,000	450,000	0	0	1,320,000	0	0	2,370,000
CORE SHROUD[(a)]	400,000	300,000	0	0	13,420,000	0	0	14,120,000
LOWER GRID PLATE[(a)]	500,000	375,000	0	0	2,200,000	0	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	0	1,500,000
BIO SHIELD CONCRETE	0	0	0	0	0	0	5,436,288	5,436,288
REACTOR CAVITY LINER	0	0	0	0	0	0	111,514	111,514
REACTOR COOLANT PUMPS	0	0	0	0	0	0	1,931,160	1,931,160
PRESSURIZER	0	0	0	0	0	0	1,655,280	1,655,280
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	0	87,120	87,120
PRESSURIZER RELIEF TANK	0	0	0	0	0	0	261,360	261,360
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	0	871,200	871,200
STEAM GENERATORS	0	0	0	0	0	0	9,822,248	9,822,248
REACTOR COOLANT PIPING	0	0	0	0	0	0	718,740	718,740
REMAINING CONTAM. MATLS	0	0	0	0	0	0	11,458,022	11,458,022
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	0	103,914,776	103,914,776
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	0	4,100,000
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	0	0	5,263,335	5,263,335
COMBUSTIBLE WASTES – CLASS B	3,150,000	0	0	0	26,250	0	0	3,176,250
EVAPORATOR BOTTOMS	0	0	0	0	0	0	2,243,253	2,243,253
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	3,388,115	3,388,115
TOTAL PWR COSTS	**12,865,000**	**5,550,000**	**0**	**0**	**27,951,250**	**0**	**150,134,170**	**196,500,420**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-18 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Texas Disposal Facility (2024 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,018	0	0	1,883,164
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,001	0	0	736,574
CONTROL RODS/INCORES	529,719	600,000	0	0	1,760,350	211,888	0	3,101,956
CONTROL RODS GUIDES	0	0	0	0	0	0	30,766	30,766
JET PUMPS	494,404	1,500,000	0	0	1,000,037	197,762	0	3,192,203
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,505,056	339,020	0	8,091,626
CORE SUPPORT PLATE	0	0	0	0	0	0	84,607	84,607
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,811,655	663,914	0	43,635,356
REACTOR VESSEL WALL	0	0	0	0	0	0	61,532	61,532
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	0	692,237	692,237
REACT. WATER REC	0	0	0	0	0	0	676,854	676,854
SAC SHIELD Contaminated Matl	0	0	0	0	0	0	2,384,371	2,384,371
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	0	27,197,214	27,197,214
CONTAINM. ATMOSPHERIC	0	0	0	0	0	0	369,193	369,193
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	0	130,756	130,756
LOW PRESSURE CORE SPRAY	0	0	0	0	0	0	76,915	76,915
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	0	246,129	246,129
REACTOR CORE ISO COOLING	0	0	0	0	0	0	99,990	99,990
RESIDUAL HEAT REMOVAL	0	0	0	0	0	0	476,874	476,874
POOL LINER & RACKS	0	0	0	0	0	0	2,930,469	2,930,469
CONTAMINATED CONCRETE	0	0	0	0	0	0	3,338,120	3,338,120
OTHER REACTOR BUILDING	0	0	0	0	0	0	10,914,267	10,914,267
TURBINE	0	0	0	0	0	0	22,830,140	22,830,140
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	0	2,792,022	2,792,022
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	5,668,650	5,668,650
MAIN STEAM	0	0	0	0	0	0	546,098	546,098
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	0	5,499,437	5,499,437
REACTOR FEEDWATER PUMPS	0	0	0	0	0	0	3,150,105	3,150,105
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	930,674	930,674
OTHER TG BLDG	0	0	0	0	0	0	37,357,712	37,357,712
RAD WASTE BLDG	0	0	0	0	0	0	18,498,105	18,498,105
REACTOR BLDG – CLASS A	0	0	0	0	0	0	5,512,221	5,512,221
REACTOR BLDG – CLASS B	3,285,317	0	0	0	27,688	0	0	3,313,005
TG BLDG – CLASS A	0	0	0	0	0	0	3,721,449	3,721,449
TG BLDG – CLASS B	2,217,404	0	0	0	18,688	0	0	2,236,091
RAD WASTE & CONTROL – CLASS A	0	0	0	0	0	0	3,212,198	3,212,198
RAD WASTE & CONTROL – CLASS B	1,913,345	0	0	0	16,125	0	0	1,929,470
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	0	0	554,256	554,256
CONCENTRATOR BOTTOMS – CLASS B	5,226,561	0	0	0	1,560,000	0	0	6,786,561
OTHER	0	0	0	0	0	0	1,338,324	1,338,324
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	276,895	276,895
TOTAL BWR COSTS	**16,703,806**	**19,575,000**	**0**	**0**	**37,214,616**	**1,412,584**	**161,598,578**	**236,504,584**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-19 PWR LLW Disposition Costs Using a Combination of Non-Compact Facility and the South Carolina Disposal Facility (2024 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	827,640	827,640
VESSEL HEAD & BOTTOM	0	0	0	0	0	1,839,200	1,839,200
UPPER CORE SUPPORT ASSM	0	0	0	0	0	87,120	87,120
UPPER SUPPORT COLUMN	0	0	0	0	0	87,120	87,120
UPPER CORE BARREL	156,204	225,428	594,000	0	74,978	0	1,050,610
UPPER CORE GRID PLATE	390,510	563,570	1,485,000	0	187,445	0	2,626,525
GUIDE TUBES	0	0	0	0	0	130,680	130,680
LOWER CORE BARREL[(a)]	2,499,264	3,606,848	9,504,000	0	1,199,647	0	16,809,759
THERMAL SHIELDS[(a)]	468,612	676,284	1,782,000	0	224,934	0	3,151,830
CORE SHROUD[(a)]	362,788	450,856	18,117,000	0	174,138	0	19,104,782
LOWER GRID PLATE[(a)]	390,510	563,570	2,970,000	0	187,445	0	4,111,525
LOWER SUPPORT COLUMN	99,064	112,714	297,000	0	47,551	0	556,328
LOWER CORE FORGING	1,076,315	1,239,854	1,857,500	0	516,631	0	4,690,300
MISC INTERNALS	872,800	901,712	1,486,000	0	418,944	0	3,679,456
BIO SHIELD CONCRETE	0	0	0	0	0	5,436,288	5,436,288
REACTOR CAVITY LINER	0	0	0	0	0	111,514	111,514
REACTOR COOLANT PUMPS	0	0	0	0	0	1,931,160	1,931,160
PRESSURIZER	0	0	0	0	0	1,655,280	1,655,280
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	87,120	87,120
PRESSURIZER RELIEF TANK	0	0	0	0	0	261,360	261,360
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	871,200	871,200
STEAM GENERATORS	0	0	0	0	0	9,822,248	9,822,248
REACTOR COOLANT PIPING	0	0	0	0	0	718,740	718,740
REMAINING CONTAM. MATLS	0	0	0	0	0	11,458,022	11,458,022
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	103,914,776	103,914,776
FILTER CARTRIDGES	535,518	676,284	1,782,000	0	64,262	0	3,058,064
SPENT RESINS	1,963,800	2,254,280	5,940,000	0	942,624	0	11,100,704
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	0	5,263,335	5,263,335
COMBUSTIBLE WASTES – CLASS B	2,945,700	6,762,840	390,075	0	235,656	0	10,334,271
EVAPORATOR BOTTOMS	0	0	0	0	0	2,243,253	2,243,253
POST-TMI-2 ADDITIONS	0	0	0	0	0	3,388,115	3,388,115
SUBTOTAL PWR COSTS	**11,761,084**	**18,034,240**	**46,204,575**	**0**	**4,274,254**	**150,134,170**	**230,408,323**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE							77,190
TOTAL PWR COSTS (INSIDE COMPACT)							**230,485,513**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-20 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the South Carolina Disposal Facility (2024 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	363,503	3,155,992	4,158,000	0	174,481	0	7,851,976
FUEL SUPPORT & PIECES	159,962	1,577,996	520,100	0	76,782	0	2,334,840
CONTROL RODS/INCORES	476,479	901,712	2,376,000	0	228,710	0	3,982,900
CONTROL RODS GUIDES	0	0	0	0	0	30,766	30,766
JET PUMPS	386,140	4,508,560	5,940,000	0	185,347	0	11,020,047
TOP FUEL GUIDES	661,954	8,115,408	21,384,000	0	317,738	0	30,479,100
CORE SUPPORT PLATE	0	0	0	0	0	84,607	84,607
CORE SHROUD[a]	1,296,326	15,779,960	41,580,000	0	622,237	0	59,278,523
REACTOR VESSEL WALL	0	0	0	0	0	61,532	61,532
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	692,237	692,237
REACT. WATER REC	0	0	0	0	0	676,854	676,854
SAC SHIELD Contaminated Matl	0	0	0	0	0	2,384,371	2,384,371
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	27,197,214	27,197,214
CONTAINM. ATMOSPHERIC	0	0	0	0	0	369,193	369,193
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	130,756	130,756
LOW PRESSURE CORE SPRAY	0	0	0	0	0	76,915	76,915
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	246,129	246,129
REACTOR CORE ISO COOLING	0	0	0	0	0	99,990	99,990
RESIDUAL HEAT REMOVAL	0	0	0	0	0	476,874	476,874
POOL LINER & RACKS	0	0	0	0	0	2,930,469	2,930,469
CONTAMINATED CONCRETE	0	0	0	0	0	3,338,120	3,338,120
OTHER REACTOR BUILDING	0	0	0	0	0	10,914,267	10,914,267
TURBINE	0	0	0	0	0	22,830,140	22,830,140
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	2,792,022	2,792,022
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	5,668,650	5,668,650
MAIN STEAM	0	0	0	0	0	546,098	546,098
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	5,499,437	5,499,437
REACTOR FEEDWATER PUMPS	0	0	0	0	0	3,150,105	3,150,105
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	930,674	930,674
OTHER TG BLDG	0	0	0	0	0	37,357,712	37,357,712
RAD WASTE BLDG	0	0	0	0	0	18,498,105	18,498,105
REACTOR BLDG – CLASS A	0	0	0	0	0	5,512,221	5,512,221
REACTOR BLDG – CLASS B	14,279,321	7,213,696	411,436	0	1,142,346	0	23,046,799
TG BLDG – CLASS A	0	0	0	0	0	3,721,449	3,721,449
TG BLDG – CLASS B	9,370,804	4,733,988	277,696	0	749,664	0	15,132,153
RAD WASTE & CONTROL – CLASS A	0	0	0	0	0	3,212,198	3,212,198
RAD WASTE & CONTROL – CLASS B	8,478,347	4,283,132	239,618	0	678,268	0	13,679,364
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	0	554,256	554,256
CONCENTRATOR BOTTOMS – CLASS B	8,765,411	5,861,128	15,444,000	0	1,544,334	0	31,614,873
OTHER	0	0	0	0	0	1,338,324	1,338,324
POST-TMI-2 ADDITIONS	0	0	0	0	0	276,895	276,895
SUBTOTAL BWR COSTS	**44,238,246**	**56,131,572**	**92,330,850**	**0**	**5,719,906**	**161,598,578**	**360,019,152**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE							100,223
TOTAL BWR COSTS (INSIDE COMPACT)							**360,119,375**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-21 PWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Washington Disposal Facility (2024 dollars)

REFERENCE PWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	WASTE VENDOR CHARGE	DISPOSAL COST
VESSEL WALL	0	0	0	0	827,640	827,640
VESSEL HEAD & BOTTOM	0	0	0	0	1,839,200	1,839,200
UPPER CORE SUPPORT ASSM	0	0	0	0	87,120	87,120
UPPER SUPPORT COLUMN	0	0	0	0	87,120	87,120
UPPER CORE BARREL	31,488	27,361	22,391	55,808	0	137,048
UPPER CORE GRID PLATE	78,720	68,402	55,978	139,521	0	342,621
GUIDE TUBES	0	0	0	0	130,680	130,680
LOWER CORE BARREL[(a)]	503,809	437,772	358,260	892,933	0	2,192,774
THERMAL SHIELDS[(a)]	94,464	82,082	67,174	167,425	0	411,145
CORE SHROUD[(a)]	62,976	54,721	44,783	111,617	0	274,097
LOWER GRID PLATE[(a)]	78,720	68,402	55,978	139,521	0	342,621
LOWER SUPPORT COLUMN	15,744	13,680	11,196	27,904	0	68,524
LOWER CORE FORGING	173,184	150,484	123,152	306,946	0	753,766
MISC INTERNALS	125,952	109,443	89,565	223,233	0	548,194
BIO SHIELD CONCRETE	0	0	0	0	5,436,288	5,436,288
REACTOR CAVITY LINER	0	0	0	0	111,514	111,514
REACTOR COOLANT PUMPS	0	0	0	0	1,931,160	1,931,160
PRESSURIZER	0	0	0	0	1,655,280	1,655,280
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	87,120	87,120
PRESSURIZER RELIEF TANK	0	0	0	0	261,360	261,360
SAFETY INJECTION ACCUM TANKS	0	0	0	0	871,200	871,200
STEAM GENERATORS	0	0	0	0	9,822,248	9,822,248
REACTOR COOLANT PIPING	0	0	0	0	718,740	718,740
REMAINING CONTAM. MATLS	0	0	0	0	11,458,022	11,458,022
CONTAMINATED MATRL OTHR BLD	0	0	0	0	103,914,776	103,914,776
FILTER CARTRIDGES	49,594	82,082	470,217	778,171	0	1,380,064
SPENT RESINS	314,881	273,607	223,913	558,083	0	1,370,484
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	5,263,335	5,263,335
COMBUSTIBLE WASTES – CLASS B	495,937	410,411	4,702,169	1,081,624	0	6,690,141
EVAPORATOR BOTTOMS	0	0	0	0	2,243,253	2,243,253
POST-TMI-2 ADDITIONS	0	0	0	0	3,388,115	3,388,115
HEAVY OBJECT SURCHARGE						0
SITE AVAILABILITY CHARGES						883,505
OPERATING MARGIN						3,453,732
SUBTOTAL PWR COSTS	**2,025,471**	**1,778,447**	**6,224,776**	**4,482,786**	**150,134,170**	**168,982,886**
TAXES & FEES (% OF CHARGES)						810,495
TAXES & FEES ($/UNIT VOL.)						372,126
ANNUAL PERMIT FEES (3 YRS)						212,000
TOTAL PWR COSTS						**170,377,507**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-22 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Washington Disposal Facility (2024 dollars)

REFERENCE BWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	VENDOR CHARGE	DISPOSAL COST
STEAM SEPARATOR	55,599	191,525	313,478	1,081,624	0	1,642,226
FUEL SUPPORT & PIECES	27,800	95,763	156,739	390,658	0	670,959
CONTROL RODS/INCORES	83,399	109,443	89,565	1,081,624	0	1,364,031
CONTROL RODS GUIDES	0	0	0	0	30,766	30,766
JET PUMPS	77,839	273,607	447,826	1,081,624	0	1,880,896
TOP FUEL GUIDES	133,439	984,986	806,086	1,081,624	0	3,006,134
CORE SUPPORT PLATE	0	0	0	0	84,607	84,607
CORE SHROUD[a]	261,317	1,915,250	1,567,390	1,081,624	0	4,825,581
REACTOR VESSEL WALL	0	0	0	0	61,532	61,532
SAC SHIELD Neutron-Activated Matl	0	0	0	0	692,237	692,237
REACT. WATER REC	0	0	0	0	676,854	676,854
SAC SHIELD Contaminated Matl	0	0	0	0	2,384,371	2,384,371
OTHER PRIMARY CONTAINMENT	0	0	0	0	27,197,214	27,197,214
CONTAINM. ATMOSPHERIC	0	0	0	0	369,193	369,193
HIGH PRESSURE CORE SPRAY	0	0	0	0	130,756	130,756
LOW PRESSURE CORE SPRAY	0	0	0	0	76,915	76,915
REACTOR BLDG CLOSED COOLING	0	0	0	0	246,129	246,129
REACTOR CORE ISO COOLING	0	0	0	0	99,990	99,990
RESIDUAL HEAT REMOVAL	0	0	0	0	476,874	476,874
POOL LINER & RACKS	0	0	0	0	2,930,469	2,930,469
CONTAMINATED CONCRETE	0	0	0	0	3,338,120	3,338,120
OTHER REACTOR BUILDING	0	0	0	0	10,914,267	10,914,267
TURBINE	0	0	0	0	22,830,140	22,830,140
NUCLEAR STEAM CONDENSATE	0	0	0	0	2,792,022	2,792,022
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	5,668,650	5,668,650
MAIN STEAM	0	0	0	0	546,098	546,098
MOISTURE SEPARATOR REHEATERS	0	0	0	0	5,499,437	5,499,437
REACTOR FEEDWATER PUMPS	0	0	0	0	3,150,105	3,150,105
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	930,674	930,674
OTHER TG BLDG	0	0	0	0	37,357,712	37,357,712
RAD WASTE BLDG	0	0	0	0	18,498,105	18,498,105
REACTOR BLDG – CLASS A	0	0	0	0	5,512,221	5,512,221
REACTOR BLDG – CLASS B	517,242	437,772	4,959,669	1,081,624	0	6,996,305
TG BLDG – CLASS A	0	0	0	0	3,721,449	3,721,449
TG BLDG – CLASS B	349,109	287,288	3,347,496	1,081,624	0	5,065,517
RAD WASTE & CONTROL – CLASS A	0	0	0	0	3,212,198	3,212,198
RAD WASTE & CONTROL – CLASS B	301,238	259,927	2,888,475	1,081,624	0	4,531,264
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	554,256	554,256
CONCENTRATOR BOTTOMS – CLASS B	822,872	711,379	582,173	1,081,624	0	3,198,048
OTHER	0	0	0	0	1,338,324	1,338,324
POST-TMI-2 ADDITIONS	0	0	0	0	276,895	276,895
HEAVY OBJECT SURCHARGE						0
SITE AVAILABILITY CHARGES						883,505
OPERATING MARGIN						7,897,069
SUBTOTAL BWR COSTS	**2,629,854**	**5,266,939**	**15,158,897**	**10,125,272**	**161,598,578**	**203,560,113**
TAXES & FEES (% OF CHARGES)						1,804,346
TAXES & FEES ($/UNIT VOL.)						572,105
ANNUAL PERMIT FEES (3 YRS)						212,000
TOTAL BWR COSTS						**206,148,564**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-23 PWR LLW Disposition Costs Using a Combination of Non-Compact Facility and the Texas Disposal Facility (2022 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	0	957,220	957,220
VESSEL HEAD & BOTTOM	0	0	0	0	0	0	2,129,600	2,129,600
UPPER CORE SUPPORT ASSM	0	0	0	0	0	0	100,760	100,760
UPPER SUPPORT COLUMN	0	0	0	0	0	0	100,760	100,760
UPPER CORE BARREL	200,000	150,000	0	0	50,000	0	0	400,000
UPPER CORE GRID PLATE	500,000	375,000	0	0	1,100,000	0	0	1,975,000
GUIDE TUBES	0	0	0	0	0	0	151,140	151,140
LOWER CORE BARREL[(a)]	3,200,000	2,400,000	0	0	7,040,000	0	0	12,640,000
THERMAL SHIELDS[(a)]	600,000	450,000	0	0	1,320,000	0	0	2,370,000
CORE SHROUD[(a)]	400,000	300,000	0	0	13,420,000	0	0	14,120,000
LOWER GRID PLATE[(a)]	500,000	375,000	0	0	2,200,000	0	0	3,075,000
LOWER SUPPORT COLUMN	100,000	75,000	0	0	220,000	0	0	395,000
LOWER CORE FORGING	1,100,000	825,000	0	0	125,000	0	0	2,050,000
MISC INTERNALS	800,000	600,000	0	0	100,000	0	0	1,500,000
BIO SHIELD CONCRETE	0	0	0	0	0	0	6,287,424	6,287,424
REACTOR CAVITY LINER	0	0	0	0	0	0	128,973	128,973
REACTOR COOLANT PUMPS	0	0	0	0	0	0	2,236,080	2,236,080
PRESSURIZER	0	0	0	0	0	0	1,916,640	1,916,640
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	0	100,760	100,760
PRESSURIZER RELIEF TANK	0	0	0	0	0	0	302,280	302,280
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	0	1,007,600	1,007,600
STEAM GENERATORS	0	0	0	0	0	0	11,373,129	11,373,129
REACTOR COOLANT PIPING	0	0	0	0	0	0	831,270	831,270
REMAINING CONTAM. MATLS	0	0	0	0	0	0	13,251,955	13,251,955
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	0	120,184,261	120,184,261
FILTER CARTRIDGES	315,000	0	0	0	250,000	0	0	565,000
SPENT RESINS	2,000,000	0	0	0	2,100,000	0	0	4,100,000
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	0	0	6,091,965	6,091,965
COMBUSTIBLE WASTES – CLASS B	3,150,000	0	0	0	26,250	0	0	3,176,250
EVAPORATOR BOTTOMS	0	0	0	0	0	0	2,552,667	2,552,667
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	3,918,577	3,918,577
TOTAL PWR COSTS	**12,865,000**	**5,550,000**	**0**	**0**	**27,951,250**	**0**	**173,623,060**	**219,989,310**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-24 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Texas Disposal Facility (2022 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	IRRADIATED HARDWARE HANDLE SURCHARGE	CASK HANDLE SURCHARGE	WEIGHT SURCHARGE	CURIE CHARGE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	353,146	1,050,000	0	0	480,150	0	0	1,883,296
FUEL SUPPORT & PIECES	176,573	525,000	0	0	35,009	0	0	736,582
CONTROL RODS/INCORES	529,719	600,000	0	0	1,762,100	211,888	0	3,103,707
CONTROL RODS GUIDES	0	0	0	0	0	0	35,583	35,583
JET PUMPS	494,404	1,500,000	0	0	1,000,644	197,762	0	3,192,810
TOP FUEL GUIDES	847,550	5,400,000	0	0	1,509,440	339,020	0	8,096,011
CORE SUPPORT PLATE	0	0	0	0	0	0	97,853	97,853
CORE SHROUD[a]	1,659,786	10,500,000	0	0	30,933,950	663,914	0	43,757,651
REACTOR VESSEL WALL	0	0	0	0	0	0	71,166	71,166
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	0	800,617	800,617
REACT. WATER REC	0	0	0	0	0	0	782,826	782,826
SAC SHIELD Contaminated Matl	0	0	0	0	0	0	2,757,682	2,757,682
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	0	31,455,364	31,455,364
CONTAINM. ATMOSPHERIC	0	0	0	0	0	0	426,996	426,996
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	0	151,228	151,228
LOW PRESSURE CORE SPRAY	0	0	0	0	0	0	88,957	88,957
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	0	284,664	284,664
REACTOR CORE ISO COOLING	0	0	0	0	0	0	115,645	115,645
RESIDUAL HEAT REMOVAL	0	0	0	0	0	0	551,536	551,536
POOL LINER & RACKS	0	0	0	0	0	0	3,389,280	3,389,280
CONTAMINATED CONCRETE	0	0	0	0	0	0	3,860,755	3,860,755
OTHER REACTOR BUILDING	0	0	0	0	0	0	12,623,066	12,623,066
TURBINE	0	0	0	0	0	0	26,434,899	26,434,899
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	0	3,229,156	3,229,156
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	6,556,166	6,556,166
MAIN STEAM	0	0	0	0	0	0	631,598	631,598
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	0	6,360,460	6,360,460
REACTOR FEEDWATER PUMPS	0	0	0	0	0	0	3,647,490	3,647,490
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	0	1,076,385	1,076,385
OTHER TG BLDG	0	0	0	0	0	0	43,206,647	43,206,647
RAD WASTE BLDG	0	0	0	0	0	0	21,394,273	21,394,273
REACTOR BLDG – CLASS A	0	0	0	0	0	0	1,840,085	1,840,085
REACTOR BLDG – CLASS B	3,285,317	0	0	0	27,688	0	0	3,313,005
TG BLDG – CLASS A	0	0	0	0	0	0	1,242,291	1,242,291
TG BLDG – CLASS B	2,217,404	0	0	0	18,688	0	0	2,236,091
RAD WASTE & CONTROL – CLASS A	0	0	0	0	0	0	1,072,293	1,072,293
RAD WASTE & CONTROL – CLASS B	1,913,345	0	0	0	16,125	0	0	1,929,470
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	0	0	630,705	630,705
CONCENTRATOR BOTTOMS – CLASS B	5,226,561	0	0	0	1,560,000	0	0	6,786,561
OTHER	0	0	0	0	0	0	1,547,860	1,547,860
POST-TMI-2 ADDITIONS	0	0	0	0	0	0	320,247	320,247
TOTAL BWR COSTS	**16,703,806**	**19,575,000**	**0**	**0**	**37,343,793**	**1,412,584**	**176,683,774**	**251,718,957**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-25 PWR LLW Disposition Costs Using a Combination of Non-Compact Facility and the South Carolina Disposal Facility (2022 dollars)

REFERENCE PWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
VESSEL WALL	0	0	0	0	0	957,220	957,220
VESSEL HEAD & BOTTOM	0	0	0	0	0	2,129,600	2,129,600
UPPER CORE SUPPORT ASSM	0	0	0	0	0	100,760	100,760
UPPER SUPPORT COLUMN	0	0	0	0	0	100,760	100,760
UPPER CORE BARREL	154,377	222,788	587,200	0	74,101	0	1,038,466
UPPER CORE GRID PLATE	385,943	556,970	1,468,000	0	185,252	0	2,596,165
GUIDE TUBES	0	0	0	0	0	151,140	151,140
LOWER CORE BARREL[(a)]	2,470,032	3,564,608	9,395,200	0	1,185,615	0	16,615,455
THERMAL SHIELDS[(a)]	463,131	668,364	1,761,600	0	222,303	0	3,115,398
CORE SHROUD[(a)]	358,560	445,576	17,909,600	0	172,109	0	18,885,845
LOWER GRID PLATE[(a)]	385,943	556,970	2,936,000	0	185,252	0	4,064,165
LOWER SUPPORT COLUMN	97,909	111,394	293,600	0	46,997	0	549,900
LOWER CORE FORGING	1,063,772	1,225,334	1,835,000	0	510,611	0	4,634,717
MISC INTERNALS	862,560	891,152	1,468,000	0	414,029	0	3,635,741
BIO SHIELD CONCRETE	0	0	0	0	0	6,287,424	6,287,424
REACTOR CAVITY LINER	0	0	0	0	0	128,973	128,973
REACTOR COOLANT PUMPS	0	0	0	0	0	2,236,080	2,236,080
PRESSURIZER	0	0	0	0	0	1,916,640	1,916,640
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	0	100,760	100,760
PRESSURIZER RELIEF TANK	0	0	0	0	0	302,280	302,280
SAFETY INJECTION ACCUM TANKS	0	0	0	0	0	1,007,600	1,007,600
STEAM GENERATORS	0	0	0	0	0	11,373,129	11,373,129
REACTOR COOLANT PIPING	0	0	0	0	0	831,270	831,270
REMAINING CONTAM. MATLS	0	0	0	0	0	13,251,955	13,251,955
CONTAMINATED MATRL OTHR BLD	0	0	0	0	0	120,184,261	120,184,261
FILTER CARTRIDGES	529,254	668,364	1,761,600	0	63,510	0	3,022,728
SPENT RESINS	1,940,760	2,227,880	5,872,000	0	931,565	0	10,972,205
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	0	6,091,965	6,091,965
COMBUSTIBLE WASTES – CLASS B	2,911,140	6,683,640	385,350	0	232,891	0	10,213,021
EVAPORATOR BOTTOMS	0	0	0	0	0	2,552,667	2,552,667
POST-TMI-2 ADDITIONS	0	0	0	0	0	3,918,577	3,918,577
SUBTOTAL PWR COSTS	**11,623,381**	**17,823,040**	**45,673,150**	**0**	**4,224,235**	**173,623,060**	**252,966,867**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE							77,190
OTAL PWR COSTS (INSIDE COMPACT)							**253,044,057**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-26 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the South Carolina Disposal Facility (2022 dollars)

REFERENCE BWR COMPONENT	BASE DISPOSAL CHARGE	CASK HANDLING	CURIE SURCHARGE	LINER DOSE RATE	DOSE RATE SURCHARGE	VENDOR CHARGES	DISPOSAL COST
STEAM SEPARATOR	359,251	3,119,032	4,110,400	0	172,440	0	7,761,123
FUEL SUPPORT & PIECES	158,098	1,559,516	513,800	0	75,887	0	2,307,301
CONTROL RODS/INCORES	470,888	891,152	2,348,800	0	226,026	0	3,936,867
CONTROL RODS GUIDES	0	0	0	0	0	35,583	35,583
JET PUMPS	381,623	4,455,760	5,872,000	0	183,179	0	10,892,563
TOP FUEL GUIDES	654,211	8,020,368	21,139,200	0	314,021	0	30,127,801
CORE SUPPORT PLATE	0	0	0	0	0	97,853	97,853
CORE SHROUD[a]	1,281,164	15,595,160	41,104,000	0	614,959	0	58,595,283
REACTOR VESSEL WALL	0	0	0	0	0	71,166	71,166
SAC SHIELD Neutron-Activated Matl	0	0	0	0	0	800,617	800,617
REACT. WATER REC	0	0	0	0	0	782,826	782,826
SAC SHIELD Contaminated Matl	0	0	0	0	0	2,757,682	2,757,682
OTHER PRIMARY CONTAINMENT	0	0	0	0	0	31,455,364	31,455,364
CONTAINM. ATMOSPHERIC	0	0	0	0	0	426,996	426,996
HIGH PRESSURE CORE SPRAY	0	0	0	0	0	151,228	151,228
LOW PRESSURE CORE SPRAY	0	0	0	0	0	88,957	88,957
REACTOR BLDG CLOSED COOLING	0	0	0	0	0	284,664	284,664
REACTOR CORE ISO COOLING	0	0	0	0	0	115,645	115,645
RESIDUAL HEAT REMOVAL	0	0	0	0	0	551,536	551,536
POOL LINER & RACKS	0	0	0	0	0	3,389,280	3,389,280
CONTAMINATED CONCRETE	0	0	0	0	0	3,860,755	3,860,755
OTHER REACTOR BUILDING	0	0	0	0	0	12,623,066	12,623,066
TURBINE	0	0	0	0	0	26,434,899	26,434,899
NUCLEAR STEAM CONDENSATE	0	0	0	0	0	3,229,156	3,229,156
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	0	6,556,166	6,556,166
MAIN STEAM	0	0	0	0	0	631,598	631,598
MOISTURE SEPARATOR REHEATERS	0	0	0	0	0	6,360,460	6,360,460
REACTOR FEEDWATER PUMPS	0	0	0	0	0	3,647,490	3,647,490
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	0	1,076,385	1,076,385
OTHER TG BLDG	0	0	0	0	0	43,206,647	43,206,647
RAD WASTE BLDG	0	0	0	0	0	21,394,273	21,394,273
REACTOR BLDG – CLASS A	0	0	0	0	0	1,840,085	1,840,085
REACTOR BLDG – CLASS B	14,112,295	7,129,216	406,453	0	1,128,984	0	22,776,947
TG BLDG – CLASS A	0	0	0	0	0	1,242,291	1,242,291
TG BLDG – CLASS B	9,261,193	4,678,548	274,333	0	740,895	0	14,954,969
RAD WASTE & CONTROL – CLASS A	0	0	0	0	0	1,072,293	1,072,293
RAD WASTE & CONTROL – CLASS B	8,379,175	4,232,972	236,715	0	670,334	0	13,519,196
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	0	630,705	630,705
CONCENTRATOR BOTTOMS – CLASS B	8,662,881	5,792,488	15,267,200	0	1,526,270	0	31,248,839
OTHER	0	0	0	0	0	1,547,860	1,547,860
POST-TMI-2 ADDITIONS	0	0	0	0	0	320,247	320,247
SUBTOTAL BWR COSTS	**43,720,780**	**55,474,212**	**91,272,900**	**0**	**5,652,996**	**176,683,774**	**372,804,662**
ATLANTIC COMPACT COMMISSION ADMINISTRATIVE SURCHARGE							100,223
TOTAL BWR COSTS (INSIDE COMPACT)							**372,904,885**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-27 PWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Washington Disposal Facility (2022 dollars)

REFERENCE PWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	WASTE VENDOR CHARGE	DISPOSAL COST
VESSEL WALL	0	0	0	0	957,220	957,220
VESSEL HEAD & BOTTOM	0	0	0	0	2,129,600	2,129,600
UPPER CORE SUPPORT ASSM	0	0	0	0	100,760	100,760
UPPER SUPPORT COLUMN	0	0	0	0	100,760	100,760
UPPER CORE BARREL	20,888	21,924	17,490	41,152	0	101,452
UPPER CORE GRID PLATE	52,219	54,809	43,725	102,879	0	253,631
GUIDE TUBES	0	0	0	0	151,140	151,140
LOWER CORE BARREL[(a)]	334,200	350,776	279,837	658,426	0	1,623,239
THERMAL SHIELDS[(a)]	62,663	65,771	52,469	123,455	0	304,357
CORE SHROUD[(a)]	41,775	43,847	34,980	82,303	0	202,905
LOWER GRID PLATE[(a)]	52,219	54,809	43,725	102,879	0	253,631
LOWER SUPPORT COLUMN	10,444	10,962	8,745	20,576	0	50,726
LOWER CORE FORGING	114,881	120,579	96,194	226,334	0	557,988
MISC INTERNALS	83,550	87,694	69,959	164,606	0	405,810
BIO SHIELD CONCRETE	0	0	0	0	6,287,424	6,287,424
REACTOR CAVITY LINER	0	0	0	0	128,973	128,973
REACTOR COOLANT PUMPS	0	0	0	0	2,236,080	2,236,080
PRESSURIZER	0	0	0	0	1,916,640	1,916,640
R.Hx,EHx,SUMP PUMP,CAVITY PUMP	0	0	0	0	100,760	100,760
PRESSURIZER RELIEF TANK	0	0	0	0	302,280	302,280
SAFETY INJECTION ACCUM TANKS	0	0	0	0	1,007,600	1,007,600
STEAM GENERATORS	0	0	0	0	11,373,129	11,373,129
REACTOR COOLANT PIPING	0	0	0	0	831,270	831,270
REMAINING CONTAM. MATLS	0	0	0	0	13,251,955	13,251,955
CONTAMINATED MATRL OTHR BLD	0	0	0	0	120,184,261	120,184,261
FILTER CARTRIDGES	32,898	65,771	367,286	576,934	0	1,042,888
SPENT RESINS	208,875	219,235	174,898	411,516	0	1,014,524
COMBUSTIBLE WASTES – CLASS A	0	0	0	0	6,091,965	6,091,965
COMBUSTIBLE WASTES – CLASS B	328,978	328,853	3,672,858	948,041	0	5,278,730
EVAPORATOR BOTTOMS	0	0	0	0	2,552,667	2,552,667
POST-TMI-2 ADDITIONS	0	0	0	0	3,918,577	3,918,577
HEAVY OBJECT SURCHARGE						0
SITE AVAILABILITY CHARGES						796,180
OPERATING MARGIN						2,639,392
SUBTOTAL PWR COSTS	**1,343,588**	**1,425,029**	**4,862,164**	**3,459,100**	**173,623,060**	**188,148,514**
TAXES & FEES (% OF CHARGES)						624,595
TAXES & FEES ($/UNIT VOL.)						372,126
ANNUAL PERMIT FEES (3 YRS)						212,000
TOTAL PWR COSTS						**189,357,235**

[(a)] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

Table B-28 BWR LLW Disposition Costs Using a Combination of Non-Compact Disposal Facility and the Washington Disposal Facility (2022 dollars)

REFERENCE BWR COMPONENT	VOLUME CHARGE	SHIPMENT CHARGE	CONTAINER CHARGE	CONTAINER DOSE RATE CHARGE	VENDOR CHARGE	DISPOSAL COST
STEAM SEPARATOR	36,882	153,465	244,857	948,041	0	1,383,245
FUEL SUPPORT & PIECES	18,441	76,732	122,429	288,061	0	505,663
CONTROL RODS/INCORES	55,323	87,694	69,959	948,041	0	1,161,017
CONTROL RODS GUIDES	0	0	0	0	35,583	35,583
JET PUMPS	51,634	219,235	349,796	948,041	0	1,568,707
TOP FUEL GUIDES	88,516	789,247	629,633	948,041	0	2,455,437
CORE SUPPORT PLATE	0	0	0	0	97,853	97,853
CORE SHROUD[a]	173,344	1,534,646	1,224,286	948,041	0	3,880,317
REACTOR VESSEL WALL	0	0	0	0	71,166	71,166
SAC SHIELD Neutron-Activated Matl	0	0	0	0	800,617	800,617
REACT. WATER REC	0	0	0	0	782,826	782,826
SAC SHIELD Contaminated Matl	0	0	0	0	2,757,682	2,757,682
OTHER PRIMARY CONTAINMENT	0	0	0	0	31,455,364	31,455,364
CONTAINM. ATMOSPHERIC	0	0	0	0	426,996	426,996
HIGH PRESSURE CORE SPRAY	0	0	0	0	151,228	151,228
LOW PRESSURE CORE SPRAY	0	0	0	0	88,957	88,957
REACTOR BLDG CLOSED COOLING	0	0	0	0	284,664	284,664
REACTOR CORE ISO COOLING	0	0	0	0	115,645	115,645
RESIDUAL HEAT REMOVAL	0	0	0	0	551,536	551,536
POOL LINER & RACKS	0	0	0	0	3,389,280	3,389,280
CONTAMINATED CONCRETE	0	0	0	0	3,860,755	3,860,755
OTHER REACTOR BUILDING	0	0	0	0	12,623,066	12,623,066
TURBINE	0	0	0	0	26,434,899	26,434,899
NUCLEAR STEAM CONDENSATE	0	0	0	0	3,229,156	3,229,156
LOW PRESSURE FEEDWATER HEATERS	0	0	0	0	6,556,166	6,556,166
MAIN STEAM	0	0	0	0	631,598	631,598
MOISTURE SEPARATOR REHEATERS	0	0	0	0	6,360,460	6,360,460
REACTOR FEEDWATER PUMPS	0	0	0	0	3,647,490	3,647,490
HIGH PRESSURE FEEDWATER HEATERS	0	0	0	0	1,076,385	1,076,385
OTHER TG BLDG	0	0	0	0	43,206,647	43,206,647
RAD WASTE BLDG	0	0	0	0	21,394,273	21,394,273
REACTOR BLDG – CLASS A	0	0	0	0	1,840,085	1,840,085
REACTOR BLDG – CLASS B	343,110	350,776	3,873,991	948,041	0	5,515,918
TG BLDG – CLASS A	0	0	0	0	1,242,291	1,242,291
TG BLDG – CLASS B	231,580	230,197	2,614,725	948,041	0	4,024,543
RAD WASTE & CONTROL – CLASS A	0	0	0	0	1,072,293	1,072,293
RAD WASTE & CONTROL – CLASS B	199,825	208,273	2,256,184	886,006	0	3,550,288
CONCENTRATOR BOTTOMS – CLASS A	0	0	0	0	630,705	630,705
CONCENTRATOR BOTTOMS – CLASS B	545,849	570,012	454,735	948,041	0	2,518,636
OTHER	0	0	0	0	1,547,860	1,547,860
POST-TMI-2 ADDITIONS	0	0	0	0	320,247	320,247
HEAVY OBJECT SURCHARGE						0
SITE AVAILABILITY CHARGES						796,180
OPERATING MARGIN						6,322,178
SUBTOTAL BWR COSTS	**1,744,504**	**4,220,278**	**11,840,595**	**8,758,396**	**176,683,774**	**210,365,903**
TAXES & FEES (% OF CHARGES)						1,448,332
TAXES & FEES ($/UNIT VOL.)						572,105
ANNUAL PERMIT FEES (3 YRS)						212,000
TOTAL BWR COSTS						**212,598,340**

[a] GTCC Material: Assumes a low-density, distributed packaging scheme and final disposal as LLW. High-density packaging, ISFSI storage, and geologic repository disposal could reduce disposal costs.

APPENDIX C
BUREAU OF LABOR STATISTICS ON THE INTERNET

For use in the adjustment formula in Chapter 3, the labor indexes for the first quarter of 2024 and the producer price indexes for March 2024 were obtained from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) data on the Internet.

These dates were chosen to agree, to the extent possible, with the effective dates of the waste burial rate schedules. Instructions for accessing and obtaining the specific indexes used in this report follow below.

Bureau of Labor Statistics Internet Data Page

To obtain reports of producer price indexes and labor indexes, proceed as follows:

1. Enter the URL: **http://www.bls.gov/data/**

2. Click on the item labeled *Series Report*.

3. In the box labeled *Enter series id(s) below*, type in the following six series identifications (IDs), one ID per line:

Series ID	Producer Price Indexes
wpu0543	(Industrial electric power–used in calculation of P_x, per Section 3.3)
wpu0573	(Light fuel oils–used in calculation of F_x per Section 3.3)

Labor Indexes (Used in the calculation of L_x, per Section 3.1)

CIU2010000000210I	(Total compensation, private industry, Northeast region)
CIU2010000000220I	(Total compensation, private industry, South region)
CIU2010000000230I	(Total compensation, private industry, Midwest region)
CIU2010000000240I	(Total compensation, private industry, West region)

4. Click the button labeled *Next*.

5. In the box labeled *Select view of the data*, use *Table Format* and *Original Data value*.

6. In the box labeled *Select the time frame for your data*, specify the years you want and time period.

7. Click on the button labeled *Retrieve Data* and the six tables of data you requested will be displayed.

APPENDIX D
REPRESENTATIVE EXAMPLES OF DECOMMISSIONING COSTS FOR 2012 THROUGH 2024

In Section 3.5 of this revision and the five previous revisions of NUREG-1307, decommissioning costs for four typical situations were developed. Results of these calculations are summarized below.

Example 1 (No Compact-Affiliated Disposal Facilities)

Reactor Type: BWR
Thermal Power Rating: 3400 MWt
Location of Plant: Midwest Compact
LLW Burial Location: 2012 – Unknown (Generic LLW Disposal Site); Beginning 2016 – Non-Compact Disposal Facilities

	2012	2016	2018	2020	2022	2024
L_x	2.39	2.57	2.70	2.86	3.08	3.34
E_x	2.795	1.632	2.340	2.029	3.906	3.444
B_x	14.160	13.132	13.422	12.837	12.296	11.658
Decommissioning Cost (Millions)	$679	$644	$677	$668	$704	$700

Example 2 (Compact-Affiliated Disposal Facility Only)

Reactor Type: Pressurized-Water Reactor (PWR)
Thermal Power Rating: 3400 MWt
Location of Plant: Texas Compact
LLW Burial Location: Texas (Texas Compact); 2018 is the first use of the Texas compact as an example calculation for Compact-Affiliated Disposal Facility Only

	2012	2016	2018	2020	2022	2024
L_x	NA	NA	2.58	2.71	2.92	3.20
E_x	NA	NA	2.320	2.030	3.768	3.373
B_x	NA	NA	8.508	8.040	6.650	6.650
Decommissioning Cost (Millions)	NA	NA	$404	$398	$404	$418

Example 3 (Combination of Compact-Affiliated and Non-Compact Disposal Facilities)

Reactor Type: PWR
Thermal Power Rating: 3400 MWt
Location of Plant: Atlantic Compact
LLW Burial Location: South Carolina (Atlantic Compact) and Non-Compact Disposal Site

	2012	2016	2018	2020	2022	2024
L_x	2.52	2.75	2.89	3.06	3.29	3.56
E_x	2.704	1.645	2.320	2.030	3.768	3.373
B_x	13.885	10.971	11.607	11.679	14.067	12.813
Decommissioning Cost (Millions)	$530	$464	$497	$506	$601	$585

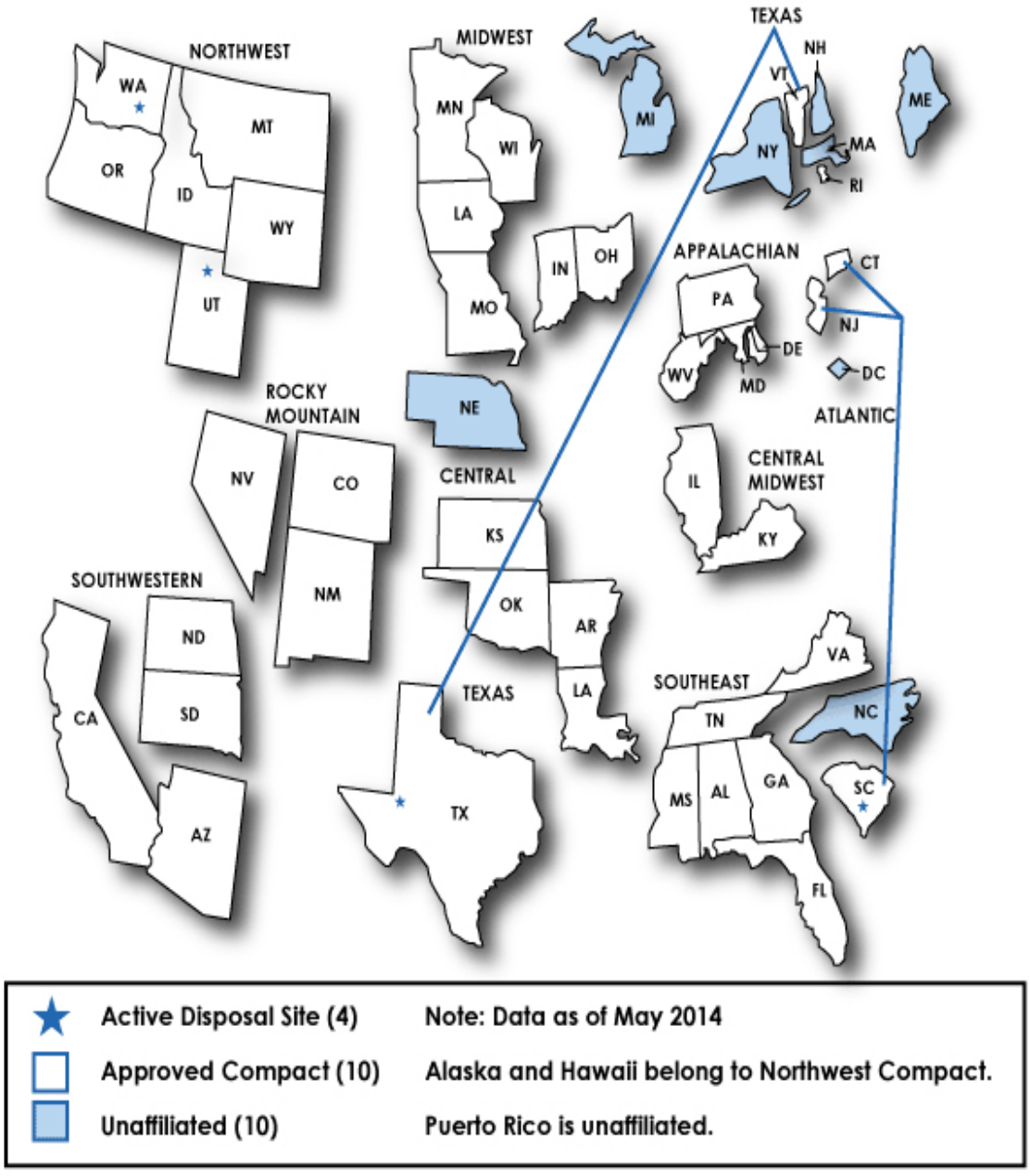
Example 4 (Compact-Affiliated Disposal Facility Only)

Reactor Type: Boiling-Water Reactor (BWR)
Thermal Power Rating: 3400 MWt
Location of Plant: Northwest Compact
LLW Burial Location: Washington

	2012	2016	2018	2020	2022	2024
L_x	2.38	2.60	2.77	2.94	3.18	3.48
E_x	2.795	1.632	2.340	2.029	3.906	3.444
B_x	6.704	7.290	9.118	9.326	8.571	11.274
Decommissioning Cost (Millions)	$457	$473	$555	$571	$602	$701

APPENDIX E
LOW-LEVEL WASTE COMPACTS

The figure and table below identify the composition of all LLW compacts as of May 2014



(source: NRC, http://www.nrc.gov/waste/llw-disposal/licensing/compacts.html).

Compact	Affiliated States			
Northwest	Alaska	Idaho	Oregon	Washington[a]
	Hawaii	Montana	Utah	Wyoming
Southwestern	Arizona	California[b]	North Dakota	South Dakota
Rocky Mountain	Colorado	New Mexico	Nevada	
Midwest	Indiana	Minnesota	Ohio[b]	Wisconsin
	Iowa	Missouri		
Central	Arkansas	Kansas	Louisiana	Oklahoma
Texas	Texas[a]	Vermont		
Central Midwest	Illinois[b]	Kentucky		
Appalachian	Delaware	Maryland	Pennsylvania[b]	West Virginia
Atlantic	Connecticut	New Jersey	South Carolina[a]	
Southeast	Alabama	Georgia	Tennessee	Virginia
	Florida	Mississippi		
Unaffiliated States	District of Columbia	Michigan	New York	Rhode Island
	Massachusetts	Nebraska	Puerto Rico	North Carolina
	Maine	New Hampshire		

(a) Current Host State for operating LLW disposal sites (3 States)
(b) Selected Host State for future LLW disposal sites (4 States)

APPENDIX F
COMMENT RESOLUTION MATRIX

Please see file at ADAMS Accession Number ML_____.

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NUREG-1307, Revision 20, "Report on Waste Burial Charges: Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities", explains the formula acceptable to the NRC for determining the minimum decommissioning fund requirements for nuclear power reactors, as required by the NRC's regulations. Specifically, this report provides adjustment factors, and updates to these values, for the labor, energy, and waste burial components of the minimum formula

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

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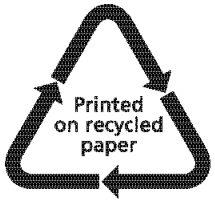

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