

2021 ESCALATION ANALYSIS
for the
VOGTLE ELECTRIC GENERATING PLANT
DECOMMISSIONING COST STUDY



prepared for

SOUTHERN NUCLEAR OPERATING COMPANY

prepared by

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DECOMMISSIONING COST ESCALATION STUDY

Purpose

This report presents escalated costs for the estimates of the costs to decommission the Vogtle Electric Generating Plant (Vogtle) for the selected decommissioning scenarios following the scheduled cessation of plant operations. The estimates, escalated to the year of expenditure dollars, are designed to provide the Southern Nuclear Operating Company (SNC) with the information to assess its current decommissioning liability, as it relates to Vogtle.

Basis

This escalation analysis is based upon the recent decommissioning cost analysis performed for Vogtle.¹ Explanatory information from this report is provided below.

Operating licenses were issued for Vogtle Unit 1 and Unit 2 in 1987 and 1989, respectively. SNC was granted License Renewals by the NRC for the Vogtle reactors on June 3, 2009. Therefore, for the purposes of this study, the final shutdown dates (license expiration) are based on the current, 60-year operating life, with the permanent cessation of operations scheduled for January 16, 2047 and February 9, 2049 for Units 1 and 2, respectively.

The DECON decommissioning scenario was evaluated for the Vogtle nuclear units. It assumes that the decommissioning of the Vogtle site will be a coordinated effort between the two units. Each unit will be promptly decommissioned upon the expiration of their operating licenses, i.e., in 2047 and 2049.

Spent fuel storage operations continue at the site until the transfer of the fuel to an appropriate disposal facility is complete, assumed to be in the year 2078.

The primary objectives of a Vogtle decommissioning project would be to remove the facility from service, reduce residual radioactivity to levels permitting unrestricted release, restore the site, perform this work safely, and complete the work in a cost-effective manner. Consideration must be given to the cost of the decommissioning project, minimization of occupational radiation exposure, availability of low-level waste disposal facilities, availability of a high-level waste (spent fuel) repository or Department of Energy (DOE) interim storage facility, regulatory requirements, and

¹ "Decommissioning Cost Study for the Vogtle Electric Generating Plant," Document S18-1791-002, Rev. 1, TLG Services, Inc., November 2021

public concerns. In addition, 10 CFR 50.82(a)(3) requires decommissioning to be completed within 60 years of permanent cessation of operations.

Under the DECON methodology, the facility is transitioned to a decommissioning project soon after final shutdown. Spent fuel is removed from the reactor and placed within the spent fuel pools, awaiting eventual transfer to the on-site dry fuel storage facility, or direct transfer to the U.S. Department of Energy. Plant systems are drained and de-energized to conform to the site project schedule. Contaminated materials are removed, packaged, shipped and disposed of offsite. Clean materials are surveyed for radioactive contamination and released as scrap metal or construction debris. Following the license termination survey and termination of the NRC licenses on the power plant (the dry fuel storage ISFSI will remain under the NRC license until all fuel is shipped to the DOE and the ISFSI decommissioned), all site structures are removed to three foot below grade elevation, and the subgrade voids backfilled with concrete rubble and structural fill. The site is finally graded to conform to the surrounding area, and native vegetation placed for erosion control.

An Independent Spent Fuel Storage Installation (ISFSI) has been constructed adjacent to the power block. The spent fuel will be relocated from the spent fuel pools in the fuel handling buildings to the ISFSI to await transfer to a DOE facility. Assuming the first fuel shipment date is in 2040, the decommissioning estimate assumes that the removal of spent fuel from the site could be completed by the end of year 2078.

The currently projected total costs (in thousands of 2021 dollars) to decommission the nuclear station, for the DECON scenario analyzed, are as follows:

Unit 1	\$941,348
Unit 2	\$990,557
Station Total	\$1,931,905

The costs include the monies anticipated to be spent for operating license termination (radiological remediation), interim spent fuel storage and site restoration activities. The costs are based on several key assumptions in areas of regulation, component characterization, high-level radioactive waste management, low-level radioactive waste disposal, performance uncertainties (contingency) and site remediation and restoration requirements.

The following table reflects the percentage of each cost component relative to the total costs to decommission Vogtle:

Escalation Category	Unit 1		Unit 2	
	Costs (Thousands of 2021\$)	% of Total Cost	Costs (Thousands of 2021\$)	% of Total Cost
Labor	543,045	57.7	572,413	57.8
Equipment & Material	182,634	19.4	202,982	20.5
Energy	4,852	0.5	4,918	0.5
LLRW Disposal	96,712	10.3	110,471	11.2
Other Items	114,106	12.1	99,774	10.1

The site-specific cost estimate was prepared by TLG Services, Inc. (TLG) in year-end 2021 (i.e., nominal) dollars. Because the actual decommissioning will not occur for many years and may continue for decades, the nominal-dollar estimates must be escalated into the year of expenditure if a Net Present Value for each unit of the decommissioning estimate is required. That is, we must determine the dollar value of each year's expenditure at the time it is expected to be incurred. Those escalated dollars then provide the basis for financial planning and asset management. Because many of the decommissioning activities occur long in the future, small fluctuations in escalation on the cost side, and investment earnings on the trust balance side, have a substantial impact on the resources required over the long periods of time associated with most decommissioning scenarios.

Methodology

In this analysis, TLG reviewed each of the five escalation cost components separately to determine the rate by which each component was expected to escalate annually. The following narrative describes the methodology used to escalate the schedules of decommissioning expenditures.

Having developed estimates of the cost to decommission Vogtle using the DECON scenario, the mathematics to transform those costs to the year in which they will actually be incurred is relatively straightforward. The key to the analysis is selecting the appropriate forecasting indices for each of the major cost components. For that, TLG has relied upon NRC publications and the industry-wide recognized expertise of IHS-Markit.

In support of calculating the minimum funding assurance, the NRC divides its reference costs for decommissioning into categories of labor, energy, and Low Level

Radioactive Waste (LLRW) disposal. To provide guidance to operators and regulators and promote uniformity, the NRC periodically revises NUREG-1307, "Report on Waste Burial Charges." NUREG-1307 is helpful in that it identifies the appropriate indices that should be used to escalate the labor and energy cost components and provides historical changes in low level radioactive waste disposal costs.

TLG also allocates its costs for decommissioning into categories, with the NRC's labor category further subdivided into "labor," "equipment and materials," and an "other" category for miscellaneous fees, taxes and other unique or one-time expenditures.

Consistent with standards defined in the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC), Topic 410-20,^[2] TLG develops future cash flows by escalating four of the cost categories (labor, equipment and materials, energy and other) with indices provided by IHS-Markit of Lexington, MA. IHS-Markit is a privately held company which acquired Global Insight in 2008. The combined company includes well-known businesses such as Cambridge Energy Research Associates (CERA), Jane's Information Group, and IHS Herold; it also includes the former companies known as DRI (Data Resources, Inc.) and WEFA (Wharton Econometric Forecasting Associates).

IHS-Markit has no direct index for escalation of low level radioactive waste disposal costs. The inflation index used for radioactive waste burial costs is the IHS-Markit Consumer Price Index, All Items, All Urban with an additional 1% per year to account for the historical difference between low-level waste disposal rates reported in NRC NUREG-1307 documents and inflation rates reported by the Bureau of Labor Statistics (CPI).

Since the timeframe of decommissioning typically exceeds that of the published indices, for years beyond the published index, the inflation factor is determined using a "moving-average" method, averaging the most recent 25 years of indices to determine the future year index. This is a well-accepted methodology for determining longer-term projections and one that has been reviewed and deemed appropriate by IHS-Markit as well.

² Accounting Standards Codification, Topic 410-20, Financial Accounting Standards Board, July 2009.

ASC 410-20-55-14 states: "It is expected that uncertainties about the amount and timing of future cash flows can be accommodated by using the expected present value technique and therefore will not prevent the determination of a reasonable estimate of fair value."

Approach

The base year (2021) costs for the DECON scenario were extracted from Reference 1, Tables 3.1 and 3.2. For both units, plus the station total, this requires the escalation of three separate cash flows (Tables 1 through 3).

The cost elements in Tables 1 through 3 are assigned to one of three subcategories: “License Termination,” “Spent Fuel Management,” and “Site Restoration.” The subcategory “License Termination” is used to accumulate costs that are consistent with “decommissioning” as defined by the NRC in its financial assurance regulations (i.e., 10 CFR §50.75). The cost reported for this subcategory is generally sufficient to terminate the plant’s operating license, recognizing that there may be some additional cost impact from spent fuel management.

The “Spent Fuel Management” subcategory contains costs associated with the containerization and transfer of spent fuel from the pool to an appropriate disposal facility or to the ISFSI for interim storage, and the transfer of the multipurpose canisters from the ISFSI. Costs are also included for the operations of the pool and management of the ISFSI until such time that the transfer of all fuel from this facility to an off-site location is complete.

“Site Restoration” is used to capture costs associated with the dismantling and demolition of buildings and facilities demonstrated to be free from contamination. This includes structures never exposed to radioactive materials, as well as those facilities that have been decontaminated to appropriate levels. Structures are removed to a depth of three feet and backfilled to conform to local grade.

Decommissioning costs were divided into the five escalation categories, for which future rate of inflation factors were established. The five categories are:

<i>Labor</i>	Wages, fringes and benefits for craft, salaries and benefits for professional workers, clerical, administrative, service, contract workers, as well as for certain trades
<i>Equipment & Material</i>	Heavy equipment, specialty tooling, spent fuel canisters and shield overpacks, waste packaging, small tools, construction materials, consumables, rental equipment and temporary construction facilities
<i>Energy</i>	Electrical power purchases (as a large industrial customer) to support site operations

<i>LLRW Disposal</i>	Costs for the processing of low-level radioactive waste as well as for the controlled disposal of material that cannot be recovered (released for unrestricted use)
<i>Other</i>	Site operating costs (not already accounted for), for example, taxes, fees, and costs for specialized services and project support activities (may include unspecified contributions from labor, equipment and materials, and transportation), and payments for one-time disposal services (e.g., GTCC)

Escalation

The following escalation indices were established for each of the five cost categories. The escalation indices for Labor, Equipment and Material, Energy and Other were provided by IHS-Markit Company via their DataInsight-Web online service. The indices used show the last update as 3 September 2021. IHS-Markit does not provide historical or projections for disposal costs of radioactive waste. As such, a TLG-developed LLRW Disposal/Recycling index was used in this escalation analysis. This index is a combination of historical information through 2021 from NRC publications for disposal site rates and projections using the Consumer Price Index, All Items, All Urban information provided by IHS-Markit as discussed previously.

Forecast data for labor, equipment/ materials, energy, and general inflation were available through 2046. In order to extrapolate beyond the available IHS-Markit data, TLG calculated a 25-year moving average inflation factor to extend the IHS-Markit indices through 2079, the latest end point of the Vogtle decommissioning cash flows.

Index Selection

The following table identifies the IHS-Markit forecast data sets used for the four cost categories (exclusive of LLRW disposal). Consistent with the NRC's guidance, TLG escalates the labor component of its decommissioning cost estimates using an Employment Cost Index (ECI) and the energy cost component with a Producer Price Index (PPI).

Use of the Consumer Price Index (CPI) for general services, site operating costs and one-time expenditures is consistent with the intent of the index (the measure of the average change in prices over time of goods and services).

IHS-Markit Forecast Database	TLG Cost Category
ECI Total Compensation (ECIPCTNS)	Labor Expenditures Inflation
Producer Price Index, Machinery & Equipment (WPIP11)	Equipment/Material Expenditures Inflation
Producer Price Index, Fuels and Related Products and Power (WPIP05)	Energy Expenditures Inflation
Consumer Price Index, Services (CUSASNS)	Other Items Expenditures Inflation
TLG-Developed LLRW Disposal Price Index [Historical data based upon NRC published data; forecast data based upon the Consumer Price Index, All Items, All Urban (CPI) plus 1% additional to reflect above-inflation increases observed relative to the NRC data]	LLRW Disposal / Recycling

Labor

The decommissioning process is labor intensive, with labor representing more than half of the total cost. The estimates for Vogtle include the cost of the craft labor performing field activities, the field supervision and support services, project management, administration, security, and costs for specialty contractors. The Employment Cost Index (ECI) is a quarterly measure of changes in labor costs. It is one of the principal economic indicators used by the Federal Reserve Bank. The index shows changes in wages and salaries and benefit costs, as well as changes in total compensation. The ECIPCTNS index, provided by IHS-Markit, is a yearly estimate of change in the cost of labor, defined as compensation per employee hour worked. The self-employed, owners-managers, and unpaid family workers are excluded from coverage. The ECI is designed as a fixed-weight index at the occupational level, thus eliminating the effects of employment shifts among occupations. Both components of compensation, wages/salaries, and benefits, are covered.

In addition to TLG's judgment, IHS-Markit has confirmed that the selected index is appropriate to use in determining the rate at which the labor costs will escalate over time.

Equipment and Material

Equipment and material costs in the decommissioning estimates include small tools and consumables as well as the heavy construction equipment involved in the dismantling, demolition and movement of materials around the site. The Producer Price Indexes (PPI) measures monthly average changes in selling prices received by domestic producers for their output. Most of the information used in the PPI is obtained by sampling of industries in the mining and manufacturing sectors of the economy. The indexes reflect price trends for a constant set of goods and services representing the total output of an industry.

In addition to TLG's judgment, IHS-Markit has confirmed that the selected index is appropriate to use in determining the rate at which the equipment and material costs will escalate over time.

Energy

Energy costs in the decommissioning estimate include only direct energy purchases, primarily electric power and fuel oil for heating. TLG uses a broad based power escalation index, the Producers Price Index for Fuels and Related Products and Power (WPIP05). While the WPIP05 index has some volatility (since it tracks in part the price of oil), the cost of energy in the decommissioning estimates is a small percentage and therefore has little effect on the overall escalation rate for decommissioning cost.

In addition to TLG's judgment, IHS-Markit has confirmed that the selected index is appropriate to use in determining the rate at which energy costs will escalate over time.

Low-Level Radioactive Waste Disposal

The inflation index used for radioactive waste burial costs is the IHS-Markit Consumer Price Index, All Items, All Urban with an additional 1% per year to account for differences (past 20 years) between low-level waste disposal rates reported in NRC NUREG-1307 documents and general inflation rate (CPI) reported by the Bureau of Labor Statistics.

Other

"Other" costs in the decommissioning estimates include such items as licensing fees, taxes, special services (for example, a fee for the geologic disposal of Greater-than-Class C waste), as well as labor-intensive activities such as radiological surveys that include costs for off-site analytical services. Because the "Other" costs contain this variety of cost components, TLG uses the Consumer Price Index, Services to project future expenditures. The CUSASNS index measures changes in the prices of services. It is therefore more representative of the cost elements included in the

decommissioning estimates. Accordingly, the use of the CUSASNS index for “Other” costs reflects more accurately the cost components with the “Other” category than the use of the “Labor” escalation factor as a proxy.

In addition to TLG’s judgment, IHS-Markit has confirmed that the selected index is appropriate to use in determining the rate at which the “other” costs will escalate over time.

Results

With the proper escalation indices identified, TLG escalated the cost per year for the five escalation categories using the IHS-Markit index corresponding to that year and escalation category. Tables 1 through 3 provide escalated schedules of annual expenditures for the DECON scenario for each Vogtle unit individually, plus a combined total of both units. The schedules detail each of the five cost categories through to the end of the decommissioning period (*i.e.*, 2079) for Total Costs, as well as the three cost categories of License Termination, Spent Fuel Management, and Site Restoration.

No discounting of the escalated dollars was performed.

Using the escalated cash flows for each unit, TLG determined the single-value yearly escalation rate which yielded the same sum of escalated dollars for each of the three tables. The rate, referred to as a composite average annual escalation rate, is tabulated for the three decommissioning cost cash flows as follows:

Unit 1	2.591%
Unit 2	2.581%
Station Total	2.586%

In a similar fashion, the composite average annual escalation rates for each of the five escalation categories can be developed. The following table details the composite annual average rates for the DECON decommissioning scenario.

	Composite Average Annual Rate (%)		
Escalation Category	Unit 1	Unit 2	Station
Labor	2.767	2.767	2.767
Equipment/ & Material	1.218	1.219	1.219
Energy	1.842	1.853	1.847
LLRW Disposal	3.283	3.284	3.283
Other Items	2.809	2.807	2.808

Similarly, the composite average annual escalation rates for the three cost categories identified in the decommissioning cost estimate can also be developed. The values for the DECON decommissioning scenario are provided in the following table.

	Composite Average Annual Rate (%)		
Escalation Category	Unit 1	Unit 2	Station
License Termination	2.697	2.703	2.700
Spent Fuel Management	2.473	2.434	2.454
Site Restoration	2.269	2.195	2.228

Vogtle Electric Generating Plant
2021 Escalation Analysis

ESCALATION ANALYSIS OF CASHFLOWS

Source Documentation:	Decommissioning Cost Analysis for the Vogtle Electric Generating Plant
Source Document Number:	S18-1791-002 Rev. 1
	Tables 3.1a, 3.1b, 3.1c and 3.1d
Unit Identification	Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 1
Estimate basis year:	2021
Decommissioning Scenario:	DECON
Operating Lifetime	Decommissioning After 60 Year Operation

Single Value Escalation % by Major Cost Categories			
Single value escalations: Cost Category	Single-value Yearly Escal.	Total Costs	
		2021 \$	Escalated \$
Total Costs	2.591%	941,348	2,170,027
License Termination Costs	2.697%	666,292	1,487,731
Spent Fuel Management Costs	2.473%	194,031	497,704
Site Restoration Costs	2.269%	81,025	184,595
Labor Costs	2.767%	543,045	1,313,578
Equipment & Material Costs	1.218%	182,634	267,308
Energy Costs	1.842%	4,852	8,190
LLRW Disposal Costs	3.283%	96,712	256,612
Other Costs	2.809%	114,106	324,343

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 1 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Total Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2047	147,987	18,231	1,251	85	59,805	227,359
2048	166,864	46,890	1,966	41,246	19,570	276,536
2049	161,496	50,955	1,289	73,523	21,595	308,858
2050	135,939	32,728	1,133	50,058	17,358	237,216
2051	123,817	23,319	1,060	37,952	15,283	201,431
2052	106,407	19,984	821	34,356	28,679	190,247
2053	18,225	507	0	18	2,933	21,683
2054	18,722	514	0	18	3,014	22,268
2055	80,109	3,530	235	68	3,689	87,631
2056	43,322	17,422	157	0	1,960	62,861
2057	44,370	17,505	159	0	2,008	64,132
2058	32,639	12,144	106	0	2,078	46,967
2059	8,119	638	0	0	2,166	10,923
2060	8,296	539	0	0	2,231	11,066
2061	8,565	654	0	0	2,286	11,505
2062	8,729	552	0	0	2,349	11,630
2063	9,035	671	0	0	2,413	12,119
2064	9,232	566	0	0	2,486	12,284
2065	9,531	688	0	0	2,547	12,766
2066	9,714	581	0	0	2,618	12,913
2067	10,056	706	0	0	2,690	13,452
2068	10,277	596	0	0	2,771	13,644
2069	10,611	724	0	0	2,840	14,175
2070	10,815	611	0	0	2,918	14,344
2071	11,109	618	0	0	2,999	14,726
2072	11,263	376	0	0	3,090	14,729
2073	12,270	1,395	0	0	3,166	16,831
2074	12,604	1,413	0	0	3,254	17,271
2075	13,140	1,691	0	0	3,344	18,175
2076	13,530	1,712	0	0	3,445	18,687
2077	13,559	1,334	0	0	3,530	18,423
2078	15,076	4,795	0	0	69,675	89,546
2079	18,150	2,629	13	19,288	23,549	63,629
Totals	1,313,578	267,308	8,190	256,612	324,339	2,170,027

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 1 DECON Cash Flows by Category - Decommissioning After 60 Year Operation License Termination Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2047	141,344	7,448	1,251	85	37,920	188,048
2048	152,567	25,508	1,966	41,246	14,941	236,228
2049	149,014	33,265	1,289	73,523	18,027	275,118
2050	126,324	22,442	1,133	50,058	13,690	213,647
2051	115,635	16,874	1,060	37,952	11,512	183,033
2052	96,849	15,019	821	34,356	26,362	173,407
2053	9,510	384	0	18	2,414	12,326
2054	9,769	388	0	18	2,480	12,655
2055	71,496	2,651	231	68	3,126	77,572
2056	222	0	0	822	1,044	1,044
2057	227	0	0	0	842	1,069
2058	152	0	0	0	564	716
2059	0	0	0	0	0	0
2060	0	0	0	0	0	0
2061	0	0	0	0	0	0
2062	0	0	0	0	0	0
2063	0	0	0	0	0	0
2064	0	0	0	0	0	0
2065	0	0	0	0	0	0
2066	0	0	0	0	0	0
2067	0	0	0	0	0	0
2068	0	0	0	0	0	0
2069	0	0	0	0	0	0
2070	0	0	0	0	0	0
2071	0	0	0	0	0	0
2072	0	0	0	0	0	0
2073	0	0	0	0	0	0
2074	0	0	0	0	0	0
2075	0	0	0	0	0	0
2076	0	0	0	0	0	0
2077	0	0	0	0	0	0
2078	494	1,958	0	0	66,122	68,574
2079	3,343	519	9	19,288	21,135	44,294
Totals	876,946	126,456	7,760	256,612	219,957	1,487,731

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 1 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Spent Fuel Management Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2047	5,351	10,784	0	0	21,884	38,019
2048	10,758	21,333	0	0	4,629	36,720
2049	9,006	17,583	0	0	3,568	30,157
2050	5,290	10,176	0	0	3,668	19,134
2051	3,341	6,333	0	0	3,771	13,445
2052	6,389	4,890	0	0	2,317	13,596
2053	8,715	124	0	0	519	9,358
2054	8,953	125	0	0	533	9,611
2055	7,661	417	4	0	563	8,645
2056	7,344	312	157	0	1,121	8,934
2057	7,521	315	159	0	1,148	9,143
2058	7,965	733	106	0	1,503	10,307
2059	8,119	638	0	0	2,166	10,923
2060	8,296	539	0	0	2,231	11,066
2061	8,565	654	0	0	2,286	11,505
2062	8,729	552	0	0	2,349	11,630
2063	9,035	671	0	0	2,413	12,119
2064	9,232	566	0	0	2,486	12,284
2065	9,531	688	0	0	2,547	12,766
2066	9,714	581	0	0	2,618	12,913
2067	10,056	706	0	0	2,690	13,452
2068	10,277	596	0	0	2,771	13,644
2069	10,611	724	0	0	2,840	14,175
2070	10,815	611	0	0	2,918	14,344
2071	11,109	618	0	0	2,999	14,726
2072	11,263	376	0	0	3,090	14,729
2073	12,270	1,395	0	0	3,166	16,831
2074	12,604	1,413	0	0	3,254	17,271
2075	13,140	1,691	0	0	3,344	18,175
2076	13,530	1,712	0	0	3,445	18,687
2077	13,559	1,334	0	0	3,530	18,423
2078	14,582	2,837	0	0	3,553	20,972
2079	0	0	0	0	0	0
Totals	303,331	92,027	426	0	101,920	497,704

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 1 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Site Restoration Costs - Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2047	1,292	0	0	0	0	1,292
2048	3,539	49	0	0	0	3,588
2049	3,476	108	0	0	0	3,584
2050	4,325	110	0	0	0	4,435
2051	4,841	112	0	0	0	4,953
2052	3,169	75	0	0	0	3,244
2053	0	0	0	0	0	0
2054	0	0	0	0	0	0
2055	951	462	0	0	0	1,413
2056	35,737	17,111	0	0	17	52,885
2057	36,622	17,281	0	0	18	53,921
2058	24,522	11,411	0	0	12	35,945
2059	0	0	0	0	0	0
2060	0	0	0	0	0	0
2061	0	0	0	0	0	0
2062	0	0	0	0	0	0
2063	0	0	0	0	0	0
2064	0	0	0	0	0	0
2065	0	0	0	0	0	0
2066	0	0	0	0	0	0
2067	0	0	0	0	0	0
2068	0	0	0	0	0	0
2069	0	0	0	0	0	0
2070	0	0	0	0	0	0
2071	0	0	0	0	0	0
2072	0	0	0	0	0	0
2073	0	0	0	0	0	0
2074	0	0	0	0	0	0
2075	0	0	0	0	0	0
2076	0	0	0	0	0	0
2077	0	0	0	0	0	0
2078	0	0	0	0	0	0
2079	14,807	2,110	4	0	2,414	19,335
Totals	133,301	48,829	4	0	2,461	184,595

Table 1
DECON Unit 1
Decommissioning After 60 Year Operation

Vogtle Electric Generationg Plant
2021 Escalation Analysis

ESCALATION ANALYSIS OF CASHFLOWS

Source Documentation:	Decommissioning Cost Analysis for the Vogtle Electric Generating Plant
Souce Document Number:	S18-1791-002 Rev. 1
	Tables 3.2a, 3.2b, 3.2c and 3.2d
Unit Identification	Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 2
Estimate basis year:	2021
Decommissioning Scenario:	DECON
Operating Lifetime	Decommissioning After 60 Year Operation

Single Value Escalation % by Major Cost Categories			
Single value escalations:			
Cost Category	Single-value Yearly Escal.	Total Costs 2021 \$ Escalated \$	
Total Costs	2.581%	990,557	2,365,573
License Termination Costs	2.703%	709,150	1,669,155
Spent Fuel Management Costs	2.434%	177,079	465,272
Site Restoration Costs	2.195%	104,328	231,146
Labor Costs	2.767%	572,413	1,437,926
Equipment & Material Costs	1.219%	202,982	303,948
Energy Costs	1.853%	4,918	8,632
LLRW Disposal Costs	3.284%	110,471	311,764
Other Costs	2.807%	99,774	303,303

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 2 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Total Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2049	127,309	15,104	1,212	85	30,370	174,080
2050	164,738	39,178	2,048	40,085	19,629	265,678
2051	170,135	48,540	1,343	81,793	22,401	324,212
2052	171,258	38,160	1,204	65,180	19,041	294,843
2053	172,567	30,645	1,104	53,012	16,601	273,929
2054	158,257	29,316	917	45,271	25,621	259,382
2055	106,490	9,629	369	7,050	11,295	134,833
2056	48,178	25,912	157	0	4,148	78,395
2057	49,344	26,169	159	0	4,250	79,922
2058	35,969	17,806	106	0	3,580	57,461
2059	8,119	638	0	0	2,166	10,923
2060	8,296	539	0	0	2,231	11,066
2061	8,565	654	0	0	2,286	11,505
2062	8,729	552	0	0	2,349	11,630
2063	9,035	671	0	0	2,413	12,119
2064	9,232	566	0	0	2,486	12,284
2065	9,531	688	0	0	2,547	12,766
2066	9,714	581	0	0	2,618	12,913
2067	10,056	706	0	0	2,690	13,452
2068	10,277	596	0	0	2,771	13,644
2069	10,611	724	0	0	2,840	14,175
2070	10,815	611	0	0	2,918	14,344
2071	11,109	618	0	0	2,999	14,726
2072	11,263	376	0	0	3,090	14,729
2073	12,270	1,395	0	0	3,166	16,831
2074	12,604	1,413	0	0	3,254	17,271
2075	13,140	1,691	0	0	3,344	18,175
2076	13,530	1,712	0	0	3,445	18,687
2077	13,559	1,334	0	0	3,530	18,423
2078	15,076	4,795	0	0	69,675	89,546
2079	18,150	2,629	13	19,288	23,549	63,629
Totals	1,437,926	303,948	8,632	311,764	303,303	2,365,573

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 2 DECON Cash Flows by Category - Decommissioning After 60 Year Operation License Termination Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2049	121,441	4,709	1,212	85	26,581	154,028
2050	154,218	24,148	2,048	40,085	15,541	236,040
2051	158,020	34,334	1,343	81,793	18,630	294,120
2052	159,483	25,779	1,204	65,180	15,154	266,800
2053	161,011	19,591	1,104	53,012	12,617	247,335
2054	145,798	19,099	917	45,271	22,941	234,026
2055	96,755	6,610	365	7,050	10,673	121,453
2056	95	0	0	0	822	917
2057	97	0	0	0	842	939
2058	65	0	0	0	564	629
2059	0	0	0	0	0	0
2060	0	0	0	0	0	0
2061	0	0	0	0	0	0
2062	0	0	0	0	0	0
2063	0	0	0	0	0	0
2064	0	0	0	0	0	0
2065	0	0	0	0	0	0
2066	0	0	0	0	0	0
2067	0	0	0	0	0	0
2068	0	0	0	0	0	0
2069	0	0	0	0	0	0
2070	0	0	0	0	0	0
2071	0	0	0	0	0	0
2072	0	0	0	0	0	0
2073	0	0	0	0	0	0
2074	0	0	0	0	0	0
2075	0	0	0	0	0	0
2076	0	0	0	0	0	0
2077	0	0	0	0	0	0
2078	494	1,958	0	0	66,122	68,574
2079	3,343	519	9	19,288	21,135	44,294
Totals	1,000,820	136,747	8,202	311,764	211,622	1,669,155

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 2 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Spent Fuel Management Costs - Thousands of Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2049	5,324	10,394	0	0	3,789	19,507
2050	7,786	14,977	0	0	4,088	26,851
2051	7,423	14,072	0	0	3,771	25,266
2052	6,557	12,250	0	0	3,887	22,694
2053	5,933	10,926	0	0	3,985	20,844
2054	7,571	10,108	0	0	2,680	20,359
2055	7,854	2,311	4	0	563	10,732
2056	7,344	312	157	0	1,121	8,934
2057	7,521	315	159	0	1,148	9,143
2058	7,965	733	106	0	1,503	10,307
2059	8,119	638	0	0	2,166	10,923
2060	8,296	539	0	0	2,231	11,066
2061	8,565	654	0	0	2,286	11,505
2062	8,729	552	0	0	2,349	11,630
2063	9,035	671	0	0	2,413	12,119
2064	9,232	566	0	0	2,486	12,284
2065	9,531	688	0	0	2,547	12,766
2066	9,714	581	0	0	2,618	12,913
2067	10,056	706	0	0	2,690	13,452
2068	10,277	596	0	0	2,771	13,644
2069	10,611	724	0	0	2,840	14,175
2070	10,815	611	0	0	2,918	14,344
2071	11,109	618	0	0	2,999	14,726
2072	11,263	376	0	0	3,090	14,729
2073	12,270	1,395	0	0	3,166	16,831
2074	12,604	1,413	0	0	3,254	17,271
2075	13,140	1,691	0	0	3,344	18,175
2076	13,530	1,712	0	0	3,445	18,687
2077	13,559	1,334	0	0	3,530	18,423
2078	14,582	2,837	0	0	3,553	20,972
2079	0	0	0	0	0	0
Totals	286,315	95,300	426	0	83,231	465,272

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant - Unit 2 DECON Cash Flows by Category - Decommissioning After 60 Year Operation Site Restoration Costs - Year of Expenditure Dollars						
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other	Yearly Totals
2049	544	0	0	0	0	544
2050	2,734	52	0	0	0	2,786
2051	4,692	133	0	0	0	4,825
2052	5,218	130	0	0	0	5,348
2053	5,623	127	0	0	0	5,750
2054	4,888	109	0	0	0	4,997
2055	1,881	708	0	0	59	2,648
2056	40,740	25,601	0	0	2,206	68,547
2057	41,725	25,855	0	0	2,260	69,840
2058	27,939	17,073	0	0	1,514	46,526
2059	0	0	0	0	0	0
2060	0	0	0	0	0	0
2061	0	0	0	0	0	0
2062	0	0	0	0	0	0
2063	0	0	0	0	0	0
2064	0	0	0	0	0	0
2065	0	0	0	0	0	0
2066	0	0	0	0	0	0
2067	0	0	0	0	0	0
2068	0	0	0	0	0	0
2069	0	0	0	0	0	0
2070	0	0	0	0	0	0
2071	0	0	0	0	0	0
2072	0	0	0	0	0	0
2073	0	0	0	0	0	0
2074	0	0	0	0	0	0
2075	0	0	0	0	0	0
2076	0	0	0	0	0	0
2077	0	0	0	0	0	0
2078	0	0	0	0	0	0
2079	14,807	2,110	4	0	2,414	19,335
Totals	150,791	71,898	4	0	8,453	231,146

Table 2
DECON Unit 2
Decommissioning After 60 Year Operation

Vogtle Electric Generating Plant
2021 Escalation Analysis

ESCALATION ANALYSIS OF CASHFLOWS

Source Documentation:	Decommissioning Cost Analysis for the Vogtle Electric Generating Plant
Source Document Number:	S18-1791-002 Rev. 1
Unit Identification	[Summation of Unit 1 and Unit 2 values]
Estimate basis year:	Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant Station
Decommissioning Scenario:	2021
Operating Lifetime	DECON
	Decommissioning After 60 Year Operation

Single Value Escalation % by Major Cost Categories			
Single value escalations:			
Cost Category	Single-value Yearly Escal.	Total Costs	
		2021 \$	Escalated \$
Total Costs	2.586%	1,931,905	4,535,600
License Termination Costs	2.700%	1,375,442	3,156,885
Spent Fuel Management Costs	2.454%	371,110	962,973
Site Restoration Costs	2.228%	185,353	415,739
Labor Costs	2.767%	1,115,458	2,751,505
Equipment & Material Costs	1.219%	385,615	571,259
Energy Costs	1.847%	9,769	16,818
LLRW Disposal Costs	3.283%	207,183	568,375
Other Costs	2.808%	213,880	627,645

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant Station							
DECON Cash Flows by Category - Decommissioning After 60 Year Operation							
Total Costs - Thousands of Year of Expenditure Dollars							
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other		Yearly Totals
2047	147,987	18,231	1,251	85	59,805		227,359
2048	166,864	46,890	1,966	41,246	19,570		276,536
2049	288,805	66,059	2,501	73,607	51,966		482,938
2050	300,677	71,906	3,180	90,142	36,987		502,892
2051	293,952	71,858	2,402	119,745	37,684		525,641
2052	277,665	58,144	2,025	99,536	47,720		485,090
2053	190,792	31,152	1,104	53,030	19,534		295,612
2054	176,979	29,830	917	45,289	28,635		281,650
2055	186,599	13,158	604	7,118	14,984		222,463
2056	91,501	43,335	313	0	6,108		141,257
2057	93,714	43,764	318	0	6,258		144,054
2058	68,608	29,950	211	0	5,659		104,428
2059	16,239	1,276	0	0	4,332		21,847
2060	16,592	1,077	0	0	4,463		22,132
2061	17,129	1,309	0	0	4,572		23,010
2062	17,457	1,105	0	0	4,698		23,260
2063	18,070	1,342	0	0	4,826		24,238
2064	18,465	1,133	0	0	4,972		24,570
2065	19,063	1,377	0	0	5,095		25,535
2066	19,428	1,162	0	0	5,235		25,825
2067	20,112	1,412	0	0	5,379		26,903
2068	20,554	1,191	0	0	5,542		27,287
2069	21,221	1,448	0	0	5,679		28,348
2070	21,630	1,222	0	0	5,836		28,688
2071	22,218	1,237	0	0	5,997		29,452
2072	22,526	752	0	0	6,180		29,458
2073	24,540	2,790	0	0	6,333		33,663
2074	25,207	2,826	0	0	6,508		34,541
2075	26,279	3,382	0	0	6,687		36,348
2076	27,061	3,425	0	0	6,890		37,376
2077	27,118	2,668	0	0	7,060		36,846
2078	30,153	9,590	0	0	139,350		179,093
2079	36,300	5,258	26	38,577	47,099		127,260
Totals	2,751,505	571,259	16,818	568,375	627,643		4,535,600

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant Station							
DECON Cash Flows by Category - Decommissioning After 60 Year Operation							
License Termination Costs - Thousands of Year of Expenditure Dollars							
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other		Yearly Totals
2047	141,344	7,448	1,251	85	37,920		188,048
2048	152,567	25,508	1,966	41,246	14,941		236,228
2049	270,456	37,974	2,501	73,607	44,608		429,146
2050	280,542	46,591	3,180	90,142	29,231		449,686
2051	273,655	51,208	2,402	119,745	30,142		477,152
2052	256,332	40,799	2,025	99,536	41,516		440,208
2053	170,521	19,975	1,104	53,030	15,030		259,660
2054	155,568	19,487	917	45,289	25,421		246,682
2055	168,252	9,260	596	7,118	13,799		199,025
2056	317	0	0	0	1,643		1,960
2057	324	0	0	0	1,683		2,007
2058	217	0	0	0	1,128		1,345
2059	0	0	0	0	0		0
2060	0	0	0	0	0		0
2061	0	0	0	0	0		0
2062	0	0	0	0	0		0
2063	0	0	0	0	0		0
2064	0	0	0	0	0		0
2065	0	0	0	0	0		0
2066	0	0	0	0	0		0
2067	0	0	0	0	0		0
2068	0	0	0	0	0		0
2069	0	0	0	0	0		0
2070	0	0	0	0	0		0
2071	0	0	0	0	0		0
2072	0	0	0	0	0		0
2073	0	0	0	0	0		0
2074	0	0	0	0	0		0
2075	0	0	0	0	0		0
2076	0	0	0	0	0		0
2077	0	0	0	0	0		0
2078	988	3,916	0	0	132,244		137,148
2079	6,686	1,039	18	38,577	42,270		88,590
Totals	1,877,769	263,205	15,960	568,375	431,576		3,156,885

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant Station							
DECON Cash Flows by Category - Decommissioning After 60 Year Operation							
Spent Fuel Management Costs - Thousands of Year of Expenditure Dollars							
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other		Yearly Totals
2047	5,351	10,784	0	0	21,884		38,019
2048	10,758	21,333	0	0	4,629		36,720
2049	14,329	27,977	0	0	7,357		49,663
2050	13,077	25,153	0	0	7,756		45,986
2051	10,764	20,405	0	0	7,542		38,711
2052	12,946	17,140	0	0	6,204		36,290
2053	14,648	11,050	0	0	4,504		30,202
2054	16,523	10,233	0	0	3,214		29,970
2055	15,516	2,728	8	0	1,126		19,378
2056	14,687	623	313	0	2,241		17,864
2057	15,043	629	318	0	2,296		18,286
2058	15,931	1,466	211	0	3,005		20,613
2059	16,239	1,276	0	0	4,332		21,847
2060	16,592	1,077	0	0	4,463		22,132
2061	17,129	1,309	0	0	4,572		23,010
2062	17,457	1,105	0	0	4,698		23,260
2063	18,070	1,342	0	0	4,826		24,238
2064	18,465	1,133	0	0	4,972		24,570
2065	19,063	1,377	0	0	5,095		25,535
2066	19,428	1,162	0	0	5,235		25,825
2067	20,112	1,412	0	0	5,379		26,903
2068	20,554	1,191	0	0	5,542		27,287
2069	21,221	1,448	0	0	5,679		28,348
2070	21,630	1,222	0	0	5,836		28,688
2071	22,218	1,237	0	0	5,997		29,452
2072	22,526	752	0	0	6,180		29,458
2073	24,540	2,790	0	0	6,333		33,663
2074	25,207	2,826	0	0	6,508		34,541
2075	26,279	3,382	0	0	6,687		36,348
2076	27,061	3,425	0	0	6,890		37,376
2077	27,118	2,668	0	0	7,060		36,846
2078	29,164	5,674	0	0	7,106		41,944
2079	0	0	0	0	0		0
Totals	589,646	187,329	850	0	185,148		962,973

Financial Escalation Analysis-2021 Update-Vogtle Electric Generating Plant Station							
DECON Cash Flows by Category - Decommissioning After 60 Year Operation							
Site Restoration Costs - Year of Expenditure Dollars							
Year	Labor	Equipment & Materials	Energy	LLRW Disposal	Other		Yearly Totals
2047	1,292	0	0	0	0		1,292
2048	3,539	49	0	0	0		3,588
2049	4,020	108	0	0	0		4,128
2050	7,058	162	0	0	0		7,220
2051	9,533	246	0	0	0		9,779
2052	8,386	205	0	0	0		8,591
2053	5,623	127	0	0	0		5,750
2054	4,888	109	0	0	0		4,997
2055	2,832	1,170	0	0	59		4,061
2056	76,497	42,712	0	0	2,224		121,433
2057	78,347	43,135	0	0	2,278		123,760
2058	52,460	28,484	0	0	1,526		82,470
2059	0	0	0	0	0		0
2060	0	0	0	0	0		0
2061	0	0	0	0	0		0
2062	0	0	0	0	0		0
2063	0	0	0	0	0		0
2064	0	0	0	0	0		0
2065	0	0	0	0	0		0
2066	0	0	0	0	0		0
2067	0	0	0	0	0		0
2068	0	0	0	0	0		0
2069	0	0	0	0	0		0
2070	0	0	0	0	0		0
2071	0	0	0	0	0		0
2072	0	0	0	0	0		0
2073	0	0	0	0	0		0
2074	0	0	0	0	0		0
2075	0	0	0	0	0		0
2076	0	0	0	0	0		0
2077	0	0	0	0	0		0
2078	0	0	0	0	0		0
2079	29,615	4,219	8	0	4,828		38,670
Totals	284,090	120,726	8	0	10,915		415,739

Table 3
DECON Hatch Station
Decommissioning After 60 Year Operation