



March 17, 2022

U. S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Division of Fuel Management
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, Maryland 20852-2738

Docket No.: 72-1038


**RE: SOUTH CAROLINA PUBLIC SERVICE AUTHORITY (SANTEE COOPER)
VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
10 CFR 72.30 DECOMMISSIONING FUNDING PLAN**

Dear Sir or Madam,

Pursuant to 10 CFR 72.30(b) and (c), the South Carolina Public Service Authority, submits the attached decommissioning funding plan for the Virgil C. Summer Nuclear Station (VCSNS) Independent Spent Fuel Storage Installation (ISFSI).

Please contact Marty Watson at (843) 761-7072 if you have any questions or require additional information.

Sincerely,



J. Martine Watson
Chief Power Supply Officer



Kenneth W. Lott, III
Chief Financial & Administration Officer

JMW:KWL:cmb

Attachment

Commitments made in this letter: None

cc: Mrs. Yen-Ju Chen
NRC Senior Project Manager – ISFSIs
U. S. Nuclear Regulatory Commission
Mail Stop: B34M
11545 Rockville Pike
Rockville, Maryland 20852-2738

NM5526
NM55

ATTACHMENT

Decommissioning Funding Plan for
Virgil C. Summer Nuclear Station
Independent Spent Fuel Storage Installation

Virgil C. Summer Nuclear Station
Independent Spent Fuel Storage Installation
South Carolina Public Service Authority

Decommissioning Funding Plan for Virgil C. Summer Nuclear Station
Independent Spent Fuel Storage Installation

General License under 10 CFR 72.210, Docket No. 72-1038

Pursuant to 10 CFR 72.30(b), the South Carolina Public Service Authority (Santee Cooper) submitted a decommissioning funding plan for the Virgil C. Summer Nuclear Station (VCSNS) Independent Spent Fuel Storage Installation (ISFSI) on March 18, 2019 (ADAMS Accession No. ML19077A366). 10 CFR 72.30(c) requires each holder of a license under Part 72 to submit a decommissioning funding plan at the time of license renewal and at intervals not to exceed three (3) years with adjustments as necessary to account for changes in costs and the extent of contamination. In accordance with 10 CFR 72.30(c), the information below provides Santee Cooper's periodic update to the VCSNS ISFSI decommissioning funding plan.

Pursuant to 10 CFR 72.30(b), a decommissioning funding plan must contain:

1) Information on how reasonable assurance will be provided that funds will be available to decommission the ISFSI or MRS (Monitored Retrievable Storage Installation).

Santee Cooper and Dominion Energy South Carolina (DESC) have undivided ownership interests of one-third and two-thirds respectively in VCSNS. The ISFSI decommissioning cost estimate in 2021 dollars is \$7.8 million (2019 dollars is \$7.4 million based on a cost study prepared by TLG Services, Inc). Santee Cooper's portion is \$2.6 million and DESC's portion is \$5.2 million. DESC discloses the required financial assurance information relative to its two-thirds ownership share in a separate submittal. ISFSI operations at VCSNS are in response to the Department of Energy's (DOE's) failure to remove spent nuclear fuel from the site in a timely manner. The costs for management of the spent fuel are costs for which the DOE is responsible under federal law and the Standard Contract. It is therefore expected that, once the ISFSI is no longer needed, the cost to decommission the ISFSI would be a DOE-reimbursable expense. Until such time that the costs can be recovered from the DOE, Santee Cooper will rely upon the money available in its external decommissioning trust fund and in its internal decommissioning fund to terminate the ISFSI license and release the facility for unrestricted use.

Santee Cooper maintains an external trust for funds designated to cover radiological decommissioning costs included in the NRC's definition of decommissioning pursuant to 10 CFR 50.75 (b) and (c). In addition, Santee Cooper maintains an internal fund to cover any other decommissioning costs not covered by the external trust.

In providing financial assurance pursuant to 10 CFR Part 72, Santee Cooper is predominately relying on an internal decommissioning fund. The internal decommissioning fund balance on December 31, 2021 was \$92,412,247.

Santee Cooper will continue to assess the adequacy of annual collections and adjust customer rates as appropriate based upon results of models incorporating site-specific cost study estimates. Santee Cooper hereby certifies that financial assurance for decommissioning its share of the onsite ISFSI at VCSNS has been provided in the amount of the cost estimate for decommissioning using the methodology described in the previous paragraphs.

Table 1 shows the External Trust and Internal Decommissioning Funds accumulated as of December 31, 2021 and in future dollars for VCSNS. The table shows that the funds available for ISFSI Decommissioning, Spent Fuel Management and Site Restoration exceed the ISFSI Decommissioning Cost Estimate (DCE) amount.

Table 1. External Trust and Internal Decommissioning Funds as of December 31, 2021 *(in millions of dollars)*

Unit End of License Year	External Trust Radiological Decommissionin g (12/31/2021 \$)	Internal Fund Non-Radiological Decommissionin g (12/31/2021 \$)	External Trust Radiological Decommissionin g (Future \$) ^[1]	NRC Minimu m (Future \$) ^[2]	External Trust Available ISFSI Decommissionin g, Spent Fuel Management & Site Restoration (Future \$) ^[3]	Internal Fund Available ISFSI Decommissionin g, Spent Fuel Management & Site Restoration (Future \$) ^[4]	Combined Funds Available ISFSI Decommissionin g, Spent Fuel Management & Site Restoration (Future \$) ^[5]	Combined Funds Available ISFSI Decommissionin g, Spent Fuel Management & Site Restoration (12/31/2021 \$) ^[6]	ISFSI DCE (12/31/2021 \$) ^[7]
VCSNS 2042	\$152.5	\$92.4	\$162.4	\$161.6	\$0.8	\$181.9	\$182.7	\$85.1	\$2.6

- [1] Based on 0.05% Real Rate of Return (RRoR) growth (includes \$0.4 million annual deposits) applied to funds in the External Trust for Radiological Decommissioning (12/31/2021 \$) to Start of Decommissioning.
- [2] NRC Minimum is shown at 33.33% reflecting Santee Cooper's decommissioning responsibility.
- [3] Trust Fund Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) is calculated as the difference between External Trust for Radiological Decommissioning (Future \$) and NRC Minimum (Future \$).
- [4] Internal Fund Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) is based on 0.5% RRoR growth (includes \$3.9 million annual deposits) applied to funds in the Internal Fund for Non-Radiological Decommissioning (12/31/2021 \$) to Start of Decommissioning.
- [5] Combined Funds Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) is the sum of Trust Fund Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) plus Internal Fund Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$).
- [6] Calculated as Combined Funds Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) discounted to 2021 \$ at 0.5% RRoR.
- [7] From Table 2.

Santee Cooper's Board of Directors approves all customer rates. Accordingly, Santee Cooper has the ability to recover its cost of service, including decommissioning funding, through rates. DESC maintains a site ISFSI DCE for VCSNS, which it updates approximately every five (5) years. Santee Cooper uses the site ISFSI DCE to determine decommissioning funding requirements and any needed adjustments to customer rates.

- 2) A detailed cost estimate for decommissioning, in an amount reflecting:**
- (i) The cost of an independent contractor to perform all decommissioning activities;**
 - (ii) An adequate contingency factor; and**
 - (iii) The cost of meeting the §20.1402 of this chapter criteria for unrestricted use, provided that, if the applicant or licensee can demonstrate its ability to meet the provisions of §20.1403 of this chapter, the cost estimate may be based on meeting §20.1403 criteria.**

General Methodology Used to Develop ISFSI Decommissioning Cost Estimates

A site-specific ISFSI DCE based on 10 CFR 72.30 requirements was prepared for the VCSNS ISFSI in 2019. Decommissioning is assumed to be performed by an independent contractor. As such, labor, equipment, and material costs are based on national averages, i.e., costs from national publications such as R.S. Means' Building Construction Cost Data (adjusted for regional variations), and laboratory service costs are based on vendor price lists. DESC, as licensee, will oversee the site activities. The site-specific ISFSI DCE includes Supporting Costs (for activities such as staff, security, property taxes, insurance, energy, overhead, and services) allocated to the ISFSI decommissioning period. The site-specific ISFSI DCE includes 25% contingency in accordance with NUREG-1757, "Consolidated Decommissioning Guidance," Volume 3, Revision 1. The site-specific ISFSI DCE is based on remediating the site to a residual radioactivity level consistent with 10 CFR 20.1402 (i.e., unrestricted use). As shown in Table 2, the estimated cost to decommission Santee Cooper's portion of the ISFSI at VCSNS is \$2.584 million in 2021 dollars.

Table 2. Virgil C. Summer Nuclear Station Site-Specific Cost Estimates Applicable to ISFSI Decommissioning Costs (*in thousands of dollars*)

ISFSI Decommissioning Activity Description	Removal Costs	Packaging Costs	Transport Costs	LLRW Disposal Cost	Other Costs	25% Contingency	Total (2019 \$)	Total (2021 \$)
Decommissioning Contractor								
Planning (characterization, specs, and procedures)	-	-	-	\$ 82	-	\$ 21	\$ 103	\$ 108
Decontamination (activated disposition)	\$ 39	\$ 45	\$ 119	\$ 591	-	\$ 198	\$ 992	\$ 1,043
License Termination (radiological surveys)	-	-	-	-	\$ 483	\$ 121	\$ 604	\$ 635
Subtotal	\$ 39	\$ 45	\$ 119	\$ 673	\$ 483	\$ 340	\$ 1,699	\$ 1,786
Supporting Costs								
NRC and NRC Contractor Fees and Costs	-	-	-	-	146	\$ 36	\$ 182	\$ 191
Insurance	-	-	-	-	38	\$ 9	\$ 47	\$ 49
Property Taxes	-	-	-	-	247	\$ 62	\$ 309	\$ 325
Plant Energy Budget	-	-	-	-	22	\$ 5	\$ 27	\$ 28
Non-labor Overhead	-	-	-	-	4	\$ 1	\$ 5	\$ 5
Corporate A&G Cost	-	-	-	-	9	\$ 2	\$ 11	\$ 12
Security Staff Cost	-	-	-	-	58	\$ 15	\$ 73	\$ 77
Utility Staff Cost	-	-	-	-	84	\$ 21	\$ 105	\$ 110
Subtotal	-	-	-	-	\$ 608	\$ 151	\$ 759	\$ 798
Total VCS ISFSI Decommissioning Cost	\$ 39	\$ 45	\$ 119	\$ 673	\$ 1,091	\$ 491	\$ 2,458	\$ 2,584
Annual Escalation Rate (2019\$ to 2021\$)	2.53%	Escalation Rate Based on Average of CPI-U Indices for Period Shown						
Decommissioning Cost Shown at	33.30%	Santee Cooper Decommissioning Responsibility Percentage						

Information required by 10 CFR 72.30(c)

10 CFR 72.30(c) requires updated decommissioning funding plans to specifically consider the effect of the following events on decommissioning costs;

(1) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material.

There have been no spills at the ISFSI.

(2) Facilities modifications.

There have been no facility modifications affecting the ISFSI DCE.

(3) Changes in authorized possession limits.

As stated below, the ISFSI DCE is based on ISFSI that are sized, when used in conjunction with the spent fuel pool, to accommodate the spent fuel generated over the life of the station. There have been no changes in authorized possession limits affecting the DCE.

(4) Actual remediation costs that exceed the previous cost estimate.

No actual remediation costs have been incurred.

3) Identification of and justification for using key assumptions contained in the DCE.

The DCEs for the VCSNS ISFSI assumes:

- (i) ISFSI that are sized, when used in conjunction with the spent fuel pool, to accommodate the spent fuel generated over the life of the station.
- (ii) Decommissioning will be performed by an independent contractor as required.
- (iii) Storage canisters will be used to ship the contained spent fuel to the DOE. Single purpose canisters will be qualified for shipment or transported in licensed transportation overpacks to avoid the need for repackaging and will maintain occupational exposures as low as reasonably achievable.
- (iv) A dry transfer facility will not be necessary.
- (v) The dry storage vendor, Holtec International, does not expect the overpacks to have any interior or exterior radioactive surface contamination. Any neutron activation of the steel and concrete is expected to be extremely small. The decommissioning estimate is based on the premise that some of the inner steel liners and concrete overpacks will contain low levels of neutron-induced residual radioactivity that would necessitate remediation at the time of

decommissioning. As an allowance, five (5) of the 53 Holtec overpacks are assumed to be affected, i.e., contain residual radioactivity. The allowance quantity is based upon the number of casks required for the final core off-load (i.e., 157 offloaded assemblies, 37 assemblies per cask which results in 5 overpacks). It is assumed that these are the final casks offloaded; consequently, they have the least time for radioactive decay of the neutron activation products. The dry storage vendor, Holtec International, does not expect any residual contamination to be left on the concrete ISFSI pad. It is expected that this assumption will be confirmed by radiological surveys of potentially impacted areas after each spent fuel transfer campaign. This analysis assumes that the ISFSI pad will not be contaminated. As such, only verification surveys for the pad are included in the DCE. An allowance is also included for surveying any transfer equipment.

4) A description of the method of assuring funds for decommissioning from paragraph (e) of this section, including means for adjusting cost estimates and associated funding levels periodically over the life of the facility.

Santee Cooper uses an external sinking fund method for VCSNS. The external sinking funds are based on site-specific cost estimates that include estimated ISFSI decommissioning costs. DESC updates these costs estimates approximately every five (5) years, and Santee Cooper uses the cost estimates to determine annual sinking fund deposits and any needed adjustments to customer rates. When a site-specific ISFSI Decommissioning Cost Estimate (DCE) is not performed in a reporting year, the ISFSI decommissioning funding plan will adjust the most recent site-specific ISFSI DCE using a CPI indice-based escalation rate and will consider the need for any further adjustment based on the factors in 10 CFR 72.30(c)(1) – (4).

The CPI indice annual escalation rate mnemonic is as follows:

CPI – U: Urban Consumer – All Items, (Index 1982-84=100, SA), U. S. Bureau of Labor Statistics (BLS); Moody's Analytics (ECCA) Forecast, Quarterly, United States.

5) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination.

Onsite subsurface material associated with the VCSNS ISFSI is assumed to have no residual radioactivity that will require remediation to meet the criteria for license termination. For the purpose of this cost estimate an allowance is included as

described in Section 3(v) above. The spent fuel storage casks are sealed and contain no liquid.

6) A certification that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning.

Santee Cooper certifies that financial assurance for the estimated cost of decommissioning the VCSNS ISFSI has been provided as discussed above.