



March 30, 2022

ATTN: Document Control Desk  
Director, Division of Spent Fuel Management  
Office of Nuclear Material Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555-0001

Serial No.: 22-045  
NRA/ENC: R0  
Docket No.: 72-1038

**DOMINION ENERGY SOUTH CAROLINA (DESC)**  
**VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)**  
**INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)**  
**10 CFR 72.30 DECOMMISSIONING FUNDING PLAN**

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

Please contact Ms. Erica N. Combs at (804) 273-3386 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Lawrence".

Douglas C. Lawrence  
Vice President – Nuclear Engineering & Fleet Support  
Dominion Energy South Carolina, Inc.

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

Commitments made in this letter: None

cc: Mrs. Yen-Ju Chen  
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**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  
Dominion Energy South Carolina (DESC)**

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), Dominion Energy South Carolina (DESC) 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 DESC'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].**

DESC and the South Carolina Public Service Authority (Santee Cooper) have undivided ownership interests of two-thirds and one-third 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). DESC's portion is \$5.2 million and Santee Cooper's portion is \$2.6 million. Santee Cooper discloses the required financial assurance information relative to its one-third 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, DESC will rely upon the money available in its decommissioning trust fund to terminate the ISFSI license and release the facility for unrestricted use.

DESC does not maintain separate trusts for funds designated to cover radiological decommissioning costs and funds designated to cover other decommissioning costs. Of the accumulated funds in the trust, approximately 88.69% are considered to be related to funding costs included in the NRC's definition of decommissioning pursuant

to 10 CFR 50.75(b) and (c), while the remaining 11.31% are considered to be related to other decommissioning costs. The 88.69% portion is the ratio of the total radiological decommissioning cost estimate in a 1991 site-specific cost study prepared for VCSNS to the total amount that served as the basis for collections through electric rates in an electric rate order issued by the Public Service Commission of South Carolina (SCPSC) in 1993.

In providing financial assurance pursuant to 10 CFR Part 72, DESC is relying on the 11.31% portion of the accumulated trust fund balance considered to be related to South Carolina Electric & Gas Company [DESC Letter No.19-134] decommissioning costs other than costs pursuant to 10 CFR Part 50. The total trust fund balance on December 31, 2021 was \$255,576,659. Advances of \$54,890,000 from DESC to fund premium payments have not been deducted in arriving at this amount. The 11.31% portion of the trust fund balance on December 31, 2021 was \$28,905,720. As above, advances of \$6,208,059 from DESC to fund premium payments that are considered to be applicable to this portion of the fund have not been deducted in arriving at this balance. DESC's use of decommissioning funds does not require prior approval from the SCPSC. DESC is unaware of any SCPSC requirement prohibiting the Company from using any portion of its decommissioning funds for radiological decommissioning costs.

DESC will continue to assess the adequacy of annual collections and request rate relief as appropriate based upon results of models incorporating site-specific cost study estimates. DESC 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 below shows the Total Funds and Allocated Radiological 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.** Total Funds and Allocated Radiological Funds as of December 31, 2021 *(in millions of dollars)*

| <b>Unit<br/>End of<br/>License Year</b> | <b>Total Funds<br/>in External<br/>Trusts</b><br><br>(12/31/2021 \$) | <b>Allocated<br/>Radiological<br/>Funds in<br/>External<br/>Trusts</b><br><br>(12/31/2021 \$) | <b>Allocated<br/>Non-<br/>Radiological<br/>Funds in<br/>External<br/>Trusts</b><br><br>(12/31/2021 \$) | <b>Allocated<br/>Radiological<br/>Funds in<br/>External<br/>Trusts</b><br><br>(Future \$) <sup>[1]</sup> | <b>NRC<br/>Minimum</b><br><br>(Future \$) <sup>[2]</sup> | <b>Funds Available<br/>ISFSIs<br/>Decommissioning,<br/>Spent Fuel<br/>Management &amp;<br/>Site Restoration</b><br><br>(Future \$) <sup>[3]</sup> | <b>Funds Available<br/>ISFSIs<br/>Decommissioning,<br/>Spent Fuel<br/>Management &amp;<br/>Site Restoration</b><br><br>(12/31/2021 \$) <sup>[4]</sup> | <b>ISFSIs<br/>DCE</b><br><br>(12/31/2021 \$) <sup>[5]</sup> |
|---|--|---|--|--|--|---|---|---|
| VCSNS<br>2042                           | \$255.6  | \$226.7   | \$28.9   | \$371.0  | \$323.3  | \$47.7  | \$31.5  | \$5.2   |

- [1] Based on 2% Real Rate of Return (RRoR) growth applied to Allocated Radiological Funds in External Trusts (12/31/2021) to Start of Decommissioning.
- [2] NRC Minimum is shown at 66.67% reflecting DESC's decommissioning responsibility.
- [3] Funds Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) is calculated as difference between Allocated Radiological Funds in External Trusts (Future \$) and NRC Minimum (Future \$).
- [4] Calculated as Funds Available for ISFSI Decommissioning, Spent Fuel Management & Site Restoration (Future \$) discounted to 2021 \$ at 2% RRoR.
- [5] From Table 2.

As a regulated electric utility, Dominion Energy South Carolina 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 to determine whether there is any need to adjust rates collected from ratepayers and contributed to the external sinking fund.

- 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 DESC's portion of the ISFSI at VCSNS is \$5.177 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) | -             | -   | -               | \$ 165             | -               | \$ 41           | \$ 206          | \$ 217          |
| Decontamination (activated disposition)            | \$ 78         | \$ 90   | \$ 237          | \$ 1,183           | -               | \$ 397          | \$ 1,985        | \$ 2,087        |
| License Termination (radiological surveys)         | -             | -   | -               | -                  | \$ 968          | \$ 242          | \$ 1,210        | \$ 1,272        |
| <b>Subtotal</b>                                    | <b>\$ 78</b>  | <b>\$ 90</b>  | <b>\$ 237</b>   | <b>\$ 1,348</b>    | <b>\$ 968</b>   | <b>\$ 680</b>   | <b>\$ 3,401</b> | <b>\$ 3,576</b> |
| Supporting Costs                                   |               |   |                 |                    |                 |                 |                 |                 |
| NRC and NRC Contractor Fees and Costs              | -             | -   | -               | -                  | 291             | \$ 73           | \$ 364          | \$ 383          |
| Insurance  | -             | -   | -               | -                  | 76              | \$ 19           | \$ 95           | \$ 100          |
| Property Taxes                                     | -             | -   | -               | -                  | 495             | \$ 124          | \$ 619          | \$ 651          |
| Plant Energy Budget                                | -             | -   | -               | -                  | 44              | \$ 11           | \$ 55           | \$ 58           |
| Non-labor Overhead                                 | -             | -   | -               | -                  | 7               | \$ 2            | \$ 9            | \$ 9            |
| Corporate A&G Cost                                 | -             | -   | -               | -                  | 19              | \$ 5            | \$ 24           | \$ 25           |
| Security Staff Cost                                | -             | -   | -               | -                  | 117             | \$ 29           | \$ 146          | \$ 153          |
| Utility Staff Cost                                 | -             | -   | -               | -                  | 169             | \$ 42           | \$ 211          | \$ 222          |
| <b>Subtotal</b>                                    | <b>-</b>      | <b>-</b>  | <b>-</b>        | <b>-</b>           | <b>\$ 1,218</b> | <b>\$ 305</b>   | <b>\$ 1,523</b> | <b>\$ 1,601</b> |
| <b>Total VCS ISFSI Decommissioning Cost</b>        | <b>\$ 78</b>  | <b>\$ 90</b>  | <b>\$ 237</b>   | <b>\$ 1,348</b>    | <b>\$ 2,186</b> | <b>\$ 985</b>   | <b>\$ 4,924</b> | <b>\$ 5,177</b> |
| <b>Annual Escalation Rate (2019\$ to 2021\$)</b>   | <b>2.53%</b>  | <b>Escalation Rate Based on Average of CPI-U Indices for Period Shown</b> |                 |                    |                 |                 |                 |                 |
| <b>Decommissioning Cost Shown at</b>               | <b>66.70%</b> | <b>DESC Decommissioning Responsibility Percentage</b>                     |                 |                    |                 |                 |                 |                 |



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 DCE 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.**

DESC uses an external sinking fund method for VCSNS. The external sinking fund is based on site-specific cost estimates that include estimated ISFSI decommissioning costs. DESC updates these cost estimates approximately every five (5) years to determine whether there is any need to adjust rates collected from ratepayers and contributed to the external sinking fund. 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.**

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