



December 31, 2018

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

License No. SNM-2507, 2501  
Docket No. 72-16, 72-56

**OLD DOMINION ELECTRIC COOPERATIVE**  
**NORTH ANNA POWER STATION INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS (ISFSIs)**  
**10 CFR 72.30 DECOMMISSIONING FUNDING PLAN**

Pursuant to 10 CFR 72.30(b) and (c), Old Dominion Electric Cooperative submits the attached decommissioning funding plan for the North Anna Power Station ISFSIs.

Please contact me at (804) 968-7151 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink that reads "Karen E. Huddle". The signature is written in a cursive, somewhat stylized script.

Karen E. Huddle  
Manager of Treasury Services  
Old Dominion Electric Cooperative

Attachment: North Anna Power Station Decommissioning Funds Plan for ISFSIs

Commitments made by this letter: None

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**Attachment 1**

**OLD DOMINION ELECTRIC COOPERATIVE**  
**North Anna Power Station**

**Decommissioning Funding Plan for ISFSIs**

**Old Dominion Electric Cooperative  
North Anna Power Station - ISFSIs**

**Attachment 1**

**Decommissioning Funding Plan for NAPS ISFSIs  
Specific License No. SNM-2507, 2501, Docket No. 72-16  
General License under 10 CFR 72.210, Docket No. 72-56**

Pursuant to 10 CFR 72.30(b), Old Dominion Electric Cooperative (ODEC) submitted a decommissioning funding plan for the North Anna Power Station (NAPS) Independent Spent Fuel Storage Installations (ISFSIs) on December 13, 2012 (ADAMS Accession No. ML12353A032). ODEC responded to an NRC Request for Additional Information related to this submittal on September 30, 2013 (ADAMS Accession No. ML13295A329). ODEC further submitted a Correction Notice on October 21, 2013, correcting (ADAMS Accession No. ML13296A023). The latest NAPS Decommissioning Funding Plan for the NAPS ISFSIs was submitted on December 15, 2015 (ADAMS Accession No. ML16020A001).

10 CFR 72.30(c) requires each holder of a license under Part 72 to resubmit the 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 ODEC's periodic update to the NAPS 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.**

ODEC provides financial assurance for the decommissioning of NAPS using the external sinking fund method. Collections are based on site-specific cost estimates that include radiological decommissioning, spent fuel management (including ISFSI decommissioning) and site restoration.

Table 1 below shows the Total Funds and Allocated Radiological Funds accumulated as of December 31, 2017 and in future dollars for NAPS Units 1 and 2. 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

Unit	Total Funds in External Trusts	Total Funds in External Trusts	Allocated Radiological Funds in External Trusts	Allocated Radiological Funds in External Trusts	NRC Minimum	Funds Available ISFSIs Decom, Spent Fuel Mgt & Site Restoration	ISFSIs DCE
End of License Year	(12/31/17 \$)	(Future \$) <sup>(1)</sup>	(12/31/17 \$)	(Future \$) <sup>(2)</sup>	(Future \$) <sup>(3)</sup>	(12/31/17 \$) <sup>(4)</sup>	(12/31/17 \$) <sup>(5)</sup>
North Anna Unit 1 2038	\$90.67 million	\$145.12 million	\$62.56 million	\$100.12 million	\$50.97 million	\$28.11 million	\$174,500
North Anna Unit 2 2040	\$93.14 million	\$149.07 million	\$64.26 million	\$107.83 million	\$50.97 million	\$28.88 million	

- (1) Total Funds in External Trusts (Future \$) = 2% Real Rate of Return applied to growth of funds in the External Trust to 3.5 years after Start of Decommissioning for each unit.
- (2) Allocated Radiological Funds in External Trusts (Future \$) = 2% Real Rate of Return applied to growth of funds in the External Trusts to 3.5 years after Start of Decommissioning for each unit.
- (3) NRC Minimum (Future \$) = NRC Minimum amount reflects December 31, 2017 NRC Minimum Amount due to the application of a 2% Real Rate of Return to growth of funds in the External Trusts and keeping the NRC Minimum amount constant. The NAPS NRC Minimum Amounts are presented representing ODEC's 10.74% share of responsibility for NAPS decommissioning costs<sup>1</sup>.
- (4) Funds Available for ISFSI Decommissioning, Spent Fuel Management and Site Restoration (12/31/17 \$) is calculated as the difference between Total Funds in the External Trusts (2017 \$) and the Allocated Radiological Funds in External Trusts (2017 \$).
- (5) ISFSI DCE amount as reported in Table 2 of this filing.

As a regulated electric utility, ODEC has the ability to recover its cost of service, including decommissioning funding, through rates. ODEC obtains a site specific ISFSI DCE for NAPS from Dominion Energy approximately every five years to determine whether there is any need to adjust wholesale power rates and contributions to the external sinking fund. The decommissioning cost is a fixed number in ODEC's formulary rate that requires Federal Energy Regulatory Commission approval prior to any adjustment.

<sup>1</sup> North Anna Power Station is jointly owned by Virginia Electric and Power Company (88.4%) and Old Dominion Electric Cooperative (11.6%). However, ODEC is responsible for 10.74% of the decommissioning obligation.

**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 the §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 NAPS ISFSI in 2014. The ISFSI DCE was based on the assumption that a third party contractor would perform decommissioning. To determine the cost of using a third party contractor, fully burdened labor rates (labor costs plus employee benefits and taxes) were used as a basis and a premium was added to represent a third party contractor's profit margin.

The site-specific ISFSI DCE includes undistributed costs (for support activities and costs such as staff, security, insurance, energy, materials and services) allocated to the ISFSI decommissioning period. The site-specific ISFSI DCE includes 25% contingency in accordance with NUREG-1757, Volume 3, Revision 1. Table 2 below shows the contingency as one line item.

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 below, the estimated cost to ODEC to decommission the ISFSIs at NAPS is \$168,000 in 2014 dollars (10.74% decommissioning responsibility). Applying a CPI<sup>2</sup> based annual escalation rate to the 2014 dollars shown in Table 2, the total cost to decommission the NAPS ISFSIs is \$174,500 in 2017 dollars.

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<sup>2</sup> The mnemonic for CPI-U is shown under Item 4.

**Table 2**

North Anna Power Station							
Site Specific Cost Estimates Applicable to ISFSI Decommissioning Costs - 10 CFR 72.30							
(in thousands of dollars)							
ISFSI Decommissioning Activity Description	Labor	Equipment	Disposal	Other	25% Contingency	Total 2014 \$	Total 2017 \$
<b>Distributed (Direct) Cost</b>							
Preparation and NRC Review of License Termination Plan	\$10.5	\$ -	\$ -	\$16.6	\$ -	\$ 27.1	\$ 28.1
Verification Survey of Horizontal Storage Modules	\$14.1	\$6.8	\$ -	\$ -	\$ -	\$ 20.9	\$ 21.7
Preparation of Final Report on Decommissioning and NRC Review	\$10.5	\$ -	\$ -	\$16.5	\$ -	\$ 27.0	\$ 28.1
<b>Total Distributed (Direct) Cost</b>	<b>\$35.1</b>	<b>\$6.8</b>	<b>\$ -</b>	<b>\$33.1</b>	<b>\$ -</b>	<b>\$ 75.0</b>	<b>\$ 77.9</b>
<b>Total Undistributed (Allocated) Cost</b>							
	\$38.9	\$1.6	\$ -	\$18.9	\$ -	\$ 59.4	\$ 61.7
<b>Total North Anna ISFSI Decommissioning Cost</b>	<b>\$74.0</b>	<b>\$8.4</b>	<b>\$ -</b>	<b>\$52.0</b>	<b>\$ -</b>	<b>\$134.4</b>	<b>\$139.6</b>
<b>25% Contingency Applied to Total North Anna ISFSI Decommissioning Cost Estimate</b>					\$33.6	\$ 33.6	\$ 34.9
<b>Total North Anna ISFSI Decommissioning Cost Estimate with Contingency</b>						<b>\$168.0</b>	<b>\$174.5</b>
<b>Annual Escalation Rate (2014\$ to 2017\$)</b>	1.27%	Escalation Rate based on average of CPI-U indices for period shown					
<b>Decommissioning Cost shown at</b>	10.74%	ODEC Decommissioning Responsibility Percentage					

**Information Required by 10 CFR 72.30(c)**

10 CFR 72.30 (c) requires the updated decommissioning funding plan 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 reported spills at the ISFSI.

**(2) Facility 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 ISFSIs 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 are 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 the key assumptions contained in the DCE**

The DCE for the NAPS ISFSIs assumes:

- i. ISFSIs 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 Department of Energy. 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 ISFSI pads and support modules are assumed to be free of contamination and left in place.

**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.**

ODEC uses an external sinking fund method for NAPS. The external sinking fund is based on site-specific cost estimates that include estimated ISFSI decommissioning costs. ODEC obtains these cost estimates from Dominion Energy approximately every five years to determine whether there is any need to adjust wholesale power rates and contributions to the external sinking fund. The ISFSI decommissioning funding plan periodically submitted pursuant to 10 CFR 72.30 (c) will further 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 NAPS ISFSIs is assumed to have no residual radioactivity that will require remediation to meet the criteria for license termination. 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.**

ODEC certifies that financial assurance for the estimated cost of decommissioning the NAPS ISFSIs has been provided as discussed above.