ATTACHMENT V – POST-CLOSURE PLAN

POST-CLOSURE PLAN

Bremo Bluff FFCP Management Facility
Solid Waste Permit 627
Fluvanna County, Virginia

Prepared for:

Dominion Energy®

Dominion Energy Virginia
120 Tredegar Street
Richmond, Virginia 23219

Prepared by:
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9800 Jeb Stuart Parkway, Suite 100
Glen Allen, Virginia 23059

Schnabel Reference No. 22130437.031

November 2024

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CERTIFICATION

This Post-Closure Plan for the Bremo Bluff Fossil Fuel Combustion Products (FFCP) Management Facility (Facility) was prepared by Schnabel Engineering (Schnabel). The document and Certification/Statement of Professional Opinion are based on and limited to information that Schnabel has relied on from Dominion Energy and others, but not independently verified.

On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the Commonwealth of Virginia that this document has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the document was prepared consistent with the requirements in the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" (CCR Rule, 40 CFR §257 Subpart D) as well as the Virginia Department of Environmental Quality's Virginia Solid Waste Management Regulations (VSWMR, 9VAC20-81).

The use of the word "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

James R. DiFrancesco	Principal / Practice Leader Solid Waste
Name	Title
	November 15, 2024
Signature	Date

1.0 PURPOSE

This Post-Closure Plan (Plan) has been prepared for the Bremo Bluff Fossil Fuel Combustion Products (FFCP) Management Facility (Facility) located in Bremo Bluff, Virginia. The Facility will accept coal combustion residuals (CCR) previously generated at the Bremo Station (Station) and operate as a new, captive industrial landfill (CCR Unit) under the Virginia Department of Environmental Quality (DEQ) Solid Waste Permit (SWP) 627. Schnabel Engineering (Schnabel) has prepared this Plan on behalf of the Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy).

The Facility is subject to the post-closure requirements in the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments" (CCR Rule, 40 CFR §257 Subpart D) as well as the DEQ's Virginia Solid Waste Management Regulations (VSWMR, 9VAC20-81).

The post-closure care period will be a minimum of 30 years, as required under §257.104(c)(1) of the CCR Rule. This Plan addresses the requirements for maintaining the Facility, once closed, in a condition that will be protective of human health and the environment. Records on maintenance, observations, and analytical data during the post-closure care period shall be retained and provided in support of post-closure care termination.

1.1 Post-Closure Contact

The post-closure contact is:

Dennis Slade
120 Tredegar Street, Richmond, Virginia 23219
(804) 317-7079
dennis.a.slade@dominionenergy.com

2.0 INSPECTIONS

Inspections of the entire closed Facility will be conducted at regular intervals during the post-closure care period. Facility inspections will be conducted monthly during the first five years of post-closure and quarterly for the remainder of the post-closure period. Where feasible, inspections will coincide with quarterly and semi-annual environmental monitoring events. In addition, stormwater controls and the CCR Unit cap will be inspected after severe storm events. Attachment 1 summarizes the inspection and maintenance activities and their frequencies.

Inspection logs will be maintained by Dominion Energy and made available to the DEQ upon request. At a minimum, the inspection logs will contain the following:

1. Name of inspector
2. Date, time, and weather during inspection
3. Description of the inspection methods used
4. Results of the inspection
5. Recommendations

An example inspection log is provided in Attachment 2.

3.0 MONITORING

3.1 Water Quality Monitoring

Water quality monitoring will continue around the perimeter of the CCR Unit during disposal, closure, and post-closure periods. Post-closure monitoring includes the groundwater monitoring well network. Samples will be obtained from the specified locations on a semi-annual basis. Groundwater monitoring and reporting will be conducted in accordance with Attachment X of the Part B Permit Application (Groundwater Monitoring Plan).

3.2 Leachate Collection System

Leachate will be collected throughout the life of the Facility and will be conveyed to the leachate transfer tank before being pumped to a proposed, Dominion Energy-owned, permitted wastewater treatment facility located on the site of the former Station, in accordance with Attachment VIII of the Part B Permit Application (Leachate Management Plan). The leachate collection system will be monitored during inspections to ensure proper functioning. Additionally, the perimeter of the CCR Unit will be monitored for the presence of leachate seeps. Should a leachate seep be identified, site personnel will be notified, the seep repaired, and appropriate remedial actions taken.

3.3 Underdrain System

Post-closure monitoring includes the underdrain sampling point. Samples will be obtained from the downgradient location on a semi-annual basis. Underdrain sampling and reporting will be conducted in accordance with the Underdrain Monitoring Plan.pro

3.4 Gas Control and Monitoring

CCR by nature are non-putrescible and do not decompose or produce gas. Gas generation, migration, and odor are not anticipated to be a concern post-closure; therefore, no post-closure gas monitoring is proposed for this Facility.

4.0 MAINTENANCE

Maintenance will be performed during the post-closure care period to ensure the proper functioning of equipment to its design capacity and to ensure an acceptable level of environmental protection. The post-closure inspection and maintenance schedule, included as Attachment 1, identifies items and activities required to be inspected and maintained regularly. The preventive maintenance activities are intended to ensure proper functioning of all items.

Upon identifying a maintenance deficiency or need, appropriate measures will be taken to correct the deficiency or need as soon as practicable. The inspector will determine, based on previous experience and the nature of the application, the need for the type and extent of corrective maintenance action.

Grass mowing and general grounds-keeping will be performed as necessary to maintain an acceptable aesthetic appearance.

4.1 Security Control Devices

Security control devices, such as locks, fences, and gates, will be inspected to determine the need for maintenance, repair, or replacement on a monthly basis for the first five years and on a quarterly basis for

the remainder of the post-closure period. If lock replacement is required, security locks will be replaced immediately with a spare lock. Security fences and gates will be repaired or replaced by the selected contractor or site personnel. Temporary fence repair will be completed by site personnel as needed. Signage related to the closed status of the Facility will be maintained in a legible condition at the Facility's entrance.

4.2 Final Cover Integrity

The integrity of the final cover will be inspected, on a monthly basis for the first five years and on a quarterly basis for the remainder of the post-closure period, for erosion damage; settlement, subsidence, and displacement; bare or dead vegetative cover; and the presence of woody-stemmed vegetation. Additionally, after severe storm events, an inspection will be performed to assess any resulting erosion damage.

Erosion damage, such as rills and gullies, will be repaired when the rills or gullies are greater than 6 inches deep. The eroded area will be filled with soil capable of sustaining vegetative growth. The surface of the soil, as well as any bare areas, will then be seeded, fertilized, and mulched to re-establish vegetation.

Given the nature of compacted CCR, settlement, subsidence, and displacement are not anticipated to be significant concerns post-closure; however, in areas where settlement, subsidence, or displacement does occur, the area will typically be filled with soil and regraded to design grades. If the extent of settlement, subsidence, or displacement is greater than the settlement calculated in Attachment VI of the Part B Permit Application (Design Report), the services of a qualified engineer may be retained to evaluate the source of the problem and propose a solution. In this situation, the DEQ will be contacted. Soil used for repairs will be stockpiled on-site with appropriate erosion and sedimentation controls or imported when needed. Straw mulch or other suitable materials will also be stored on-site or imported when needed to protect exposed soil surfaces. Seed, fertilizer, and other required materials will generally be imported on an as-needed basis. Established vegetation shall be maintained by mowing at least once a year and the application of fertilizer as required to maintain a healthy stand of vegetation and to prevent the growth of wooded species or trees on the CCR Unit cap area. Woody vegetation is not allowed on the final cover system and will be removed. Final cover maintenance will be conducted as necessary, including regrading, reseeding, fertilization, liming, and mulching.

4.3 Run-On and Run-Off Controls

Stormwater run-off control systems will be inspected after severe storm events, as well as monthly for the first five years and quarterly for the remainder of the post-closure period, for observed erosion and undercutting damage, accumulated settlement, excessive or insufficient vegetation growth, and accumulated debris. Specific items to be inspected include:

- Culvert inlets for accumulated sediment or debris;
- Diversion benches for erosion, sediment buildup, and maintenance of vegetation;
- Slope drainpipes for proper anchorage, leaking joints, undercutting;
- Vegetation in other areas for proper maintenance, need of mowing;
- Perimeter stormwater channels for signs of deterioration; and,
- Drop inlet structures for integrity and accumulated sediment.
- Any temporary controls (e.g., silt fence) for proper function and sediment control.

Activities to correct or repair identified deficiencies will be initiated as soon as practicable by site operations. Additional time may be required to correct larger deficiencies. Routine maintenance for run-on and run-off control structures will typically involve the removal of sediment and debris. Heavy equipment, such as backhoes, will be used as needed, and will typically be supplied by the selected contractor. Materials will be maintained on-site for short-term repairs. Repair of structures will typically be accomplished by an outside contractor.

4.4 Leachate Collection and Leak Detection Systems

Maintenance of leachate collection and detection systems will typically consist of repairing or replacing sump pumps and cleaning out leachate forcemains, collection lines, transfer tanks, and/or pumping stations. Pump repair/replacement will be done by site personnel or outside contractors. Replacement pumps may be kept on-site to facilitate timely replacement when needed.

Cleaning of leachate forcemains, collection lines, tanks, and/or pump stations will generally be accomplished by outside contractors.

Maintenance will be based on pump performance and the monitoring of leachate quantity. If a significant reduction in flow is detected, a systematic inspection will begin at the sump and proceed to the leachate transfer tank. Repairs, cleanings, or replacements will be done as needed.

4.5 Groundwater Wells

Routine maintenance of groundwater wells, such as replacing locks and identification tags, will be done by Facility personnel or outside contractors. Other work, such as protective casing, well pad repairs, or well replacements, will be done by specialty contractors.

Wells will be replaced when damage or wear is visible, or the monitoring results indicate that the integrity of the well may have become compromised. Groundwater well inspection and repair will be conducted in accordance with the Groundwater Monitoring Plan.

5.0 POST-CLOSURE USE

After closure, the CCR Unit will be maintained as a grass-covered hill. Access to the site will be maintained but restricted. Post-closure activities will be designed and conducted in a manner that does not disturb the integrity of the final cover, the components of any containment system, or the function of the Facility's monitoring systems.

Development of the area for uses beyond dormant meadowland will be determined at the time of closure. At the time of closure, Dominion Energy may explore other safe uses for the Facility in accordance with the provisions of the VSWMR and the CCR Rule.

6.0 POST-CLOSURE COST ESTIMATE

Cost estimates for the required post-closure care activities are presented in detail in Attachment 3. As shown, the total estimated cost of the post-closure care activities over the 30-year post-closure care period is $25,442,500.

7.0 POST-CLOSURE CARE TERMINATION

At the end of the 30-year post-closure care period, Dominion Energy may submit a request to terminate post-closure care in accordance with 9VAC20-81-170.C.1 of the VSWMR. The request for termination shall include a certification, signed by Dominion Energy and a professional engineer, as well as an evaluation by a professional engineer or geologist.

Within 60 days of completion of post-closure care, a certification statement, signed by a licensed professional engineer, will be posted on a publicly accessible internet site, placed in the Facility's operating record, and submitted to the DEQ in accordance with the §257.104(e) of the CCR Rule.

ATTACHMENT 1

POST-CLOSURE INSPECTION AND MAINTENANCE SCHEDULE

Post-Closure Inspection and Maintenance Schedule
Bremo Bluff FFCP Management Facility, SWP 627

Activity	Frequency	
	Years 1-5	Years 6-30
Inspection of Perimeter Security		
Fences	Monthly	Quarterly
Signs	Monthly	Quarterly
Gates / Locks	Monthly	Quarterly
Access Road	Monthly	Quarterly
Inspection of Cap Integrity		
Cap Vegetation (Cover)	Monthly	Quarterly
Cap Erosion	Monthly*	Quarterly*
Settlement, Subsidence, and/or Displacement	Monthly	Quarterly
Leachate Outbreaks or Gas Migration Issues	Monthly	Quarterly
Animal Burrows	Monthly	Quarterly
Inspection of Monitoring and Collection Systems		
Monitoring Wells	Monthly	Quarterly
Leachate Collection System (including sumps)	Monthly	Quarterly
Stormwater Control Structures and Measures	Monthly*	Quarterly*
Benchmarks	Monthly	Quarterly
Underdrain Structures	Monthly	Quarterly
Site Repairs and Maintenance		
Perimeter Security	As Needed	
Cap Integrity	As Needed	
Monitoring Systems	As Needed	
Leachate Collection Facilities	As Needed	
Run-on and Run-off Control Structures	As Needed	
Vector and Rodent Control	As Needed	
Vegetation Mowing	As Needed**	
Monitoring		
Groundwater Monitoring	See Groundwater Monitoring Plan	
Underdrain Monitoring	See Underdrain Monitoring Plan	

* And after severe storm events
** At least once a year

ATTACHMENT 2

INSPECTION CHECKLIST TEMPLATE

MONTHLY CLOSED CCR LANDFILL/POND INSPECTION CHECKLIST

Site Name		Inspected By		
Date of Inspection		Rain in Last 2-3 days? Circle One	Yes	No

Conditions Present	No Action Required	Investigate	Request Repair	Prompt Action Required	Comments (Include information on corrective actions/routine maintenance procedures that will be implemented to address the condition and any status updates)
	Place X in Box				
Inactive/Closed Area					
Animal Burrows					
Areas of Erosion					
Erosion control features					
Drains and drain systems					
Slide, slough, bulges, seeps					
Vegetative cover damage					
Vegetative mowing needed					
Leachate and Stormwater Pond Area					
Animal Burrows					
Areas of Erosion					
Leachate System Operation					
Visible liner damage					
Outlet operation					
Vegetative mowing or removal needed					

Conditions Present	No Action Required	Investigate	Request Repair	Prompt Action Required	Comments (Include information on corrective actions/routine maintenance procedures that will be implemented to address the condition and any status updates)
	Place X in Box				
Other Areas					
Groundwater wells					
Underdrain Structures					
Evidence of spills					
Security/Access					
Trash and Debris					

Previous Conditions for "Request Repair" or "Prompt Action Required" items have been addressed and the condition returned to "No Action Required"? If no, provide date for completion in Comments box below.	Yes	No

Definitions

No Action Required	Observation indicates that landfill is operating in a normal safe condition protective of the environment. No further action is necessary.
Investigate	Observation indicates a condition that has changed from a "no action required" condition and requires investigation to determine whether condition is unsafe or not protective of the environment. Inspector will notify Operations, Engineering, or Environmental Services to investigate and/or evaluate condition further.
Request Repair	Observation indicates a condition that requires a near term repair to ensure that condition does not worsen and become a serious concern. Inspector will submit a repair ticket through their internal work order system or make contact with responsible party for repair.
Prompt Action Required	Observation indicates a condition that must be addressed immediately to ensure the safety of the surface impoundment, related facilities, or public or protection of the environment. Inspector will contact responsible site and/or corporate personnel to initiate an immediate evaluation and corrective measure, as necessary.

General Comments [Document any unusual events or conditions]:

Note: Completed inspection forms must be saved into the facility operating record and Environmental Documentum.

ATTACHMENT 3

POST-CLOSURE COST ESTIMATE

Solid Waste Disposal Facility
Cost Estimate Form, DEQ Form CE SWDF

Facility Name: Bremo Bluff FFCP Management Facility **Permit No. SWP** 627
Location Address: 2134 Bremo Road
City, State, Zip: Bremo Bluff, VA, 23022

FA Holder: VEPCO d/b/a Dominion Energy
Estimate Prepared by: Schnabel Engineering

Indicate the plan versions for which this cost estimate was prepared, identifying the following information for each plan:

Closure Plan

Title: Closure Plan
Plan Date: November 2024 **Approved:** Pending
Consultant: Schnabel Engineering

Post-Closure Plan

Title: Post-Closure Plan
Plan Date: November 2024 **Approved:** Pending
Consultant: Schnabel Engineering

Corrective Action Plan

Title: N/A
Plan Date: N/A **Approved:** N/A
Consultant: N/A

Corrective Action Monitoring Plan

Title: N/A
Plan Date: N/A **Approved:** N/A
Consultant: N/A

Cost Estimate Summary

Closure Cost Element	Total Cost	Notes
Total Closure Cost:	$14,475,934	
Total Post-Closure Cost:	$25,442,500	
Total Corrective Action Cost:	$0	
Total:	**$39,918,434**	

References: Please indicate references used to develop this cost estimate: Schnabel Engineering and private sector lab rates and current similar contractor bids from the private power and waste sectors.

CERTIFICATION BY PREPARER

This is to certify that the cost estimates pertaining to the engineering features and monitoring requirements of this solid waste management facility have been prepared by me and are representative of the design specified in the facility's Closure Plan. The estimate is based on the cost of hiring a third party and does not incorporate any salvage value that may be realized by the sale of wastes, facility structures, or equipment, land or other facility assets at the time of closure. In my professional judgment, the cost estimates are a true, correct, and complete representation of the financial liabilities for closure and postclosure care of the facility and comply with the requirements of 9 VAC 20-70 and all other DEQ rules and statutes of the Commonwealth of Virginia.

SIGNATURE: _____ DATE: 11/15/2024

NAME: Ron DiFrancesco, P.E.
TITLE: Principal / Practice Leader

Acknowledgement by Owner / Operator:

SIGNATURE: Robert W Sauer DATE: Dec 13, 2024

NAME: Robert W. Sauer
TITLE: Vice President, System Operations

Worksheet CEW-02: FORMAT FOR THE ESTIMATION OF POST-CLOSURE COSTS

Facility Name: Bremo Bluff FFCP Management Facility
Permit Number: 627
Facility Address: 2134 Bremo Road
Bremo Bluff, VA 23022
Facility Owner: Virginia Electric and Power Company d/b/a Dominion Energy Virginia
Representative Completing Format: Schnabel Engineering., Ron DiFrancesco, P.E.
Date Completed: February 8, 2024

I. Groundwater Monitoring

			Calculation or Conversion		
a. Total of monitoring wells plus underdrain	11	wells			
b. Total number of sampling events/year	2	events/yr	a x b	22	samples/yr
c. Quantity of additional samples (e.g. QA/QC)	1	samples/even	a x c	11	samples/yr
d. Total samples per year			b + c	33	samples/yr
e. Analysis unit cost (Table 3.1 constituents)	$2,500	/sample			
f. *Total Analysis cost*			d x e	*$82,500*	/yr
g. GW Monitoring unit cost	$15,000	/event			
i. *Total sampling cost*			f + (g x b)	*$112,500*	/yr
j. Engineering fees & reports	$25,000	/yr			
Yearly Groundwater Monitoring Cost			i + j	***$137,500***	***/yr***

II. Landfill Gas Monitoring, Maintenance, and Control

a. Frequency of LFG compliance monitoring	0	events/yr			
b. LFG Monitoring unit cost	$3	/event			
c. *Total perimeter LFG monitoring cost*			a x b	*$0*	/yr
d. Frequency of suface monitoring (air permit)	5	events/yr			
e. Surface monitoring unit cost	$1,500	/event			
f. *Total surface monitoring cost*			d x e	*$7,500*	/yr
g. Control system operating unit cost	$0	/yr			
h. Frequency of LFG control system inspections	0	events/yr			
i. Control system inspection cost	$0	/event			
j. *Total constrol system cost*			g + (h x i)	*$0*	/yr
Yearly Landfill Gas Monitoring, Maintenance, & Control Cost			c + f + j	***$7,500***	***/yr***

III. Leachate Management

a. Quantity of leachate generated	5,000,000	gal/yr			
On-site Leachate Management or Pre-Treatment					
b. On-site treatment operating unit cost	$0.10	/gal			
c. *Total on-site management cost*			a x b	*$500,000*	/yr
Leachate Disposal					
d. Private disposal unit cost	$0.00	/gal			
e. POTW disposal unit cost	$0.00	/gal			
f. Direct discharge to POTW unit cost	$0.00	/gal			
g. Pump & Haul unit cost	$0.00	/gal			
h. Subtotal leachate disposal unit cost			d + e + f + g	$0.00	
i. *Total leachate disposal cost*			a x h	*$0*	/yr
j. Leachate sampling & analysis unit cost	$1,250	/sample			
k. Frequency of leachate sampling & analysis	2	sample/yr			
l. *Total leachate sampling & analysis cost*			j x k	*$2,500*	/yr
Yearly Leachate Management Cost			c + i + l	***$502,500***	***/yr***

IV. Cap Maintenance & Repair

a. Closed Landfill Area	47.00	acres			
Mowing & Fertilization					
b. Mowing frequency	2	visits/yr			
c. Mowing unit cost	$500	/acre/visit			
d. *Total mowing cost*			a x b x c	*$47,000*	/yr
e. Fertilizer frequency	1	visits/yr			
f. Fertilizer unit cost	$1,500	/acre/visit	25%		
g. *Total fertilizer cost*			a x e x f	*$17,625*	/yr
Cap Erosion & Repair					
h. Area to reseed/year			25% x a	11.8	acres
i. Reseeding unit cost	$2,500	/acre			
j. *Total reseeding cost*			h x i	*$29,375*	/yr
k. Area of cap erosion/year			5% x a	2.4	acres
l. Cap erosion repair unit cost	$15,000	/acre			
m Mobilization/Demobilization	$1,500	/yr			
n. *Total cap erosion repair cost*			(k x l) + m	*$36,750*	/yr
Yearly Cap Maintenance & Repair cost			d + g + j + n	***$130,750***	***/yr***

V. Sediment Basin Maintenance & Repair

a. Sediment basin cleanout frequency, 1 per	5	years	1 / a	0.20	event/yr
b. Sediment basin cleanout unit cost	$100,000	/event			
c. Mobilization/Demobilization	$10,000	/event			
d. *Total sediment basin maintenance cost*			a x (b + c)	*$22,000*	/yr
e. Total number of stormwater sampling locations	-	locations			
f. Stormwater sampling frequency	-	events/yr			
g. Total number of stormwater samples			e x f	0	samples/yr
h. Analysis unit cost (VPDES permit parameters)	$500	/sample			
i. *Total Analysis cost*			g x h	*$0*	/yr
j. Mobilization unit cost	$250	/event			
k. Technician field unit cost	$750	/event			
l. *Total sampling cost*			f x (j + k)	*$0*	/yr
m Engineering fees & reports	$0	/yr			
n. *Total Stormwater Sampling & Analysis cost*			f + i + j	*$0*	*/yr*
Yearly Sediment Basin Maintenance & Repair			d + n	***$22,000***	***/yr***

VI. Vector & Rodent Control

a. Vector and rodent control unit cost	$1,500	/yr			
Yearly Vector and Rodent Control Cost			a	***$1,500***	***/yr***

VII. Post-Closure Care General Inspections

a. General Inspection unit cost	$7,500	/inspection			
b. Number of inspections per year	5				
Yearly Post-Closure Care General Inspection Cost			a x b	***$39,750***	***/yr***

Annual Post-Closure Care Cost (APCC)			I + … + VII	$841,500 /yr
Length of post-closure care (LPCC)	30	years		
Post-Closure Care Cost			APCC x LPCC	$25,245,000
Engineering & Documentation			Engineering Sum	$175,000
Post-Closure Care Evaluation	$150,000			
Post-Closure Care Certification	$25,000			
Cost for survey and deed notation (if not completed at time of landfill closure)	$0			
FA Mechanism Maintenance Cost	$750	/yr	FA maintenance x LPCC	$22,500
Total Post-Closure Care Cost			Post-Closure Cost + Engineering + FA Maintenance	**$25,442,500**