Attachment IV

Closure Plans for LAP and UAP

SURFACE IMPOUNDMENT CLOSURE PLAN (Rev. 2)

LOWER ASH POND
CHESTERFIELD POWER STATION
CHESTERFIELD COUNTY, VIRGINIA

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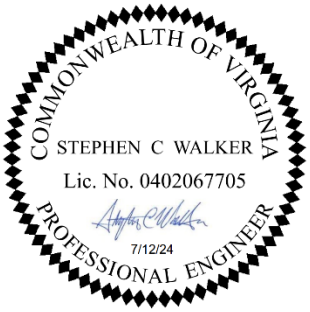
1.0 PLAN CERTIFICATION

This Closure Plan for the Lower Ash Pond (LAP) at the Chesterfield Power Station was prepared by AECOM. The document and Certification/Statement of Professional Opinion are based on and limited to information that AECOM has relied on from Dominion Energy Virginia and others, but not independently verified, as well as work products produced by AECOM.

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 §257.102 of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015, with an effective date of October 19, 2015 (40 CFR §257.102).

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.



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07/12/2024
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2.0 INTRODUCTION

Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy) owns and operates the Chesterfield Power Station (Station) located at 500 Coxendale Road in Chesterfield County, Virginia. The Station includes two Coal Combustion Residuals (CCR) surface impoundments, as well as a Fossil Fuel Combustion Products (FFCP) Management Facility operating under Virginia Department of Environmental Quality (VADEQ) Solid Waste Facility Permit No. 609, issued on June 29, 2016.

This Closure Plan was prepared for one of the Station's CCR surface impoundments, the Lower Ash Pond (LAP), and describes the design for closure of the LAP. A separate Closure Plan is being submitted for the other CCR surface impoundment, the Upper Ash Pond (UAP). This Closure Plan is being submitted to the VADEQ as part of a Part B Solid Waste Closure Permit Application (Permit Application). This Closure Plan was prepared in accordance with 40 CFR 257, Subpart D and is consistent with the requirements of 40 CFR 257.102 for closure of CCR surface impoundments and 9 VAC 20-81-800 of the Virginia Solid Waste Management Regulations (VSWMR). The LAP will be closed by removal pursuant to 40 CFR 257.102(c) and § 10.1-1402.03 of the Code of Virginia.

2.1 General LAP Information

As noted previously, there are three CCR units at the Station, the LAP, the UAP, and the FFCP Management Facility. This Closure Plan is for the LAP only. The LAP is a surface impoundment that was previously used by the Station to settle and manage low-volume wastewaters, including CCR. The LAP is currently regulated under the following permits:

- VADEQ Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0004146
- Virginia Department of Conservation and Recreation (DCR) Operation and Maintenance Certification, Inventory No. 00823

Groundwater monitoring for the LAP will transition from the VPDES permit to a DEQ solid waste permit upon issuance.

The LAP is approximately 111 acres in size. The estimated volume of CCR material in the LAP is ~~approximately 2.8 million cubic yards (MCY). The LAP is constructed of earthen dikes, at approximate~~

elevation of 18.5 feet above mean sea level (MSL). The estimated bottom of CCR material grades in the LAP are presented on LAP Drawing No. 004 (Estimated Bottom of CCR Material Plan). The maximum bottom elevation of CCR material is estimated to be approximately minus 10 feet below MSL. The estimated area of disturbance to complete the LAP closure activities is approximately 116 acres.

3.0 CLOSURE IMPLEMENTATION

3.1 Overview of Closure Approach

This Closure Plan provides for the closure of the LAP by removal of the CCR material.

Closure is considered complete under 40 CFR 257.102(c) of the CCR Rule when:

1. A Professional Engineer licensed in the Commonwealth of Virginia certifies CCR removal and decontamination, i.e., constituent removal, throughout the CCR unit and any areas affected by releases from the CCR unit; and,
2. Groundwater monitoring concentrations do not exceed the groundwater protection standards established pursuant to 40 CFR §257.95(h) for constituents listed in Appendix IV of the CCR Rule.

Closure is considered completed under The Unit's Virginia Solid Waste Permit, SWP 619, upon issuance, when:

1. A Professional Engineer licensed in the Commonwealth of Virginia certifies CCR has been removed from the CCR unit and the area within the CCR unit has been over-excavated by approximately 6 inches; and,
2. The CCR unit's downgradient groundwater monitoring wells do not exhibit levels in excess of a maximum contaminant limit (MCL) or established groundwater protection standard for any CCR Rule Appendix IV constituent after a minimum of ten sampling events have occurred after CCR material has been verified as removed by a Professional Engineer licensed in the Commonwealth of Virginia.

There is approximately 2.8 MCY of CCR material to be excavated and removed from the LAP; with allowance for over-excavation the total is approximately 2.9 MCY. All CCR material removed from the LAP will be relocated to the FFCP Management Facility, sent to an offsite permitted industrial waste landfill

for disposal, or beneficially reused offsite. The expected storage capacity of the FFCP Management Facility is 9.36 MCY for excavated ash as well as production CCR material remaining at the Station. A combination of fill material generated from future onsite activities at the Chesterfield Power Station and soil imported from offsite will be used as backfill material to complete LAP closure and site restoration activities.

Dominion Energy is proposing a phased excavation and removal plan for the purposes of managing stormwater and CCR contact water. Once the CCR material has been removed and the LAP backfilled with soil, the LAP will be graded to promote stormwater drainage and seeded to establish cover vegetation.
The final closure grades are shown on Drawing No. 005 (Final Grading Plan); profiles of the final closure grades are shown on Drawing Nos. 007 through 009, and details are provided on Drawing No. 011. The final closure grades will be established at an elevation between 10 and 15 feet above MSL around the perimeter, and then graded at 0.5% minimum upwards towards the center of the pond to approximate elevation 22 feet above MSL.

Dominion Energy's Construction Quality Assurance (CQA) representative will perform field compaction testing of the compacted and structural fill soils to verify conformance with compaction standards.

3.2 CCR Transportation Plan

Dominion Energy is planning to haul the excavated CCR from the LAP to either the Station's FFCP Management Facility or to a beneficial use loadout facility on Dominion Energy property located to the northwest of the current pond locations. The Material movement will require a rotation of trucks for CCR hauling to circulate between the LAP, the FFCP Management Facility, and the beneficial use facility for an extended duration until the project is complete. The hauling route for trucks between the LAP, the FFCP Management Facility, and the beneficial use facility involves adding truck traffic associated with the project to public roadways. Therefore, a traffic impact analysis (TIA) was performed to determine if any potential significant impacts to the existing public roadway network or projected traffic operations would result from the proposed project. A copy of the TIA is provided in Appendix A.

3.3 Contact Water Management and Treatment

Dominion Energy will ensure that contact water, including water from CCR dewatering efforts, and any other non-stormwater flows are maintained separate from non-contact stormwater during closure activities. Contact water and any other non-stormwater flows will require treatment prior to discharge. A Centralized Source Water Treatment System (CSWTS) has been constructed onsite for wastewater treatment. A Concept Engineering Report (CER) for the CSWTS was submitted to the VADEQ Water Division under the Station's existing VPDES permit and was approved by the Water Division on September 16, 2020. Treated effluent discharged from the CSWTS will meet all applicable requirements in the VPDES permit. The CSWTS is currently in operation.

For each phase of CCR excavation, Dominion Energy will install Best Management Practices (BMPs), such as lined contact water ponds, for the management of the contact water generated during CCR material excavation. Contact water ponds will be sized to contain the runoff volume from a 100-year, 24-hour storm event for the contributing drainage area (see Appendix B for calculations). Contact water ponds will be lined with 40-mil linear low-density polyethylene (LLDPE), and the liner will be anchored around the entire perimeter top of the contact water pond. For each phase, Dominion Energy will convey the contact water from the contact water pond(s) or other BMPs to a connection on the CSWTS influent pipe.

Contact water from the active excavation area will be conveyed by gravity or pumped from the active excavation area to the contact water pond(s) or other BMPs when possible. For CCR excavation below the lined pond invert, Dominion Energy will install sumps or other BMPs in each active excavation area to convey the contact water from the active excavation area to the contact water pond(s).

Dewatering of the active excavation area will also be provided to maintain safe water levels and facilitate dry excavation of the CCR material. Dominion Energy will perform dewatering and control water infiltration into the excavation area by utilizing a variety of means and methods, including rim ditching, well point systems, and installation of a low permeability cut-off wall. The cut-off wall will be installed below a seam of high transmissivity soils to limit the amount of groundwater entering the excavation area and promote *in situ* dewatering. The cut-off wall may intercept small ash deposits during installation and integrate and encapsulate them within the cementitious matrix. It is anticipated the cut-off wall will remain in place post-closure. The TRD construction drawings are included as an appendix in the Groundwater Monitoring Plan. Contact water from dewatering efforts will be conveyed to the contact water ponds or

other storage location prior to being sent to the CSWTS for treatment. Dominion Energy will provide other means of storage or management of contact water (e.g. tanks) in addition to the contact water ponds, as needed, to ensure that the discharge flow does not exceed the design capacity of the CSWTS.

3.4 Erosion and Sediment and Stormwater Controls during Closure

Currently, non-contact stormwater within the LAP site sheet-flows to ditches draining to the existing stormwater/sedimentation basin in the western portion of the LAP site. Stormwater from this basin leaves the site through an existing VPDES outfall (066) under the Station's VPDES Construction Stormwater Permit. The existing ditches and stormwater/sedimentation basin will remain in place as the removal process starts and will only be removed once additional temporary or permanent measures are implemented.

Temporary sediment and erosion control measures will be utilized throughout all phases of closure activities. The existing stormwater/sedimentation basin in the western portion of the LAP site and the proposed, temporary stormwater/sedimentation basins shown on Drawing No. 006 (Erosion and Sediment Control Plan) will be the primary stormwater and erosion and sediment (E&S) control utilized during CCR excavation and removal. Stormwater will be conveyed to the sedimentation basins by existing drainage ditches, temporary stormwater diversion berms, and/or stormwater pumping operations. The existing LAP perimeter dam will also provide stormwater/flood control for the site, as it will be maintained at its existing condition throughout the CCR excavation and removal process.

Additional E&S controls to be installed during LAP closure activities include but are not limited to dual bay truck washes, super silt fence, and a Flexible Growth Medium (FGM) or equivalent lining for slope stabilization. Details on potential E&S controls to be installed are provided on Drawings No. 006 and 011 in Attachment III of this Permit Application package. Design calculations for the E&S and stormwater controls during closure are provided in Appendix C.

4.0 CLOSURE TIMEFRAMES

Dominion Energy is closing the LAP by excavating and removing all CCR material for disposal in the FFCP Management Facility or an offsite permitted landfill, or for beneficial reuse offsite. It is anticipated that the LAP closure activities may take approximately 13 years to complete once started.

The projected timeframes for closure activities are provided in Table 4-1 below.

Table 4-1 Projected LAP Closure Timeline

Activity	Tentative Date
Commencement of CCR Removal/Closure Activities – LAP	2nd Quarter 2021
Completion of Closure (CCR Removal) - LAP	NLT March 2034

Closure is considered complete when the elements of this Closure Plan specified above have been performed as certified by a Professional Engineer licensed in the Commonwealth of Virginia. This certification will be included as part of a closure certification report. In accordance with 40 CFR 257.102(h), Dominion Energy will prepare a notification of closure of the LAP within 30 days of completion of closure and will place the notification in the operating record.

5.0 INVENTORY REMOVAL AND DISPOSAL

5.1 Waste Removal, Decontamination, and Disposal

The protocol for closure by removal of the LAP will involve removing accumulated CCR such that no residual materials remain visible, followed by over-excavating the removal footprint by a minimum of six (6) inches. Removed CCR material will be transferred to the FFCP Management Facility, an offsite permitted landfill, or to the onsite Beneficial Use Building prior to transportation offsite for beneficial reuse. To facilitate effective management of stormwater and contact water, closure by removal of areas within the LAP will be achieved in phases. The phased closures will be sequenced as necessary to support traffic patterns and other constraints, including the management of stormwater and contact water during a 100-year, 24-hour design storm event. A phased approach will also allow for documentation of certified clean areas within the excavation area that are approved for soil backfill.

In environmentally-sensitive areas outside of the defined CCR unit boundary, such as Resource Protection Areas (RPAs), groundwater monitoring well locations, or wetlands, a modified excavation protocol will be followed for removal of identified CCR. The CCR will be removed to a visually clean condition using methods that minimize impact to surrounding soils. The 6-inch over-excavation will not be performed in these areas in order to limit the impact to subgrade soils. Following CCR removal, the area will be stabilized

to prevent erosion with materials suitable for the area.

After CCR removal and certification, the LAP will be graded to promote stormwater drainage to the site's permitted stormwater outfalls. Vegetative stabilization will be established to prevent erosion. The area will be maintained as a grassy open area.

5.2 Sampling and Testing Program

After removal of the CCR material and the 6-inch over-excavation material from the LAP, the area will be visually inspected to verify the CCR removal and over-excavation has been achieved. In addition, the LAP will be further inspected by targeted soil cores, dug by hand using a hand auger or similar tool, to a depth of at least six (6) inches at a frequency of at least one core per acre.

Verification surveys of the pond closure will be prepared by a Commonwealth of Virginia licensed Land Surveyor and will consist of a survey of the "visually clean" surface and a survey of the "over-excavation" surface to verify the minimum 6-inch removal. Certification of the closure by removal will be provided by a Commonwealth of Virginia licensed Professional Engineer.

Groundwater monitoring will be conducted in accordance with the approved Groundwater Monitoring Plan to meet the closure by removal standard set forth in 40 CFR 257.102(c) and the VSWMR.

5.3 Other Areas

A 10-inch diameter water main and a fiber optic cable currently run beneath Coxendale Road and Henricus Park Road along the northern and eastern boundaries of the LAP. It is possible that CCR material may be found beneath the pavement or that the existing utilities may be located within the limits of CCR. If this occurs, Dominion Energy will expose the utility by hand-digging, ensure the utility is appropriately supported, and carefully remove any CCR material in the vicinity of the utility within the waste unit boundary.

6.0 FINAL CLOSURE AND POST-CLOSURE IMPLEMENTATION

6.1 Post-Closure Stormwater Controls

The LAP post-closure stormwater controls are shown on Drawing No. 005 (Final Grading Plan) in Attachment III of this Permit Application package. A concrete perimeter drainage ditch will be constructed around the LAP, and a concrete stormwater ditch will be constructed along Coxendale Road and Henricus Park Road, to convey stormwater runoff from the closure area to proposed stormwater outfalls in the closure area. The western stormwater outfalls will discharge to the Station's Thermal Channel to the west. The eastern stormwater outfalls will discharge to Aiken Swamp in the Dutch Gap Conservation Area. A gravel-surfaced perimeter access road will also be constructed around the LAP closure area. Design calculations for the post-closure stormwater controls are included in Appendix C.

6.2 Dam Modification

Dominion Energy will request approval to lower and then decommission the existing dam around the western, southern, and eastern sides of the LAP closure area. Plans and details for the proposed dam modification are provided on Drawing Nos. 012 and 013 in Attachment III of this Permit Application package. Therefore, once the LAP is closed, the LAP will no longer be regulated as an impounding structure by DCR.

6.3 Sign Posting

As the LAP is closing by removal, there is no requirement to post a sign prohibiting further disposal of waste as indicated in 9VAC20-81-160 D(5)(a).

6.4 Land Instruments

As the LAP is closing by removal, there is no requirement to submit a survey plat to the local land recording authority under 9VAC20-81-160 D(5)(b) or record a notation to the deed under 9VAC20-81-160 D(5)(c) and 40 CFR §257.102(i).

6.5 Certification

Within 30 days of closure completion under 40 CFR §257.102(c), a certification statement by a Professional Engineer licensed in the Commonwealth of Virginia will be placed in the operating record and posted on

Dominion Energy's publicly accessible website. The certification statement should generally read as follows:

> **I certify that the closure of the [Pond] at the Chesterfield Power Station has been completed in accordance with the Closure Plan [Date on the Closure Plan or most recent amendment] and the requirements of 40 CFR §257.102(c).**

Within 30 days of closure completion under the Unit's Virginia Solid Waste Permit (SWP 619) a certification statement by a Professional Engineer licensed in the Commonwealth of Virginia will be provided to the DEQ along with supporting documentation as required by this Plan. The certification statement should generally read as follows:

> **I certify that closure of the [Pond] at the Chesterfield Power Station has been completed in accordance with the Closure Plan [Date on the Closure Plan or most recent amendment] for solid waste permit number 619 issued to Dominion Energy, with the exception of the following discrepancies: [To Be Determined]**
>
> **[Signature, date, and stamp of Professional Engineer]**

The certification will be posted on Dominion Energy's publicly accessible internet site and placed in the operating record.

6.6 Post-Closure Use

Currently, there are no dedicated proposed land use plans for this area. A gravel-surfaced perimeter access road will be constructed around the LAP closure area. The former LAP area will be allowed to revegetate and return to a grassy open area.

7.0 CLOSURE COST ESTIMATE

The LAP closure cost estimate is estimated to be approximately $204,000,000. The estimate includes the cost of all closure construction activities, as well as costs for inspection, testing, and certification as proposed in this Plan. See Appendix D for the Closure Cost Estimate.

SURFACE IMPOUNDMENT CLOSURE PLAN (REV. 2)
UPPER ASH POND
CHESTERFIELD POWER STATION
CHESTERFIELD COUNTY, VIRGINIA

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1.0 PLAN CERTIFICATION

This Closure Plan for the Upper Ash Pond (UAP) at the Chesterfield Power Station was prepared by AECOM. The document and Certification/Statement of Professional Opinion are based on and limited to information that AECOM has relied on from Dominion Energy and others, but not independently verified, as well as work products produced by AECOM.

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 §257.102 of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015, with an effective date of October 19, 2015 (40 CFR §257.102).

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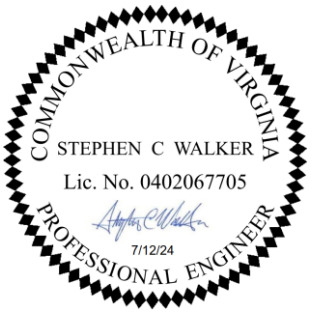

Stephen Walker
Printed Name of Professional Engineer

0402067705
Commonwealth of Virginia License No.

7/12/2024
Signature and Date

2.0 INTRODUCTION

Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion Energy) owns and operates the Chesterfield Power Station (Station) located at 500 Coxendale Road in Chesterfield County, Virginia. The Station includes two Coal Combustion Residuals (CCR) surface impoundments, as well as a Fossil Fuel Combustion Products (FFCP) Management Facility operating under Virginia Department of Environmental Quality (VADEQ) Solid Waste Facility Permit No. 609, issued on June 29, 2016.

This Closure Plan was prepared for one of the Station's CCR surface impoundments, the Upper Ash Pond (UAP), and describes the design for closure of the UAP. A separate Closure Plan is being submitted for the other CCR surface impoundment, the Lower Ash Pond (LAP). This Closure Plan is being submitted to VADEQ as part of a Part B Solid Waste Closure Permit Application (Permit Application). This Closure Plan was prepared in accordance with 40 CFR 257, Subpart D and is consistent with the requirements of 40 CFR 257.102 for closure of CCR surface impoundments and 9 VAC 20-81-800 of the Virginia Solid Waste Management Regulations (VSWMR). The UAP will be closed by removal pursuant to 40 CFR 257.102(c) and § 10.1-1402.03 of the Code of Virginia.

2.1 General UAP Information

As noted previously, there are three CCR units at the Station, the UAP, the LAP, and the FFCP Management Facility. This Closure Plan is for the UAP only. The UAP is a surface impoundment that was used by the Station to store CCR material. The UAP is currently regulated under the following permits:

- VADEQ Virginia Pollutant Discharge Elimination System (VPDES) Permit No. VA0004146
- Virginia Department of Conservation and Recreation (DCR) Operation and Maintenance Certification, Inventory No. 04145

Groundwater monitoring for the UAP will transition from the VPDES permit to DEQ solid waste permit upon issuance.

The UAP is approximately 113 acres in size. The estimated volume of CCR material in the UAP is approximately 11.8 million cubic yards (MCY). The UAP is constructed of earthen dikes, with a 20-foot minimum crest width at approximate elevation of 40 feet above mean sea level (MSL). The estimated bottom of CCR material grades in the UAP are presented on Drawing No. 004 (Estimated Bottom of CCR Material Plan). The maximum bottom elevation level of CCR material in the UAP is estimated to be minus 12 feet below MSL. The estimated area of disturbance to complete the UAP closure activities is 140 acres.

3.0 CLOSURE IMPLEMENTATION

3.1 Overview of Closure Approach

This Closure Plan provides for the closure of the UAP by removal of the CCR material. Closure is considered complete under 40 CFR 257.102(c) of the CCR Rule when:

1. A Professional Engineer licensed in the Commonwealth of Virginia certifies CCR removal and decontamination, i.e., constituent concentration removal, throughout the CCR unit and any areas affected by releases from the CCR unit; and,

2. Groundwater monitoring concentrations do not exceed the groundwater protection standards established pursuant to 40 CFR §257.95(h) for constituents listed in Appendix IV of the CCR Rule.

Closure is considered complete under the Unit's Virginia Solid Waste Permit, SWP 619, upon issuance when:

1. A Professional Engineer licensed in the Commonwealth of Virginia certifies CCR has been removed from the CCR unit and the area within the CCR unit has been over-excavated by approximately 6 inches; and,

2. The CCR unit's downgradient groundwater monitoring wells do not exhibit levels in excess of a maximum contaminant limit (MCL) or established groundwater protection standard for any CCR Rule Appendix IV constituent after a minimum of ten sampling events have occurred after CCR

material has been verified as removed by a Professional Engineer licensed in the Commonwealth of Virginia.

There is approximately 11.8 MCY of CCR material to be excavated and removed from the UAP. All CCR material removed from the UAP will be relocated to the Station's FFCP Management Facility, transported to an offsite permitted industrial waste landfill for disposal, or beneficially reused offsite. The expected storage capacity of the FFCP Management Facility is 9.36 MCY for excavated ash as well as production CCR material remaining at the Station. A combination of fill material generated from future onsite activities at the Chesterfield Power Station and soil imported from offsite will be used as backfill material to complete the UAP closure and site restoration activities.

Dominion Energy is proposing a phased excavation and removal plans for the purposes of managing stormwater and CCR contact water. Once the CCR material has been removed and the UAP backfilled with soil, the UAP will be graded to promote stormwater drainage and seeded to establish cover vegetation. The final closure grades are shown on Drawing No. 005 (Final Grading Plan); profiles of the final closure grades are shown on Drawing Nos. 007 through 009 and details are provided on Drawing No. 010. The final closure grades will be established at an elevation between 10 and 23 feet above MSL around the perimeter, and then graded at 0.5% minimum upwards towards the northern portion of the pond to approximate elevation 23 feet above MSL.

Dominion Energy's Construction Quality Assurance (CQA) representative will perform field compaction testing of the compacted and structural fill soil to verify conformance with the compaction standards.

3.2 CCR Transportation Plan

Dominion Energy is planning to haul the excavated CCR from the UAP to the Station's FFCP Management Facility or to a beneficial use loadout facility on Dominion Energy property located to the northwest of the current pond locations. Material movement will require a rotation of trucks for CCR hauling to circulate between the UAP, the FFCP Management Facility, and the beneficial use facility for an extended duration until the project is complete. The hauling route for trucks between the UAP, the FFCP Management Facility, and the beneficial use facility involves adding truck traffic associated with the project to public roadways.

Therefore, a traffic impact analysis (TIA) was performed to determine if any potential significant impacts to the existing public roadway network or projected traffic operations would result from the proposed project. A copy of the TIA is provided in Appendix A.

3.3 Contact Water Management and Treatment

Dominion Energy will ensure that contact water, including water from dewatering efforts, and any other non-stormwater flows are maintained separate from non-contact stormwater during closure activities. Contact water and any other non-stormwater flows will require treatment prior to discharge. A Centralized Source Water Treatment System (CSWTS) has been constructed onsite for wastewater treatment. A Concept Engineering Report (CER) for the CSWTS was submitted to the VADEQ Water Division under the Station's existing VPDES permit and was approved by the Water Division on September 16, 2020. Treated effluent discharged from the CSWTS will meet all applicable requirements in the VPDES permit. The CSWTS is currently in operation.

For each phase of CCR excavation and removal, Dominion Energy will install Best Management Practices (BMPs), such as lined contact water ponds, for the management of the contact water generated during CCR material excavation. Contact water ponds will be sized to contain the runoff volume from a 100-year, 24-hour storm event for the contributing drainage area (see Appendix B for calculations). Contact water ponds will be lined with 40-mil linear low-density polyethylene (LLDPE), and the liner will be anchored around the entire perimeter top of the contact water pond. For each phase, Dominion Energy will convey the contact water from the contact water pond(s) or other BMPs to a connection on the CSWTS influent pipe.

Contact water from the active excavation area will be conveyed by gravity or pumped from the active excavation area to the contact water pond(s) or other BMPs when possible. For CCR excavation below the lined pond invert, Dominion Energy will construct sumps or other BMPs in each active excavation area to convey the contact water from the active excavation area to the contact water pond(s).

Dewatering of the active excavation area will also be provided to maintain safe water levels and facilitate dry excavation of the CCR material. Contact water from dewatering efforts will be conveyed to the contact water ponds or other storage location prior to being sent to the CSWTS for treatment. Dominion Energy

will provide other means of storage or management of contact water (e.g. tanks) in addition to the contact water ponds, as needed, to ensure that the discharge flow does not exceed the design capacity of the CSWTS.

3.4 Erosion and Sediment and Stormwater Controls during Closure

Currently, non-contact stormwater within the UAP site sheet-flows from the top of the impoundment to the existing let-downs along the side slopes that discharge into ditches draining to the existing stormwater/sedimentation basin in the eastern portion of the UAP site. Stormwater from this basin leaves the site through an existing VPDES outfall (005) under the Station's VPDES permit. The existing ditches and stormwater/sedimentation basin will remain in place as the removal process starts and will only be removed once additional temporary or permanent measures are implemented.

Temporary sediment and erosion control measures will be utilized throughout all phases of closure activities. The existing stormwater/sedimentation basin in the eastern portion of the UAP site and the proposed, temporary stormwater/sedimentation basins shown on Drawing No. 006 (Erosion and Sediment Control Plan) will be the primary stormwater and erosion and sediment (E&S) control utilized during CCR excavation and removal. Stormwater will be conveyed to the sedimentation basins by existing drainage ditches, temporary stormwater diversion berms, and/or by stormwater pumping operations. The existing UAP perimeter dam will also provide stormwater/flood control for the site, as it will be maintained at its existing condition through the CCR excavation and removal process. Once the new sedimentation basins and outlets are operational, existing VPDES outfall 005 will be removed from service, prior to the excavation portion of this phase of work.

Additional E&S controls to be installed during UAP closure activities include but are not limited to dual bay truck washes, super silt fence, and a Flexible Growth Medium (FGM) or equivalent lining for slope stabilization. Locations and details are provided on Drawing Nos. 006 and 010 in Attachment III of the Permit Application package. Design calculations for the E&S and stormwater controls during closure are provided in Appendix C.

4.0 CLOSURE TIMEFRAMES

Dominion Energy is closing the UAP by excavating and removing all CCR material for disposal in the FFCP Management Facility or an offsite permitted landfill, or for beneficial reuse offsite. It is anticipated that the UAP closure activities may take approximately 13 years to complete once started.

The projected timeframes for closure activities are provided in Table 4-1 below.

Table 4-1 Projected UAP Closure Timeline

Activity	Tentative Date
Commencement of CCR Removal/Closure Activities - UAP	2nd Quarter 2021
Completion of Closure (CCR Removal) - UAP	NLT April 2034

Closure is considered complete when the elements of this Closure Plan specified above have been performed as certified by a Professional Engineer licensed in the Commonwealth of Virginia. This certification will be included as part of a closure certification report. In accordance with 40 CFR 257.102(h), Dominion Energy will prepare a notification of closure of the UAP within 30 days of completion of closure and will place the notification in the operating record.

5.0 INVENTORY REMOVAL AND DISPOSAL

5.1 Waste Removal, Decontamination, and Disposal

The protocol for closure by removal of the UAP will involve removing accumulated CCR such that no residual materials remain visible, followed by over-excavating the removal footprint by a minimum of six (6) inches. Removed CCR material will be transferred to the FFCP Management Facility, an offsite permitted landfill, or to the onsite Beneficial Use Building prior to transportation offsite for beneficial reuse. To facilitate effective management of stormwater and contact water, closure by removal of areas within the UAP will be achieved in phases. The phased closures will be sequenced as necessary to support traffic patterns and other constraints, including the management of stormwater and contact water during a 100-

year, 24-hour design storm event. A phased approach will also allow for documentation of certified clean areas within the excavation area that are approved for soil backfill.

In environmentally-sensitive areas outside of the defined CCR unit boundary, such as Resource Protection Areas (RPAs), groundwater monitoring well locations, or wetlands, a modified excavation protocol will be followed for removal of any identified CCR. The CCR will be removed to a visually clean condition using methods that minimize impact to surrounding soils. Following CCR removal, the area will be stabilized to prevent erosion with materials suitable for the area.

After CCR removal and certification, the UAP will be graded to promote stormwater drainage to the site's permitted stormwater outfalls. Vegetative stabilization will be established to prevent erosion. The area will be maintained as a grassy open area.

5.2 Sampling and Testing Program

After removal of the CCR material and the 6-inch over-excavation material from the UAP, the area will be visually inspected to verify the CCR removal and over-excavation has been achieved. In addition, the UAP will be further inspected by targeted soil cores, dug by hand using a hand auger or similar tool, to a depth of at least six (6) inches at a frequency of at least one core per acre.

Verification surveys of the pond closure will be prepared by a Commonwealth of Virginia licensed Land Surveyor and will consist of a survey of the "visually clean" surface and a survey of the "over-excavation" surface to verify the minimum 6-inch removal. Certification of the closure by removal will be provided by a Commonwealth of Virginia licensed Professional Engineer.

Groundwater monitoring will be conducted in accordance with the approved Groundwater Monitoring Plan to meet the closure by removal standard set forth in 40 CFR 257.102(c) and the VSWMR.

5.3 Other Areas

Aboveground and underground electric utilities currently run along the northern boundary of the UAP along Henricus Park Road. It is possible that CCR material may be found beneath the ground surface or that the

existing utilities may be located within the limits of CCR in some locations. If this occurs, Dominion Energy will expose the utility by hand-digging, ensure the utility is appropriately supported, and carefully remove any CCR material in the vicinity of the utility within the waste unit boundary.

6.0 FINAL CLOSURE AND POST-CLOSURE IMPLEMENTATION

6.1 Post-Closure Stormwater Controls

The UAP post-closure stormwater controls are shown on Drawing No. 005 (Final Grading Plan) in Attachment III of the Permit Application package. Several tied concrete block mat-lined stormwater conveyance channels will direct stormwater runoff from the closure area to proposed stormwater outfalls in the closure area. The west outlet and emergency spillway will discharge to the Dutch Gap Conservation Area. The middle (southern) and east outlets and emergency spillways will discharge to the Old Channel of the James River. Design calculations for the post-closure stormwater controls are included in Appendix C.

6.2 Dam Modification

Dominion Energy will request approval to lower and then decommission the existing dam around the western, southern, and eastern sides of the UAP closure area. Plan and details of the proposed dam modification are provided on Drawing Nos. 011 through 013 in Attachment III of the Permit Application package. Therefore, once the UAP is closed, the UAP will no longer be regulated as an impounding structure by DCR.

6.3 Sign Posting

As the UAP is closing by removal, there is no requirement to post a sign prohibiting further disposal of waste as indicated in 9VAC20-81-160 D(5)(a).

6.4 Land Instruments

As the UAP is closing by removal, there is no requirement to submit a survey plat to the local land recording authority under 9VAC20-81-160 D(5)(b) or record a notation to the deed under 9VAC20-81-160 D(5)(c) and 40 CFR §257.102(i).

6.5 Certification

Within 30 days of closure completion under 40 CFR §257.102(c), a certification statement by a Professional Engineer licensed in the Commonwealth of Virginia will be placed in the operating record and posted on Dominion Energy's publicly accessible website. The certification statement should generally read as follows:

> **I certify that the closure of the [Pond] at the Chesterfield Power Station has been completed in accordance with the Closure Plan [Date on the Closure Plan or most recent amendment] and the requirements of 40 CFR §257.102(c).**

Within 30 days of closure completion under the Unit's Virginia Solid Waste Permit (SWP 619) a certification statement by a Professional Engineer licensed in the Commonwealth of Virginia will be provided to the DEQ along with supporting documentation as required by this Plan. The certification statement should generally read as follows:

> **I certify that closure of the [Pond] at the Chesterfield Power Station has been completed in accordance with the Closure Plan [Date on the Closure Plan or most recent amendment] for solid waste permit number 619 issued to Dominion Energy, with the exception of the following discrepancies: [To Be Determined]**
>
> **[Signature, date, and stamp of Professional Engineer]**

The certification will be posted on Dominion Energy's publicly accessible internet site and placed in the operating record.

6.6 Post-Closure Use

There are currently no proposed dedicated land uses for this area. A gravel-surfaced perimeter access road will be constructed around the UAP closure area. The existing Henricus Park hiking trail along the southern perimeter of the UAP will be reconstructed as needed at the completion of closure activities. The former UAP area will be allowed to revegetate and return to a grassy open area.

7.0 CLOSURE COST ESTIMATE

The UAP closure cost estimate is estimated to be approximately $480,000,000. The estimate includes the cost of all closure construction activities, as well as costs for inspection, testing, and certification as proposed in this Closure Plan. See Appendix D for the Closure Cost Estimate.