Location Restrictions Documentation

Bremo Power Station
North Ash Pond

Submitted to:

Virginia Electric and Power Company d/b/a Dominion Energy Virginia
5000 Dominion Boulevard
Glen Allen, VA 23060

Submitted by:

Golder Associates Inc.
2108 West Laburnum Ave, Suite 200
Richmond, Virginia 23227

Project No. 152-0347
October 17, 2018

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1.0 CERTIFICATION

I certify that the information contained within this Location Restriction Demonstration Report was prepared by me or under my direct supervision and meets the requirements of Sections §257.60 through §257.64 of the Federal Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals (CCR) from Electric Utilities; Final Rule (40 CFR 257; the *CCR rule*). The document and Certification/Statement of Professional Opinion are based on and limited to information that Golder has relied on from Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion) and others, but not independently verified, as well as work products produced by Golder.

As used herein, the word “certification” and/or “certify” shall mean an expression of the Engineer’s professional opinion to the best of his or her information, knowledge, and belief, and does not constitute a warranty or guarantee by the Engineer.

Daniel McGrath, P.E.	Associate and Senior Consultant
Print Name	Title
Daniel McGrath	10/17/18
Signature	Date

2.0 INTRODUCTION

This Location Restriction Demonstration was prepared for the Bremo Power Station's North Ash Pond (NAP) in accordance with 40 CFR §257.60 through §257.64 (collectively – the *Location Restrictions*). The NAP is an *Existing CCR Surface Impoundment* as defined in 40 CFR §257.53. This report documents each condition in the CCR Rule and how the NAP complies or does not comply with the requirements.

2.1 North Ash Pond Background

The Station, owned and operated by Virginia Electric and Power Company d/b/a Dominion Energy Virginia (Dominion), is located in Fluvanna County at 1038 Bremo Road, east of Route 15 (James Madison Highway) and north of the James River.

The NAP construction was completed in 1983, making an approximately 67.5-acre CCR impoundment for the disposal of CCR from the Bremo Power Station. A Site Location Map is included in Appendix A. The property is located north of the James River and is in the Piedmont physiographic province of Virginia. The NAP was constructed in 1982 and 1983, in two phases. Phase I involved the construction of the embankment and spillway foundation, and Phase II involved the remainder of the embankment and spillway construction. Borrow soil was obtained from within the planned NAP ponded footprint, excavating into the natural ground.

The dike extends primarily across the mouth of a natural drainage feature and is about 1,000 feet long. The main segment of the dike is constructed over 100 feet high with slopes of 2.5H:1V, with benches on the upstream and downstream side, and a series of 6-inch toe drains at the toe of the embankment. The main dike segment abuts steep natural slopes on either side of the valley outlet to the floodplain. Additional dike segments wrap around the west side and fill in some minor low areas in the ridgeline but are generally 20 feet or less in height. The dike was designed as a zoned embankment with a core of less permeable material, and upstream and downstream shells consisting of more permeable materials. During Phase II, the remainder of the primary spillway was constructed, as well as the emergency spillway. The primary and emergency spillway systems are further discussed in Section 2.8. Historical record drawings for the phased construction of the NAP were completed in December of 1983 and are provided in Appendix B.

In 2016, the Station began consolidating CCR material from the West Ash Pond and East Ash Pond into the NAP in preparation for closure of these units. Consolidation from these units is expected to be completed in the 4th quarter of 2018.

2.2 Permitting and Construction History

The NAP embankment was constructed in 1983 as a new ash pond. No other major construction events or modifications have occurred since that time. It has been licensed under the Virginia Impounding Structure Regulations (4 VAC 50-20, Inventory Number 065020) since its design in 1982 and subsequent construction.

2.3 Location Restrictions

The location restrictions in the CCR Rule, Sections §257.60 through §257.64, require a demonstration to show compliance with each restriction. The following sections in this report address each restriction individually, and supporting documentation is included as attachments as required.

- §257.60 – Placement Above the Uppermost Aquifer

- §257.61 – Wetlands
- §257.62 – Fault Areas
- §257.63 – Seismic Impact Zones
- §257.64 – Unstable Areas

3.0 PLACEMENT ABOVE THE UPPERMOST AQUIFER

3.1 Requirement

§257.60 (a): *New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must be constructed with a base that is located no less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer, or must demonstrate that there will not be an intermittent, recurring, or sustained hydraulic connection between any portion of the base of the CCR unit and the uppermost aquifer due to normal fluctuations in groundwater elevations (including the seasonal high water table).*

3.2 Demonstration

Based on groundwater elevations obtained during the performance of background groundwater monitoring sampling events, it appears the base of the NAP is less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer and therefore, the NAP does not meet the requirement in §257.60.

4.0 WETLANDS

4.1 Requirement

§257.61 (a): *New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in § 232.2 of this chapter, unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that the CCR unit meets the requirements of paragraphs (a)(1) through (5) of this section.*

4.2 Demonstration

The NAP and surrounding areas at the Bremo Power Station were evaluated for the presence of wetlands in 2015 by Golder. Certification of the identified wetland areas on the property was provided by the U.S. Army Corps of Engineers (USCOE) on July 1, 2015. The USCOE has also further designated that any areas within the boundary of the existing CCR impoundment will not be considered jurisdictional wetlands, as the impoundments are considered “treatment units” and not subject to USCOE jurisdiction.

The NAP is not located in a wetland area, per the 2015 study. Appendix B includes the wetland approval letter with attachments showing the pond boundaries with respect to the mapped wetland areas.

5.0 FAULT AREAS

5.1 Requirement

§257.62 (a): *New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.*

5.2 Demonstration

The closest area known to have evidence of displacement in the Holocene Epoch, i.e. 12,000 years ago to present, is the Central Virginia seismic zone and is approximately 4 miles from the site (see red hatched area in figure below). The NAP is not located within 60 meters (200 feet) of the outermost damage zone of the fault system.

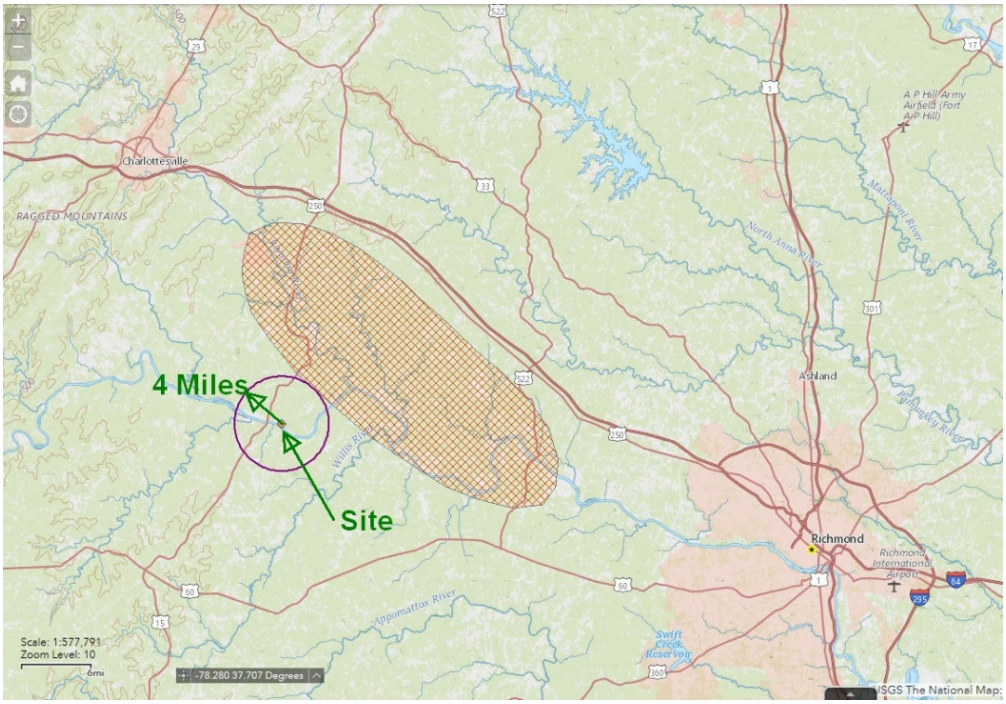


Figure 1 - Areas of Quaternary Deformation and Liquefaction, Virginia (https://viewer.nationalmap.gov/advanced-viewer/)

Geotechnical exploration and seismic stability analyses performed by Golder (Reference #5) show that the NAP embankment demonstrates satisfactory factors of safety (FS) both during and after a simulated seismic event. Permanent deformation of the NAP embankment due to the modeled seismic event was calculated to be less than one centimeter and, therefore, not a hazard. The NAP embankments and foundations are not susceptible to liquefaction; however, some portions of the CCR in the impoundment may liquefy during a seismic event, which will be addressed as part of the unit closure.

6.0 SEISMIC IMPACT ZONES

6.1 Requirement

§257.63 (a): *New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in paragraph (c) of this section that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.*

6.2 Demonstration

A seismic impact zone, as defined in the CCR Rule, means *an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g) will exceed 0.10 g in 50 years.*

Golder evaluated the site location and determined the NAP is located in a seismic impact zone. The maximum anticipated horizontal acceleration for the site, based on coordinates of 37.707° North and 78.280° West, is **0.20 g**. Figure 2 shows the mapped peak ground acceleration (pga) for the Bremo site.

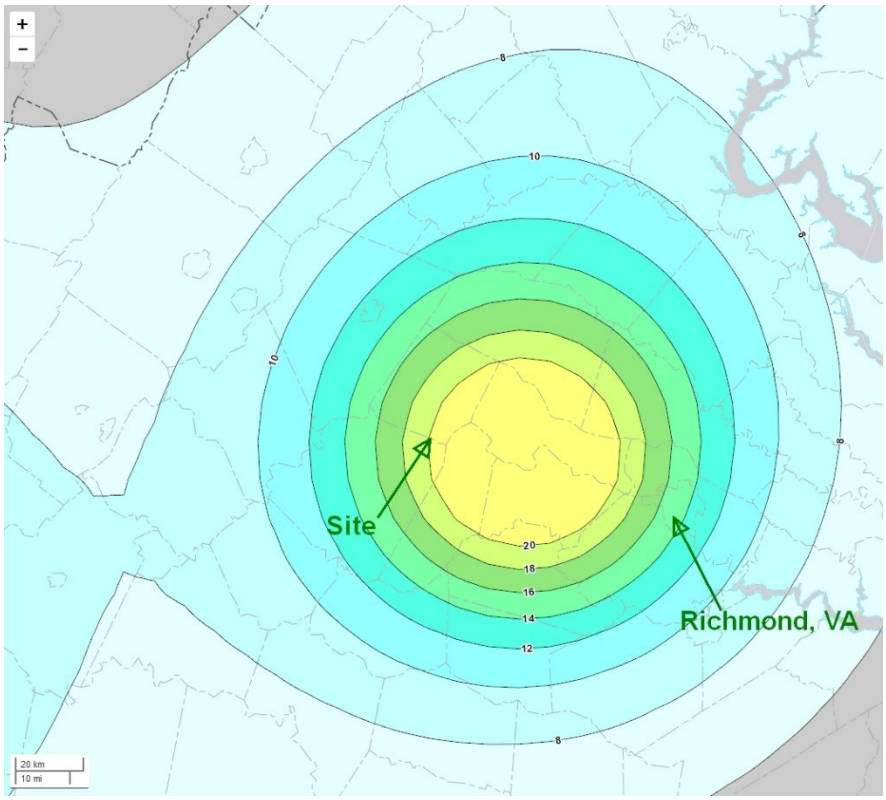


Figure 2 – Peak Ground Acceleration (% g, 2014 mapping)
(https://earthquake.usgs.gov/hazards/interactive/)

Geotechnical exploration and seismic stability analyses performed by Golder (Ref #5) show that the NAP embankment demonstrates satisfactory factors of safety (FS) both during and after a simulated seismic event with

a pga of 0.20 g. Permanent deformation of the NAP embankment due to the modeled seismic event was calculated to be less than one centimeter and, therefore, not a hazard. The NAP embankments and foundations are not susceptible to liquefaction; however, some portions of the sluiced CCR in the impoundment may liquefy during the design seismic event. Liquefaction would only occur in near-saturated conditions, which is anticipated to be well below the finished surface. As the earthquake duration is limited, breakout of ash to the surface in the form of sand boils and/or lateral spreading of surficial ash is unlikely.

7.0 UNSTABLE AREAS EVALUATION

7.1 Requirement

§257.64 (a): *An existing or new CCR landfill, existing or new CCR surface impoundment, or any lateral expansion of a CCR unit must not be located in an unstable area unless the owner or operator demonstrates by the dates specified in paragraph (d) of this section that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.*

7.2 Demonstration

Assessment of unstable areas includes an evaluation of the soil conditions at the site, which may result in significant differential settling, a review of site geologic or geomorphologic features, and consideration of human-made features on site that may cause unstable conditions. A summary of the unstable area evaluation is presented in this section.

7.2.1 *Soil Conditions*

Based on the soil boring records and geotechnical testing of soils encountered, the subsurface conditions at the NAP are expected to adequately support the earthen embankment and retained materials without significant differential settlement. The site investigations did not identify features that suggest recent landslide activities or other indicators of unstable soil conditions, such as sinkholes or significant unconsolidated materials. The embankment materials are not prone to liquefaction.

Several subsurface investigations of the Bremo site have been conducted by various engineering firms, including Golder, between 1981 and 2017. Test areas included the CCR material in the NAP and soils in the surrounding areas. The tests consisted of investigative test borings, Cone Penetrometer Tests (CPT), piezometer installations, test pits, and monitoring wells to characterize the hydrogeologic and geotechnical properties of the subsurface soils. Geotechnical test borings were advanced to various depths ranging from 25 feet to over 160 feet below grade.

The soils are predominantly derived from the deposition of weathered local parent rock material (saprolite) and are mostly clayey in nature, being derived from slate parent rock. Bremo Bluff lies in the Piedmont Physiographic Province of Virginia. The subsurface site investigations show the soils generally consist of clay-rich soils, which are underlain by weathered bedrock and finally bedrock. Bedrock under the site consists of competent gneiss and granites. Depth to bedrock varies across the site from 0 feet (exposed) to over 50 feet below grade.

7.2.2 *Differential Settlement*

Significant differential settlement is not anticipated to occur at the NAP embankment or within the impoundment area. Prior to embankment construction, existing upper soils were excavated, and the embankment was founded on stiff to very stiff sandy clays and sands, or directly on the weathered bedrock. Soils taken from the on-site borrow area were used for embankment construction. These soils consisted of sandy silts and clays along with some weathered rock, which were placed in controlled lifts and compacted. The downstream toe of the embankment is underlain by a stone and sand underdrain, providing for adequate drainage of the embankment and foundation soils.

Embankment construction was completed in 1983, and no records of significant settlement or cracking due to settlement of the embankment since that time have been discovered. Long-term settlement of the embankment

has likely occurred, and additional settlement is not anticipated. The water/CCR level in the pond was historically maintained at consistent elevations for long periods of time, providing for uniform long-term subgrade loading. As CCR materials were hydraulically sluiced into the pond, the material would be expected to slowly consolidate. This material consolidation within the pond is not anticipated to influence or cause differential settlement in the subgrade.

7.2.3 *Site Geology and Geomorphology*

The NAP is located on layers of competent clayey soils and rock, as indicated in the boring logs. It is not located in an area of karst topography, as indicated by the presence of gneiss and granitic bedrock underlying the site. The closest active fault area is the Central Virginia seismic zone, located approximately 4 miles away. The Seismic Activity Map in Section 5.2 shows the location of the site relative to the Central Virginia seismic zone.

The NAP is located approximately 1,000 feet northeast of the James River and the embankment is not located within the 100-year floodplain. The 100-year flood map for the area is included in Appendix A. Please note that the mapped 100-year floodplain shown in Appendix A is based on approximate topographic mapping performed on a regional scale, and the small areas of inundation shown are not current based on existing topography.

7.2.4 *Human-Made Features*

An evaluation of the site's history does not reveal, nor has evidence been found of, human-made conditions on site that could cause unstable conditions. Prior to the site's use by Dominion for CCR storage, the site appeared to be undeveloped woodlands. No evidence of surficial or shaft mining on the site has been encountered in either the literature or during on-site evaluations. There are no known impounding structures upstream or downstream of the site that pose inundation threat due to structure failure.

8.0 CONCLUSIONS

Golder Associates Inc. has performed an evaluation of site conditions and historical documentation in relation to requirements established in 40 CFR §257.60-64. Our evaluation shows that the Bremo Power Station North Ash Pond, as designed, constructed, and operated, meets the requirements of this regulation with one exception. Based upon the evaluation of the North Ash Pond groundwater elevations obtained during background groundwater monitoring events, it appears the base of the North Ash Pond is less than 1.52 meters (five feet) above the upper limit of the uppermost aquifer and therefore, the North Ash Pond does not meet the requirement in §257.60.

9.0 REFERENCES

Sources evaluated for this report include the following:

1. United States Geological Service (USGS) National Map Viewer – USGS Earthquake faults (https://viewer.nationalmap.gov/advanced-viewer/)

2. USGS Earthquake Hazards Program – Unified Hazard Tool (https://earthquake.usgs.gov/hazards/interactive/)

3. U.S. Army Corps of Engineers "Preliminary Jurisdictional Determination – Bremo Bluff Power Station – Coal Combustion Residual Impoundments Closures" letter, July 1, 2015

4. Soil boring logs, Cone Penetrometer Test (CPT) logs, test pit logs, and well installation logs from Golder Associates, Inc., D'Appolonia Engineering, Inc., and Schnabel Engineering

5. Golder Associates Inc., Geotechnical Design Report, Closure of the North, East and West Ash Ponds, February 2017

6. Golder Associates Inc., Groundwater Monitoring Plan – Bremo Power Station East, West and North Ash Ponds, September 2018

7. J.K. Timmons & Associates, Inc. Bremo Bluff Power Station, Ash Disposal Pond Dam Construction – Phase I, May 1982

8. J.K. Timmons & Associates, Inc. Bremo Bluff Power Station, Ash Disposal Pond Dam Construction – Phase II, November 1982 (As-Built 12-21-1983)

9. Virginia Department of Mines, Minerals and Energy (DMME) Interactive Maps (https://www.dmme.virginia.gov/webmaps/options.shtml)

10. United States Geological Service (USGS) historical topographic maps (http://historicalmaps.arcgis.com/usgs/)
    a. Palmyra Quadrangle, 1897
    b. Dillwyn Quadrangle, 1950
    c. Arvonia Quadrangle, 1968

11. USGS Historical Aerial Imagery (https://earthexplorer.usgs.gov/)
    a. April 13, 1946
    b. April 17, 1958
    c. March 30, 1967
    d. March 1, 1979

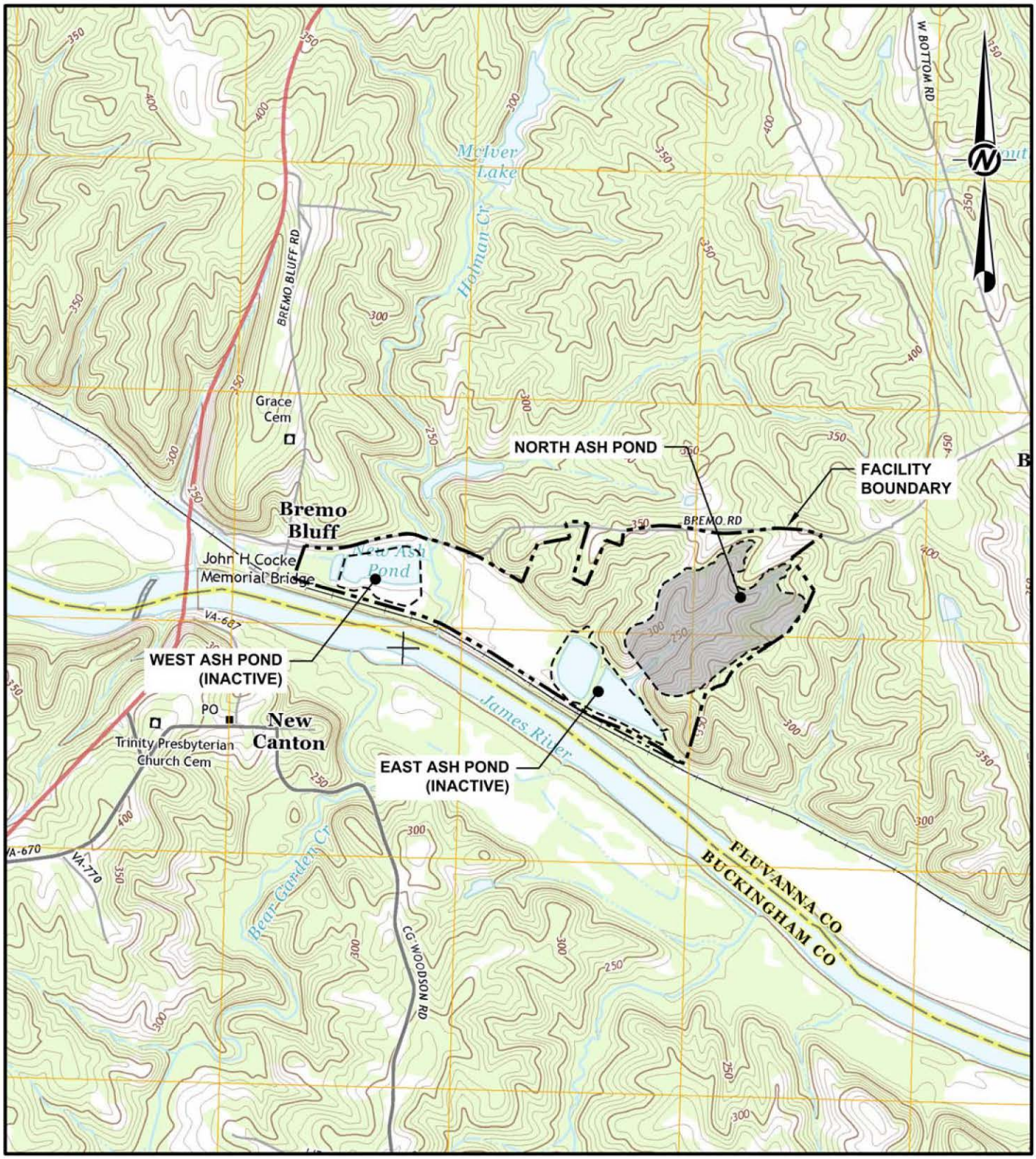
12. Google Earth (https://www.google.com/earth/)

13. Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) Viewer (https://www.fema.gov/national-flood-hazard-layer-nfhl)

APPENDIX A

FIGURE 1 – SITE LOCATION MAP

FIGURE 2 – 100-YEAR FLOOD MAP



REFERENCE

BASE MAP CONSISTS OF 7.5-MINUTE USGS TOPOGRAPHIC QUADRANGLE NAMED ARVONIA, VIRGINIA, DATED 2013.

2000 0 2000
SCALE FEET

CLIENT
DOMINION ENERGY

PROJECT
BREMO POWER STATION
FLUVANNA COUNTY, VIRGINIA

CONSULTANT
GOLDER

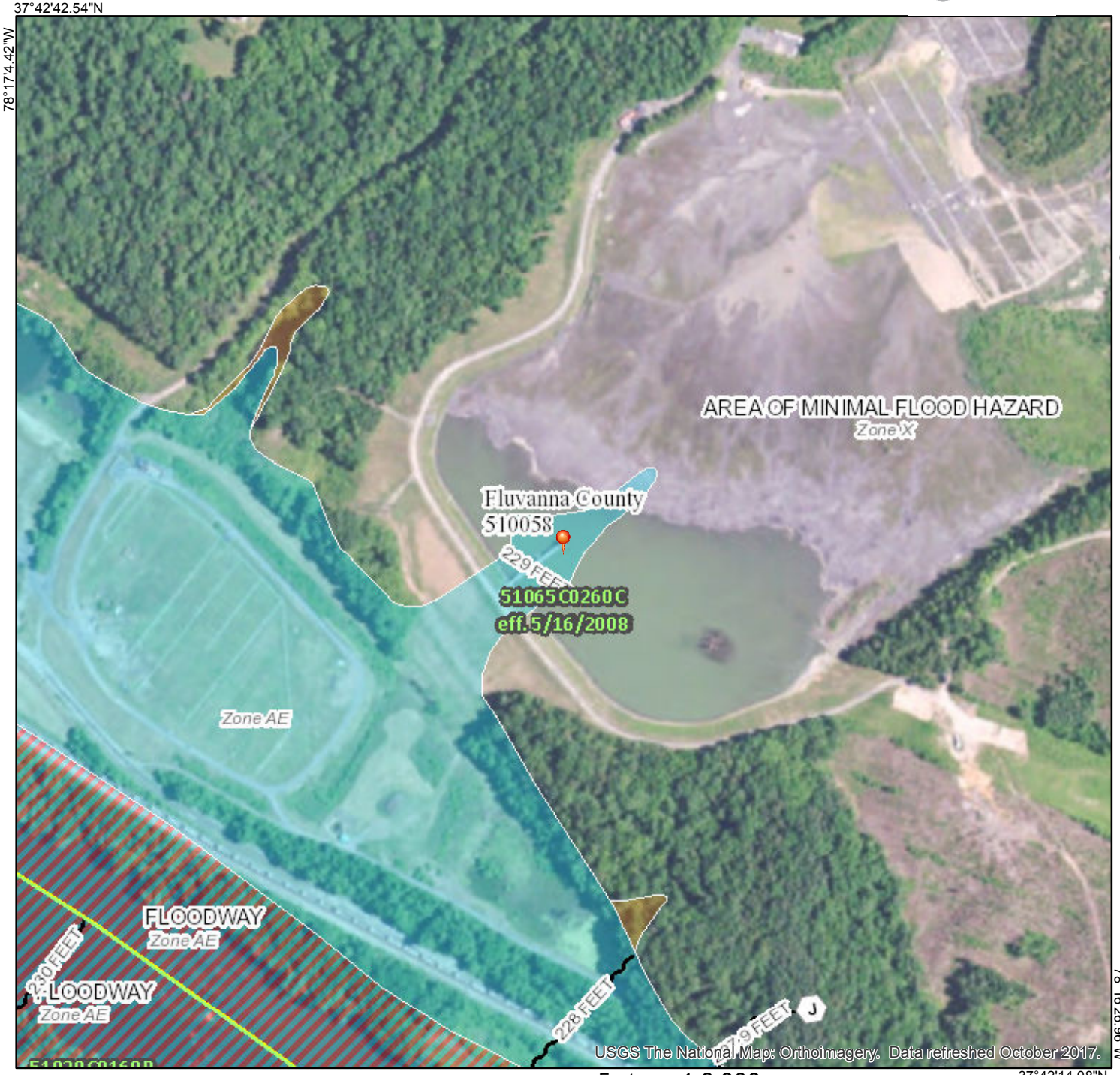
YYYY-MM-DD	2018-05-09
DESIGNED	DPM
PREPARED	BPG
REVIEWED	ATN
APPROVED	JRD

TITLE
SITE LOCATION MAP

PROJECT NO. 15-20347 | REV. 0 | FIGURE 1

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/24/2018 at 4:16:45 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Figure 2

APPENDIX B
2015 WETLAND JURISDICTIONAL DETERMINATION

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1096

Reply to
Attention of

JULY 1, 2015

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
NAO-2006-00447 (James River)

Dominion Resource Services Inc.
C/o Ms. Cathy C. Taylor
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Ms. Taylor:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on a project known as Bremo Bluff Power Plant – Coal Combustion Residual Impoundments Closures, located on an 82.7 acre parcel at The Bremo Bluff Power Station, in Fluvanna County, Virginia.

The map entitled "Dominion Bremo Power Station Pond Closure", Drawings 1 – 3 by Golder Associates, dated February 25, 2015, with a revision date of June 19, 2015 and Corps date stamped as received June 30, 2015 (*copy enclosed*) provides the locations of waters and wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual *and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the

determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to Mr. Steven VanderPloeg, either via email or via standard mail to *9100 Arboretum Parkway, Suite 235, Richmond, Virginia 23236* within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact Steven VanderPloeg at 804-323-3780 or steven.a.vanderploeg@usace.army.mil

Copies of this verification have been provided to Mr. Eric Millard, Virginia Department of Environmental Quality, Valley Regional Office; and Fluvanna County, Department of Planning and Community Development.

Sincerely,

Steven VanderPloeg
Environmental Scientist
Southern Virginia Regulatory Section

Enclosures: Preliminary Jurisdictional Determination Form; Wetland/Waters Delineation Map; Supplemental Preapplication Information

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): July 1, 2015

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Dominion Resource Services Inc.
C/o Ms. Cathy C. Taylor
5000 Dominion Boulevard
Glen Allen, Virginia 23060

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: Bremo Bluff Power Plant Combustion Residual Impoundments Closures

FILE NUMBER: NAO-2006-0447

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: Fluvanna City:

Center coordinates of site (lat/long in degree decimal format):

Latitude: 37.71167 ° N Longitude: -78.28723 ° W

Universal Transverse Mercator:

Name of nearest waterbody: James River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 4500 linear feet; 1-8 width (ft); and/or acres.

Cowardin Class: R3, R4, R6

Stream Flow:

Wetlands: > 3.0 acres

Cowardin Class: PSS, PEM, POW, PUB

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): June 4, 2015

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

3. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Golder Associates

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☒ Office concurs with data sheets/delineation report. Golder Associates

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☒ USGS 8 and 12 digit HUC maps. 02080203

☒ U.S. Geological Survey map(s). Cite scale & quad name: 1"=2,000"- Arvonia

☒ USDA Natural Resources Conservation Service Soil Survey.

Citation: COE GIS Database

☒ National wetlands inventory map(s). Cite name: COE GIS Database

☐ State/Local wetland inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date): Google Earth 2015

or ☐ Other (Name & Date):

☐ Previous determination(s):

File no. and date of response letter:

☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature
Regulatory Project Manager
(REQUIRED)

7/6/2015
Date

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

July 1, 2015
Date

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-109

REPLY TO
ATTENTION OF

JULY 1, 2015

Supplemental Preapplication Information

Project Number: NAO-2006-00447
Applicant: Dominion Virginia Power
Project Location: Fluvanna County

1. A search of the Virginia Department of Historic Resources data revealed the following:

☐ No known historic properties are located on the property.

☒ The following known architectural resources are located on the property:
- 032-5019 - Bremo Bluff Village Historic District (Current)
- 032-0174 - VEPCO Power Plant, 1038 Bremo Rd (Function/Location), Virginia Electric and Power Company (Historic)

☒ The following known archaeological resources are located on the property:
- 44FV0079 - James River Kanawha Canal
- 44FV0080 - James River Kanawha Canal

☐ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:
1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

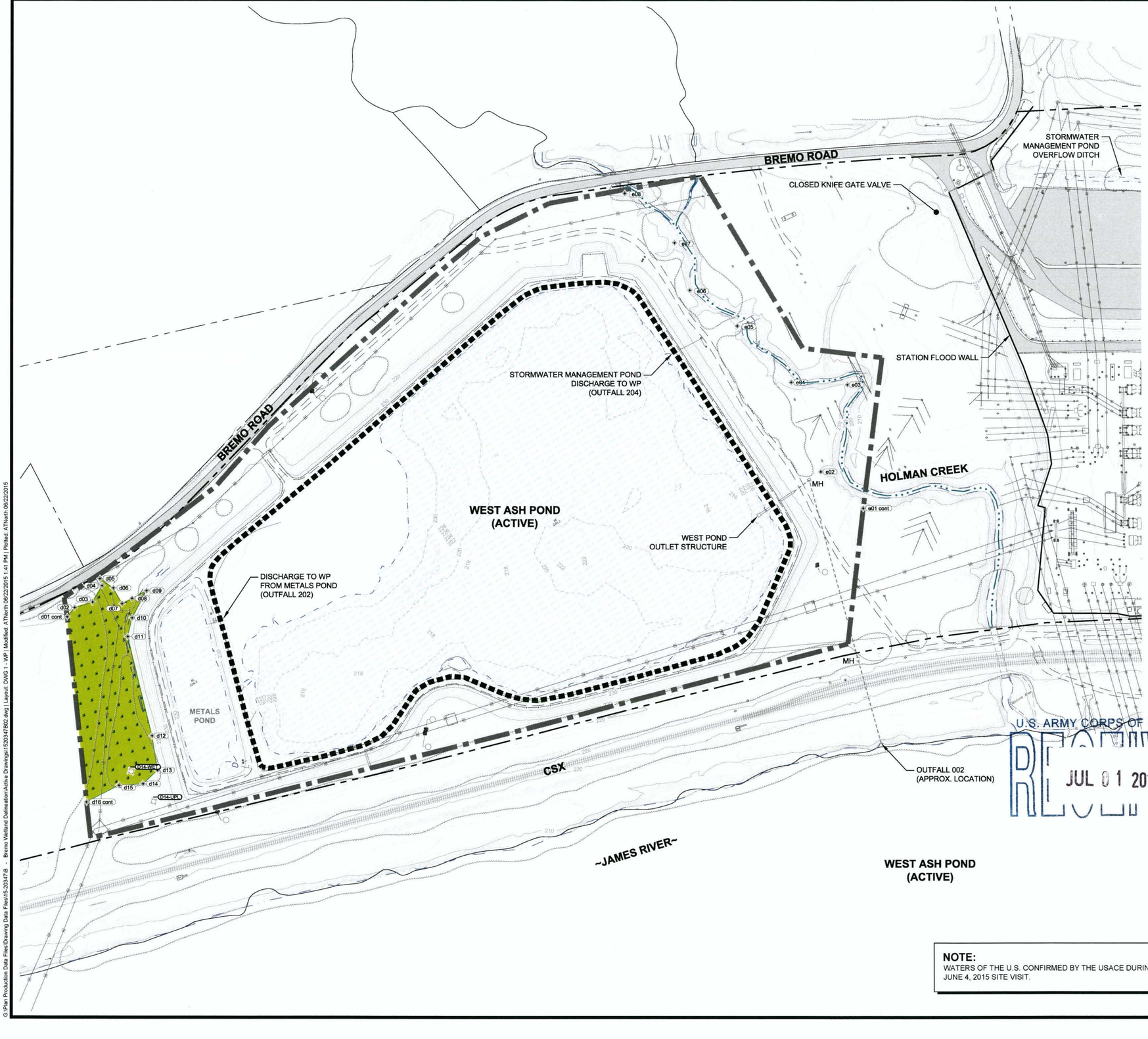
2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

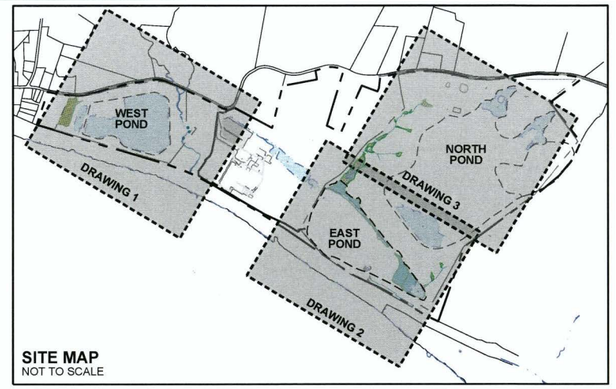
☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

☒ The following federally-listed species may occur within the vicinity of the subject property:
- Myotis septentrionalis - Northern Long-eared Bat

☒ The following state-listed (or other) species may occur within the vicinity of the subject property:
- Lasmigona subviridis – Green Floater

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.





SITE MAP
NOT TO SCALE

LEGEND

- APPROX. PROPERTY BOUNDARY (PER COUNTY GIS)
- EXISTING TOPOGRAPHY (10' CONTOUR) (PER 1/16/15 AERIAL SURVEY)
- EXISTING TOPOGRAPHY (2' CONTOUR) (PER 1/16/15 AERIAL SURVEY)
- EXISTING BATHYMETRIC SURVEY (10' CONTOUR) (PER FEBRUARY 2015 FIELD SURVEY)
- EXISTING BATHYMETRIC SURVEY (2' CONTOUR) (PER FEBRUARY 2015 FIELD SURVEY)
- OVERHEAD UTILITY LINE
- TREELINE
- TRACKS
- ASPHALT ROAD
- GRAVEL ROAD
- APPROX. LIMITS OF EXISTING ASH POND
- LIMITS OF SURFACE WATER
- FLAG ID — WETLANDS FLAG
- FORM ID — WETLAND DATA FORM LOCATION
- CENTERLINE OF STREAM
- LIMITS OF WETLAND STUDY
- PFO (FORESTED WETLAND)
- PSS (SHRUB WETLAND)
- PEM (GRASS WETLAND)
- PUB (POND, UNCONSOLIDATED BOTTOM)
- LIMITS OF SATURATION
- STANDING WATER

N

100 0 100 200
SCALE FEET

U.S. ARMY CORPS OF ENGINEERS
RECEIVED
JUL 01 2015

NOTE:
WATERS OF THE U.S. CONFIRMED BY THE USACE DURING JUNE 4, 2015 SITE VISIT.

REV	DATE	REVISION DESCRIPTION	DES	CADD	CHK	RVW
0						

PROJECT
DOMINION
BREMO POWER STATION
POND CLOSURE

TITLE
WEST POND
WETLAND DELINEATION

Golder Associates

PROJECT No.		15-20347	FILE No.	1520347B02
DESIGN	KVS	02/25/15	SCALE	AS SHOWN
CADD	ATN	02/25/15		
CHECK			**DRAWING 1**	
REVIEW				

G:\Plan Production Data Files\Drawing Data Files\15-20347B - Bremo Wetland Delineation\Active Drawings\1520347B02.dwg | Layout: DWG 1 - WP | Modified: ATNorth 06/22/2015 1:41 PM | Plotted: ATNorth 06/22/2015

MATCH LINE (SEE DRAWING 3)

NORTH POND OUTLET STRUCTURE

NORTH ASH POND (ACTIVE)

PUB

EXISTING 24" CULVERT TO STORMWATER MANAGEMENT POND

STORMWATER MANAGEMENT POND

CLOSED COAL YARD

EAST ASH POND (CLOSED)

TOE DRAIN OUTLETS

EX GROUTED RIPRAP

STATION FLOOD WALL

OUTFALL 004

FLOW

EX. POND OUTLET STRUCTURE

OUTFALL 003

FLOW

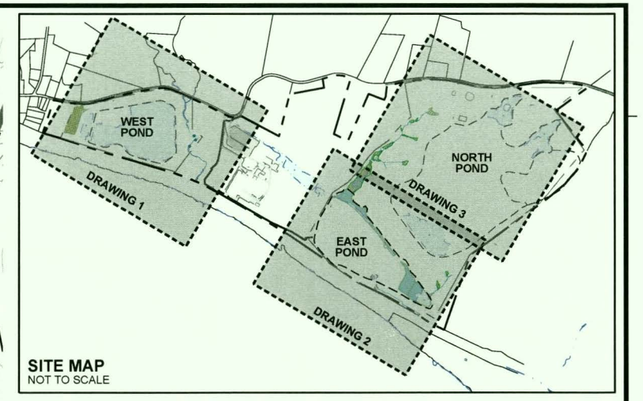
CSX

OUTFALL 006

APPROX. EX GROUTED RIPRAP OUTLET PROTECTION

APPROX. EX STONE ARCHED CULVERT

~JAMES RIVER~



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NOT TO SCALE

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U.S. ARMY CORPS OF ENGINEERS
RECEIVED
JUL 01 2015

N

100 0 100 200
SCALE FEET

NOTE:
WATERS OF THE U.S. CONFIRMED BY THE USACE DURING JUNE 4, 2015 SITE VISIT.

REV	DATE	REVISION DESCRIPTION	DES	CADD	CHK	RVW
1	6/19/15	REVISIONS PER USACE COMMENTS	KVS	ATN		

PROJECT
DOMINION
BREMO POWER STATION
POND CLOSURE

TITLE
EAST POND
WETLAND DELINEATION

Golder Associates

PROJECT No.		15-20347	FILE No.	1520347B02
DESIGN	KVS	02/25/15	SCALE	AS SHOWN
CADD	ATN	02/25/15		
CHECK			**DRAWING 2**	
REVIEW				

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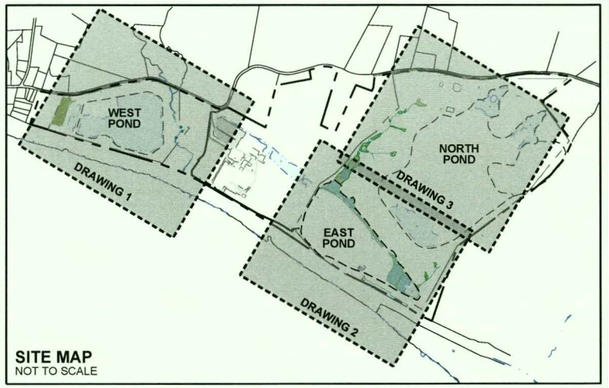
BREMO ROAD

NORTH ASH POND
(ACTIVE)

MATCH LINE (SEE DRAWING 2)



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- STANDING WATER

SCALE: 100 0 100 200 FEET

NOTE:
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REV	DATE	REVISION DESCRIPTION	DES	CADD	CHK	RVW
1	6/19/15	REVISIONS PER USACE COMMENTS	KVS	ATN		

PROJECT
DOMINION
BREMO POWER STATION
POND CLOSURE

TITLE
NORTH POND
WETLAND DELINEATION

Golder Associates

PROJECT No.		15-20347	FILE No.		1520347B02
DESIGN	DPM	02/25/15	SCALE		AS SHOWN
CADD	ATN	02/25/15	**DRAWING 3**		
CHECK					
REVIEW					

G:\Plan Production Data Files\Drawing Data Files\15-20347B - Bremo Wetland Delineation\Active Drawings\1520347B02.dwg | Layout: DWG 3 - NP | Modified: ATNorth 06/22/2015 1:41 PM | Plotted: ATNorth 06/22/2015

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