

**DEPARTMENT OF THE ARMY
Norfolk District**

**ENVIRONMENTAL ASSESSMENT, 404(B)(1) ANALYSIS, FINDING OF NO
SIGNIFICANT IMPACT (FONSI), AND STATEMENT OF FINDINGS FOR THE
PROPOSED WORK**

This permit action is being taken under authority delegated to the Norfolk District Commander by the Secretary of the Army and the Chief of Engineers by Title 33, Code of Federal Regulations, Part 325.8, pursuant to the following authorities:

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403).
- Section 404 of the Clean Water Act (33 U.S.C. §1344).
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
- Section 4(e) of the Outer Continental Shelf Lands Act of 1953.

1. Applicant/Agent, Location, Existing site conditions, Description, Delineation

A. APPLICANT: Virginia Electric and Power Company dba Dominion Virginia Power
5000 Dominion Boulevard
Glen Allen, VA 23060

B. AGENT: Same as applicant

C. WATERWAY & LOCATION: The North Anna Power Station Unit 3 project is located at the existing North Anna Power Station (NAPS) near the town of Mineral in Louisa County, Virginia and includes components in Orange, Spotsylvania, Caroline, Hanover and King William Counties. The project proposes to impact Lake Anna and the waste heat treatment facility (WHTF), both formed from an impoundment of the North Anna River and its tributaries, and multiple tributaries to Lake Anna and the WHTF. The project also includes proposed impacts in the Mattaponi River near Walkerton in King William County, Virginia.

D. LATITUDE & LONGITUDE: Latitude North: 38.0587454
(project center) Longitude West: 77.7965653

E. WATERSHED: York River HUC: 02080105 for Mattaponi
02080106 for Pamunkey

F. USGS MAP: Lake Anna West, Mineral, Buckner, Lahore, Beaverdam, Belmont, Lake Anna East, King William

G. PROPOSED WORK: The NAPS is an existing nuclear power station with the capacity

to generate 1953 megawatts of electricity from two nuclear units. In 1968, Dominion purchased 18,000 acres to provide a source of cooling water for the NAPS. By 1972, the North Anna dam was completed and the North Anna River was impounded creating the 9,600 acre Lake Anna and the adjacent 3,400 acre WHTF. The WHTF receives the cooling water from Units 1 and 2 and transfers the excess heat to the atmosphere before discharge into the main reservoir of Lake Anna. Unit 1 began commercial operation in June 1978 and Unit 2 in December 1980. The NAPS site was originally planned for four nuclear units; however, Units 3 and 4 were cancelled before construction was completed.

The applicant proposes to construct and operate a new nuclear unit, Unit 3, at the existing NAPS as an addition to the existing operational Units 1 and 2. Unit 3 will produce an estimated 1,500 megawatts of electricity. The project involves permanent impacts to waters and wetlands for the construction of excess spoil disposal fills and construction lay down areas, storm water basins, road crossings, culverts, cooling towers, water intake structure, outfalls, fills to accommodate separation of existing NAPS facilities, and the inundation of shoreline wetlands from a 3-inch water level increase in the normal pool elevations of Lake Anna and the WHTF.

The proposed cooling towers for Unit 3 will be located to the west of Units 1 and 2 on the existing NAPS facility. The footprint of the cooling tower complex is approximately 38 acres, and the grading required for construction of this complex, along with two road crossings through that portion of the facility, will result in permanent impacts to 2,572 linear feet of stream and 0.86 acres of palustrine forested wetlands.

Operation of the proposed Unit 3 will require a water intake structure that will utilize the channel originally cut for the previously planned, but not constructed, Units 3 and 4. The existing berm between Lake Anna and the intake area will be breached, and after opening the area, box culverts will be installed and rip rap stabilization placed below the water surface at the inlet and outlet of the culverts. These intake improvements and a small storm water outfall will result in permanent impacts to 0.26 acres of open water in Lake Anna.

Site separation activities will separate the support facilities for Units 1 and 2 from the proposed construction area for Unit 3 and will replace infrastructure that will be displaced by Unit 3's construction. These activities include establishment of a new paint shop, an associated storm water basin, a road crossing, and two parking lots. This work will result in permanent impacts to 0.08 acres of palustrine forested wetland and 0.36 acres of palustrine emergent wetland.

Construction of the new Unit 3 and associated facilities will result in the excavation of approximately 2 million cubic yards of spoil, and this will be disposed of on property known as the Route 700 parcels adjacent to the NAPS. This spoil disposal area will also serve as a construction lay down area to facilitate equipment, material and access during the project's construction phase. The spoil disposal and an associated road crossing in this area of the property will result in impacts to 3,808 linear feet of stream, 3.21 acres of palustrine forested

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wetland and 0.04 acres of palustrine emergent wetland.

In addition to the intake structure work, the operation of the cooling towers for Unit 3 will require water supply from Lake Anna. During the Coastal Zone Management Act (CZMA) concurrence certification, the Virginia Department of Environmental Quality (DEQ) and the Virginia Department of Game and Inland Fisheries (VDGIF) noted the potential for reduced flows to the North Anna River downstream of the Lake Anna dam as a result of this proposed water withdrawal for Unit 3 operation. To address this, an Instream Flow Incremental Methodology (IFIM) study was conducted to examine operation of Unit 3 while minimizing, to the extent practicable, impacts to the North Anna River. To offset the consumptive use and to mitigate effects on lake level and downstream flows, the normal pool elevation of Lake Anna will be raised by 3 inches, from 250.00 feet mean sea level to 250.25 feet mean sea level. The WHTF will also experience a 3-inch increase in water surface elevation above normal pool elevation, although this is dependent on the number of operating pumps for Units 1 and 2 and the outlet from the final dike. This 3-inch increase in the target pool elevation will inundate 8.14 acres of shoreline wetlands surrounding Lake Anna and the WHTF.

Temporary impacts result from the installation of a cofferdam impacting 0.51 acres of open water in Lake Anna to allow for the NAPS intake structure work to be performed in dry conditions. Temporary impacts will also occur from the construction of a roll off facility in the Mattaponi River. The roll off facility will include a filled cofferdam, shoreline and structure protection, and mooring dolphins encroaching a total of 435 feet channelward of mean high water into the Mattaponi River. The temporary impacts will be 0.18 acres of estuarine emergent wetland, 0.06 acres palustrine emergent wetland, 308 feet of the Mattaponi River shoreline, and the encroachment into the open water and submerged aquatic vegetation (SAV) beds in the Mattaponi River. The roll off facility will accommodate large component transport to Walkerton by barge and transfer to the overland Large Component Transport Route (LCTR).

The LCTR from the Mattaponi River roll off facility to the NAPS will utilize existing roads, and no discharge of fill into waters or wetlands will occur for the overland portion of the route. A temporary bridge will be constructed to span the North Anna River, and this bridge is not within the Corps' jurisdiction. Also, the transmission line that will be constructed will use an existing transmission line corridor, and no impacts to waters or wetlands will occur from the installation of the utility line.

The total proposed impacts from the project, temporary, permanent, direct and indirect, are approximately 6,688 linear feet of stream channel (308 perennial and 6,380 intermittent), 0.77 acres of open water, 12.93 acres of wetlands (4.15 palustrine forested, 0.46 palustrine emergent, 0.18 estuarine emergent, and 8.14 shoreline), and the 435-foot encroachment into the Mattaponi River for the roll off facility.

H. PROPOSED MITIGATION: To compensate for the temporary impacts to 0.18 acres of

estuarine emergent wetlands, 0.06 acres of palustrine emergent wetlands, 308 linear feet of perennial stream on the Mattaponi River shoreline, and the 435-foot encroachment into the Mattaponi River associated with the roll off facility at Walkerton, the applicant proposes to restore the impact site to pre-construction conditions upon completion of its use for component delivery. All fills and dolphins will be removed, elevations and substrate will be restored to pre-construction condition, wetland vegetation will be replanted, and SAV beds will be replanted.

Application of the Unified Stream Methodology (USM) indicates that the proposed project's 6,380 linear feet of permanent intermittent stream impact requires 7,762 compensation credits. The applicant proposes to preserve 11,775 linear feet of stream channel and associated riparian buffer for 2,138 compensation credits as determined by comparison of impact and preservation reaches using the USM. The remaining 5,624 stream credits are proposed to be purchased from an approved mitigation bank. The applicant proposes to compensate for permanent wetland and open water impacts through the purchase of wetland credits from an approved mitigation bank at a 2:1 ratio for forested wetlands and a 1:1 ratio for the remaining required wetland credits. In the event that sufficient credits are not available from an approved mitigation bank, a contribution to the Virginia Aquatic Resources Trust Fund (VARTF) will be made to satisfy compensatory mitigation requirements.

I. **WATERS AND WETLAND DELINEATION:** Multiple wetland and waters delineation confirmations and jurisdictional determinations for the project were issued by the Corps by verification letters dated September 7, 2006 (06-I0087) and renewed on 24 August, 2011 for the NAPS; August 27, 2008 for the NAPS (NAO-2008-2534); August 27, 2008 for the Route 700 Parcels (NAO-2008-2533); September 24, 2008 for the transmission line corridor (NAO-2008-2731); June 29, 2009 for the LCTR (NAO-2009-1581); and July 20, 2009 for the Lake Anna and WHTF shoreline (NAO-2009-1725).

2. **Project Purpose**

- A. **Applicant's stated purpose:** Provide additional nuclear base load generating capacity to supply the state's increasing demand for electricity consistent with U. S. Nuclear Regulatory Commission (NRC) authorization.
- B. **Basic purpose:** Provide additional base load power generating capacity.
- C. **Overall purpose:** Provide additional nuclear base load generating capacity within the Dominion electric service area to meet increasing demand.
- D. **Water Dependency Determination:** The project is not water dependent based on the basic purpose; however, the overall purpose is water dependent for both water supply and delivery of components.

3. **Scope of Analysis**

A. NEPA.

(1) Factors.

- (i) The project is not a link in a corridor type project.
- (ii) Because the NAPS already exists and is being expanded to accommodate Unit 3 and the associated infrastructure, the location and configuration of the regulated activities are relatively set. There are some jurisdictional waters and wetlands at the locations of all proposed work to complete the project, with the exception of the utility line and overland LCTR which will use existing corridors and roads.
- (iii) The utility line installation will not result in impacts to jurisdictional waters, and the overland portion of the LCTR will use existing roads resulting in no impacts to jurisdictional waters. One bridge that will be required is not within the Corps jurisdiction. For this project, the Corps scope of analysis (the work within Corps control and responsibility) includes the discharge of fill material (the footprint of the fill material) placed within the wetlands and streams as shown on the delineations, as well as upland areas directly adjacent to these fill locations, and the effect of these fills on adjacent waters, including the effect of the water level increase associated with the proposed intake structure to support the new unit's operation.
- (iv) The Nuclear Regulatory Commission (NRC) prepared an Environmental Impact Statement (EIS) for the Early Site Permit (ESP) for NAPS, and the NRC also prepared an SEIS for the Combined License (COL) application for the project. Currently, a second SEIS is being prepared for the COL based on revisions submitted to the NRC in June 2010 related to a change in reactor technology and new information regarding the heavy haul operation. These revisions to the COL are the same information submitted to the Corps' for review in the JPA, and the reactor technology aspect did not change the proposed impacts to Corps' jurisdictional areas. The completed NEPA documents are incorporated by reference into this decision document as the NRC retains greater federal authority over the construction and operation of nuclear power facilities to include a larger geographic and potential effect area than the Corps. The discharges of fill, immediately adjacent uplands, and effects of the fills on adjacent waters are regulated by the Corps for the construction and operational aspects of the proposed project.

(2) Determined scope.

- Only within the footprint of the regulated activity within the delineated water. As noted above, jurisdictional waters are present at all proposed work areas to construct and operate Unit 3, with the exception of the utility corridor and overland portion of

the LCTR which will use existing corridors and roads and avoid Corps' jurisdictional areas. Because Unit 3 is an additional unit for an existing power station, the impacts to waters are unavoidable. The new unit must accommodate the existing units' location and infrastructure to the maximum extent possible, and an adequate supply of water must be provided. Jurisdictional areas were avoided as much as possible for construction given the existing physical parameters of the NAPS and were avoided completely for the utility line and overland LCTR. The required bridge for the overland LCTR is not regulated by the Corps.

Over entire property.

- B. National Historic Preservation Act (33 CFR 325, Appendix C) "Area of Potential Effect or Permit Area". Responsibility for the NHPA analysis fell to the NRC as the designated lead federal agency for this purpose. The entire project was included in the applicant's work for NHPA coordination, and the State Historic Preservation Officer (SHPO) concurred with a finding of No Adverse Effect on Historic Properties, after incorporation of commitments from the applicant, for all areas where a Corps' permit is required. Since the NRC is the lead agency and the entire project was included in the review, the Corps' concurs with the SHPO's findings.
- C. Endangered Species Act "Action Area". The action area for this project included the NAPS, Route 700 parcels, Lake Anna and the WHTF shorelines, and the roll-off location on the Mattaponi River for the LCTR.

4. Complete Application and Public Notice Comments

- A. A Joint Permit Application for the proposed project was received by the Corps on July 19, 2010. Complete information for the public notice was received on December 23, 2010. The proposal was public noticed on January 6, 2011, and the public comment period ended on February 14, 2011. In addition to the public notice electronic posting, 3335 printed public notices were mailed to adjacent property owners. Printed copies of the entire JPA were made available in 7 public locations, and the applicant provided an electronic version of the entire JPA on a website.
- B. Public notice comments.
 - (1) Commenters and issue raised.

Name	Issue
Mike Kelly, WEG	Availability of mitigation credit in York River Bank
Dane Swenson	Potential flooding damage from 3" water level increase
P. E. Foster	Water temperature
James Parker, Falling Springs LLC	Availability of mitigation credit in Pamunkey Farms Mitigation Bank
William Kilroy	Decreasing water levels

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Dorli Bokel	Water temperature
William Douglas Smith, Lake Anna Civic Assoc	Structural damage from increased water level
Harry Ruth, Friends of Lake Anna	Time period of USACE permit and length of construction; drought conditions; maintenance of design water levels; IFIM study; computer modeling; Lake Anna lawsuit; LCTR impacts; spoil haulage; cumulative water withdrawals
Duane Redic	Balance lake management between electric generation and recreation
US Environmental Protection Agency	Alternatives analysis; hydrology effects; quantity of impact; compensatory mitigation
VA Dept of Transportation	Possible presence of VDOT mitigation site; requirements of over width and over weight trucking
VA Dept Conservation & Recreation	Information and comments regarding natural heritage resources
Louisa County Board of Supervisors	Future water withdrawal request
Louisa County Water Authority	Future water withdrawal request

- (2) Site was/ was not visited by the Corps to obtain information other than to delineate jurisdiction. Corps also visited site to evaluate streams proposed for preservation as part of the compensatory mitigation, to evaluate shoreline conditions, and to view certain impact areas.
- (3) Issues identified by the Corps: The Corps' requested information for elements of the compensatory mitigation plan located on Dominion's property related to the preservation stream reaches, potential contaminants in excavated material, consumptive water uses, erosion and sedimentation control authorization status, Mattaponi River restoration plans, administration of funds transferred to the Virginia Department of Game and Inland Fisheries (VDGIF), and water quality permit status.
- (4) Issues/comments forwarded to the applicant. NA/ Yes. Forwarded by letter on March 7, 2011.
- (5) Applicant replied/provided views. NA/ Yes. Comments for which the District Engineer needed additional information from the applicant in order to respond were sent to the applicant, and the additional information was provided on April 8, 2011. That information included responses to agency comments, public comments, and the issues identified by the Corps' that are listed above.
- (6) The following comments are not discussed further in this document as they are

outside the Corps purview. NA/Yes. Comments that are related to water withdrawal and water temperature will not be discussed in detail as these are issues where the State of Virginia is the primary regulatory agency.

5. Alternatives Analysis

A. Criteria considered in evaluating alternatives.

Issue	Measurement and/or constraint
Wetlands	Acres of direct impact
Waters	Area and length of impact, withdrawal and discharge effects
Adjacent properties	Access & visual buffering
Stormwater management	Extent located in waters or wetlands
Cost	Dollars for construction, acquisition of property, and spoil haulage
Existing infrastructure	Connections & transportation obstructions
Safety	Addition to existing road traffic

B. Off-site locations and configuration(s) for each.

Off-site locations as well as alternative cooling system technologies were evaluated during the ESP process. The NRC accepted the NAPS location and the proposed cooling system for the project and granted the ESP after completion of the EIS for the project. In the COL application to the NRC, alternatives relating to other fuel sources were considered. The Corps' accepts the NRC position regarding the selection of the NAPS as suitable for additional nuclear base load generation and the selection of the proposed cooling system as concluded in the EIS for the ESP. Additionally, the Corps' accepts the NRC position regarding the selection of a nuclear fuel source to provide the additional base load generation capacity as concluded in the SEIS for the COL application. The ESP and COL application environmental reports as well as the NRC EIS and SEIS were used to inform the Corps' decision. Detailed information on each of the off-site and fuel source alternatives can be found in these documents which are incorporated by reference into this decision document. A specific discussion of these alternatives will not be restated in this document.

C. On-site configurations.

The detailed alternatives described in this decision document are those specific to the construction and operation of Unit 3 at NAPS developed in compliance with the NRC's NEPA analysis. The applicant conducted an alternatives analysis for the individual project elements and presented the results in the permit application. The alternatives included alternate locations for the cooling towers and associated stormwater basin, configurations for project elements, transportation routes, locations for spoil disposal,

and water level elevations. The Corps' accepts the NRC conclusions regarding the decision to issue an ESP to NAPS for Unit 3, the decision to utilize the proposed cooling system, and the decision that a nuclear source is compliant with NEPA requirements as documented in the SEIS for the COL.

(1) Project Element Alternatives:

Cooling Towers: The existing Units 1 and 2 use a once-through cooling system that withdraws water from Lake Anna, discharges into a canal, flows through the WHTF, and returns to Lake Anna through Dike 3. The proposed cooling system for Unit 3 is a closed-loop, combination dry and wet cooling tower system for the circulating water system (CWS) with makeup water supplied from Lake Anna. This type of system will provide for operational flexibility while reducing water consumption and will result in an insignificant impact on temperatures in Lake Anna and the WHTF. The ESP granted by the NRC provides for an envelope within which the Unit 3 facilities can be located, and the cooling towers are located in proximity to the reactors for proper function and safety. Within the ESP envelope, the proposed cooling tower locations were based on considerations including: limiting impacts to wetlands and streams; minimizing plume impacts to existing facilities; using the natural topography of the area to reduce excavation requirements; and maintaining small noise and visual impacts. The proposed arrangement also considered location of the towers in relation to parking lots and buildings, privately owned property and residences, electrical switchyards and transmission lines, prevailing wind direction, and tower height. The location of the wet portion of the proposed towers provides sufficient distance from the switchyard, power block, power transmission lines and habitable buildings to protect these facilities and electrical components from excessive salt deposition and moisture. The elevation of the proposed cooling tower area takes advantage of natural topography to provide a visual and sound buffer for nearby off-site properties. Four alternative cooling tower layout configurations within the ESP envelope were considered. The footprint of the proposed cooling system is approximately 38 acres, and options where the electrical fans were separated from the cooling tower resulted in greater impacts from the larger surface area. The proposed layout results in the least amount of wetland and stream impacts, minimizes impact to the human environment, falls within the ESP envelope, and meets function and safety needs.

Cooling Towers Stormwater Basin: The stormwater management facility associated with the proposed cooling towers detains the runoff from the cooling tower area and releases it to the existing stream east of the cooling tower area. The facility was designed to meet both water quality and quantity control requirements. The proposed location for the CWS cooling towers will require excavation of a hillside to create a sufficient level area for both the hybrid and dry cooling towers. This results in uphill slopes on three and one-half of the four sides and leaves three available alternatives lower in elevation where runoff can be directed. A fourth option would require substantial excavation resulting in additional excess spoil for disposal. The first

alternative involved placing two stormwater basins in the headwaters that drain the existing hill slope resulting in direct impact to streams and wetlands as well as indirect impacts downstream from a lack of detention or treatment. The second alternative involved routing runoff directly into Lake Anna through a channel and culvert system; however, this would result in deprivation of hydrology to the existing streams as well as indirect impacts to Lake Anna from the lack of detention or treatment. The third, preferred alternative, places a stormwater basin in the borrow area used for Units 1 and 2. This basin would collect runoff, provide retention and treatment, and discharge water into the wetlands and streams to maintain hydrology while also minimizing direct impacts to streams and wetlands.

Water Intake Structure: To establish a water source from Lake Anna into the existing water intake structure, a berm separating the basin from Lake Anna must be breached. This will require excavation of material from Lake Anna as well as from the basin, and this excavation is not subject to Corps' regulation as a non-navigable water. The final spoil will be included in the excess spoil disposal on the Route 700 parcels. Three options for establishing the connection to Lake Anna were considered: concrete box culverts through the berm (preferred); corrugated metal pipe (CMP) culverts through the berm; and open the berm with stable side slopes lined with rip rap or concrete. The CMP culverts were dismissed based on the maintenance and replacement requirements that may result in frequent temporary impacts. The use of an opening with rip rap lined slopes was dismissed based on the increased impacts as well as the lack of road access across the berm without the additional construction of a bridge. This option would also allow for floating debris accumulation in the vicinity of the intake. The preferred alternative of concrete box culverts results in the least amount of impact while allowing for a longer life-span than CMP culverts, continued access across the berm, and prevention of debris entering the intake area.

Site Separation Activities: In order to accommodate the new Unit 3, infrastructure existing on the site needed to be separated and replaced including parking areas and a stormwater basin adjacent to the new paint shop area. Based on the existing configuration of the NAPS, options for these elements were driven by space requirements and accessibility. The proposed parking area has been divided into two areas in order to minimize wetland impacts. The proposed stormwater basin results in minimal impacts to emergent wetlands based on the topographic restrictions present on the site and to take advantage of an existing culvert and depressed channel.

Large Component Transport Route: The construction of Unit 3 will require the delivery of oversized and overweight equipment to the NAPS. Alternative route options to accomplish delivery were evaluated including alternative roll-off locations, alternative ground transportation routes, and rail transportation. The analysis included the evaluation of bridges, railroad tracks, and other obstructions present on the route.

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The reactor and oversized/overweight equipment is proposed to be delivered from an ocean-going vessel to a barge that will transit through the York and Mattaponi Rivers. Two locations were evaluated for a roll-off facility where the equipment will be transferred from the barge onto an overland transport vehicle. The preferred location is adjacent to the Walkerton Bridge on the west bank of the Mattaponi River, the same location used for equipment delivery for Units 1 and 2. The second location was the town of West Point approximately 17 miles downstream of the Walkerton Bridge Site. This second option was dismissed based on the requirement to construct an additional bridge in the town of West Point and to perform approximately 105 powerline crossings. The reactor vessel is expected to be approximately 28 feet in height, and many of the overhead wire crossings would need to be raised in order to accommodate the transport components. These factors rendered the site logistically unsuitable. Additionally, the West Point site would result in greater impacts to aquatic habitats based on an evaluation of the National Wetlands Inventory (NWI).

The overland transportation route proposed for the project is the use of State Route 30, crossing over Interstate 95, and continuing on to the NAPS. This route presents no overhead obstructions between the Walkerton roll-off facility and the NAPS. Two options were considered to accomplish a crossing of the North Anna River by use of a temporary bridge, and the preferred option resulted in no impacts to wetlands or streams. The proposed bridge crosses the river with a clear span; therefore, the Corps' does not have jurisdiction over the crossing.

The use of rail transportation from Ruther Glen was considered; however, the available tracks were not designed to accommodate the weight of the reactor. The reactor vessel, the largest component, is expected to have a height of 28 feet, as noted above, and weigh approximately 600 tons. Additionally, approximately 7 miles of tracks leading to the NAPS are deteriorated and are not capable of withstanding the weight of the equipment.

Excess Spoil Placement Site: The proposed project will generate approximately 2 million cubic yards of spoil requiring permanent disposal. No alternatives to further reduce this quantity are possible given the engineering requirements associated with construction of the reactor unit and associated infrastructure. Additionally, the spoil disposal area will also serve as a construction lay down area that will provide a location for construction support facilities and materials as well as construction access. The applicant considered five locations for excess spoil disposal, the preferred location of the Route 700 parcels adjacent to the NAPS as well as four off site locations. The locations were evaluated for the presence of wetlands and/or streams, available capacity for the anticipated spoil volume, land acquisition cost, operational costs for loading and hauling, transportation and safety concerns, and air emissions from the equipment.

The applicant does not own the four alternative locations; therefore, publicly available data was used to perform the analysis of potential wetland and stream impacts as access to the property was not obtained. Using site topography to generate a conceptual spoil

disposal footprint and comparing that to NWI mapping, three of the four sites produced anticipated wetland/waters impacts of 3.8 to 5.3 acres which exceeded the impacts for the Route 700 parcels. One site, Property D, suggested the possibility of no wetland or stream impact. Upon consideration of land acquisition costs and haulage costs based on distance, numbers of trips, and loading time, all four off site alternatives were determined to be not practicable given the higher costs associated with labor, construction time and property, and further detailed impact analysis was not performed.

In addition to the costs associated with land acquisition and haulage, the transportation logistics and safety concerns also eliminated the four off site locations. Use of these properties would require haulage on local road systems with unsuitable alignments for heavy truck traffic and limited sight distances at intersections, and this would result in increased traffic congestion and accident potential from the interaction of haulage vehicles with the existing local traffic use. The Lake Anna area contains a population of residents that utilize Kentucky Springs Road, the main access to the NAPS, as a daily transportation route to reach places of work, schools, and other support services such as grocery stores, doctors, etc. The preferred location, the Route 700 parcels, would not require the use of local roads as this property is directly adjacent to the NAPS.

Rail haulage of spoils was considered; however, this alternative was dismissed as not practicable due to the lack of suitable tracks and the infrastructure required for loading and unloading as well as switching operations.

A comparison of air emissions generated by the spoil disposal operation for each of the five alternatives was completed. This analysis used EPA-published emission factors and the specific equipment assumptions for the project. This analysis resulted in the preferred alternative of the Route 700 parcels producing the least amount of air emissions of five identified pollutants.

Lake Elevation: During the Coastal Zone Management Act (CZMA) concurrence certification, the Virginia Department of Environmental Quality (DEQ) and the Virginia Department of Game and Inland Fisheries (VDGIF) noted the potential for reduced flows to the North Anna River downstream of the Lake Anna dam as a result of the proposed water withdrawal for Unit 3 operation. To address this, an Instream Flow Incremental Methodology (IFIM) study was conducted to examine operation of Unit 3 while minimizing, to the extent practicable, impacts to the North Anna River. The IFIM report is incorporated by reference as part of this decision document. Multiple scenarios were considered for this study, including alternatives with no water level increase as well as the alternative of raising the normal water level by 3 inches to a new target of 250.25. The study concluded that the 3-inch water level increase would accommodate the withdrawal for operation of the new Unit 3, using cooling system operational modes and dam releases dependent on water level, while providing for sufficient downstream flows to support aquatic habitat and recreation in the North Anna River as well as lake recreational uses.

The applicant's proposed alternative consists of the following components associated with construction and operation of the proposed nuclear unit:

- Construction of the new unit and the cooling towers and associated storm water basin
- Water intake structure modifications
- Site separation activities
- A heavy haul route from Walkerton landing to the NAPS with the roll off facility in the Mattaponi River as the only impact subject to Corps' jurisdiction
- Excess spoil disposal for material excavated from the existing NAPS to accommodate the new unit and cooling towers
- An increase in normal water levels in Lake Anna and the WHTF
- Construction of a 500-kV transmission line with no impacts subject to Corps' jurisdiction

- (2) No Action Alternative: The only alternative not requiring a permit was the No-Build (No Action) alternative. Under this alternative, construction and operation of the new Unit 3 at the NAPS would not occur resulting in no additional baseload generating capacity from the NAPS. NRC, by issuance of the ESP and the completion of the SEIS for the COL, concurred that nuclear generation from the NAPS is suitable for meeting the electrical demand; therefore, the No-Build alternative does not meet project needs for nuclear generation of additional baseload capacity.
- (3) Least Environmentally Damaging Practicable Alternative (LEDPA): The Norfolk District concurs with the applicant's assessment of on-site configurations, and concludes that the LEDPA is the applicant's proposed alternative for the reasons provided above.
- (4) Avoidance and Minimization: The majority of the proposed work will occur at the NAPS and will utilize existing transportation and utility corridors. However, the scale of the individual project components and the space limitations present on the NAPS results in unavoidable impacts to waters and wetlands. To minimize those impacts, various design measures were incorporated into the project. The proposed cooling system will occupy a footprint of approximately 38 acres, and the proposed cooling tower configuration will avoid 0.71 acres of wetland impact as compared to other layouts. Additionally, the storm water basin associated with the cooling towers was a consolidation of two basins into one basin that was located to avoid 600 linear feet of stream and 1.5 acres of wetland impacts. The proposed storm water basin's location also alleviates the need to excavate additional area which reduces the amount of excess spoil for disposal. The parking lot associated with site separation activities was divided into two smaller lots in order to avoid 0.56 acres of wetlands. The transportation route for the equipment heavy haulage utilizes an existing road system, and no impacts to waters and/or wetlands will be required outside of the roll off facility in the Mattaponi River. One bridge crossing of the North Anna River will be

required, but this will be a clear span bridge with no discharge of fill; therefore, it is not subject to Corps' jurisdiction. Similarly, the electric transmission line will be constructed in an existing utility line corridor and will not result in any impacts to waters and/or wetlands. Since the corridor is already in place and maintained for an existing utility line, no conversion impacts will occur for clearing. The IFIM analysis was applied to balance the operational water withdrawal requirements with downstream flow requirements and minimize any impacts by providing multiple operating scenarios based on water level elevations combined with a 3-inch increase in normal water elevation.

- (5) Compensatory Mitigation: To compensate for unavoidable permanent impacts to non-tidal wetlands and a portion of the impacts to streams, the applicant proposes to purchase 16.84 wetland credits (2:1 for forested wetlands, and 1:1 for emergent and shoreline wetlands) and 5624 stream credits from a private mitigation bank. The applicant anticipates using the Woodford Mitigation Bank (Woodford) to provide the necessary credits. Woodford is an approved mitigation bank, and this bank anticipates that sufficient credits will be available to provide the required mitigation. In the event that sufficient credits are not available from Woodford, an alternate mitigation bank serving the project HUC or the Virginia Aquatic Resources Trust Fund may be used to meet the compensation credit requirement.

8.7 acres of wetland compensation credit are required for the unavoidable permanent impacts associated with construction of the project elements and spoil disposal at the NAPS and the adjacent Route 700 parcels. While compensation will be provided for 0.26 acres of open water impacts for the DEQ permit, these impacts are related to the mechanical dredging of subaqueous bottom in Lake Anna as part of the water intake structure work with subsequent rip rap stabilization installed. The dredging of the non-navigable water is not subject to Corps' jurisdiction. Additionally, this activity will not result in a net loss of available aquatic habitat as the bottom elevation will be altered over this area by the discharge of fill for stabilization, but the available water volume will not be significantly reduced. The activity will result in a negligible effect on the aquatic habitat of Lake Anna; therefore, this 0.26 acres of compensation is not a condition of the Corps' permit. The temporary impact from the cofferdam and dewatering to complete the intake work does not require compensation as the removal of the cofferdam will restore conditions in Lake Anna.

The proposed Unit 3 operation requires the discharge of fill into Lake Anna for intake structure work, and the 3-inch water level increase is also proposed to support operation of the new unit. 8.14 acres of shoreline wetlands will be inundated by the 3-inch water level increase; however, water level data history indicates that the proposed new water level has been attained previously through the site's operation as part of natural fluctuations. Additionally, a field visit to the shoreline areas to be inundated revealed indicators of periodic saturation of the soils in these areas. Based on the normal water level fluctuations that have occurred over the lifetime of the

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facility as well as the presence of saturated conditions, the shoreline wetlands are not expected to experience any permanent or temporary loss of any kind. Wetland areas surrounding Lake Anna and the WHTF are expected to reestablish as water levels shift. The applicant offered mitigation in the form of bank credits at a 1:1 ratio based on DEQ's assessment that temporal loss of function would occur.

To provide compensation for unavoidable permanent impacts to streams resulting from the construction activity and spoil disposal at the NAPS and the adjacent Route 700 parcels, the applicant proposes to preserve 11,775 linear feet of stream channel and associated riparian buffer on Dominion property at the NAPS for 2,138 compensation credits and to purchase the remaining 5,624 credits from Woodford. The required compensation credits as well as the preservation credits provided by the offered mitigation streams were determined by application of the Unified Stream Methodology (USM). The proposed preservation streams will be placed under deed restrictions, and a best management practice (BMP) will be constructed between an existing parking lot and one preserved stream to reduce velocity and provide settling prior to release into the channel. This will serve to improve the habitat and quality of this stream reach.

Temporary impacts will occur to 0.18 estuarine emergent wetlands, 0.06 acres palustrine emergent wetlands and 308 linear feet of waters on the Mattaponi River shoreline as well as an encroachment into the Mattaponi River and the associated submerged aquatic vegetation (SAV) beds present in order to construct the roll off facility. To compensate for these temporary impacts, the applicant will remove all fills and dolphins and restore the site to pre-construction condition. The impacts are anticipated to be in place for approximately 3 years to accommodate delivery of the Unit 3 equipment. Restoration plans have been prepared for both the wetlands and the SAV beds, and these plans have been reviewed and approved by the regulatory agencies as well as by the Virginia Institute of Marine Science (VIMS). The restoration work will be monitored for five years after completion to ensure that the temporal losses have been adequately mitigated. Based on the extremely small quantity and short duration of the impacts, the restoration and monitoring is suitable mitigation without further site protections or long-term management. In the event the wetland restoration is not successful, wetland credits will be purchased from an approved bank.

6. **Evaluation of the 404(b)(1) Guidelines.**

A. Factual determinations.

<p>Physical Substrate. <input checked="" type="checkbox"/> See Existing Conditions, paragraph 1 <input type="checkbox"/></p>
<p>Water circulation, fluctuation, and salinity. <input checked="" type="checkbox"/> Addressed in the Water Quality Certification. <input type="checkbox"/></p>
<p>Suspended particulate/turbidity. <input type="checkbox"/> Turbidity controls in Water Quality Certification. <input checked="" type="checkbox"/> Permit will be conditioned to require E&S controls in accordance with state manual in order to minimize any downstream particulates or turbidity resulting from the authorized activities.</p>
<p>Contaminant availability. <input checked="" type="checkbox"/> General Condition requires clean fill. Also, the applicant has indicated that no known hazardous substances or contamination is present at the NAPS. The VWP permit issued by DEQ requires a dredging plan for the excavation of Lake Anna subaqueous bottom that will assure only clean fill is discharged. The Corps' permit will be conditioned that any observation of potential contaminants will require testing and appropriate handling prior to discharge. <input type="checkbox"/></p>
<p>Aquatic ecosystem and organism. <input checked="" type="checkbox"/> Wetland/wildlife evaluations, paragraphs 5, 6, 7 & 8. <input type="checkbox"/></p>
<p>Proposed disposal site. <input checked="" type="checkbox"/> Public interest, paragraph 7. <input type="checkbox"/></p>
<p>Cumulative effects on the aquatic ecosystem. <input checked="" type="checkbox"/> See Paragraph 7.e. <input type="checkbox"/></p>
<p>Secondary effects on the aquatic ecosystem. <input checked="" type="checkbox"/> See Paragraph 7.e. <input type="checkbox"/></p>

B. Restrictions on discharges (230.10).

- (1) It has/has not been demonstrated in paragraph 5 that there are no practicable nor less damaging alternatives which could satisfy the project's basic purpose. The activity is/is not located in a special aquatic site (wetlands, sanctuaries, and refuges, mudflats, vegetated shallows, coral reefs, riffle & pool complexes). The activity does/does not need to be located in a special aquatic site to fulfill its

basic purpose.

- (2) The proposed activity does/ does not violate applicable State water quality standards or Section 307 prohibitions or effluent standards (based on information from the certifying agency that the Corps could proceed with a provisional determination). The proposed activity does/ does not jeopardize the continued existence of federally listed threatened or endangered species or affects their critical habitat. The proposed activity does/ does not violate the requirements of a federally designate marine sanctuary
- (3) The activity will/ will not cause or contribute to significant degradation of waters of the United States, including adverse effects on human health; life stages of aquatic organisms' ecosystem diversity, productivity and stability; and recreation, esthetic, and economic values.
- (4) Appropriate and practicable steps have/ have not been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (see Section 5.C.(5) & (6) for description of mitigative actions).

7. Public Interest Review

Public Interest Review Factors: All public interest factors have been reviewed as summarized here. Both cumulative and secondary impacts on the public interest were considered. Public interest factors that have had additional information relevant to the decision are discussed below in 8.A.

				+ Beneficial effect
				0 Negligible effect
				- Adverse effect
				M Neutral as result of mitigative action
+	0	-	M	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Conservation.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Economics.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Aesthetics.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	General environmental concerns.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wetlands.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Historic properties.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fish and wildlife values
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flood hazards.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floodplain values.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Land use.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navigation.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shore erosion and accretion.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Recreation.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Water supply and conservation.

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Water quality.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy needs.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Food and fiber production.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mineral needs.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Considerations of property ownership.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Needs and welfare of the people.

8. **Effects, Policies and Other Laws**

A. Relevant Public Interest Factors

- (1) **Economics**: No significant adverse or beneficial impacts are anticipated. The project's permanent impacts will affect only Dominion-owned property. No takings will be required, and no change in property value is expected as the site is currently used for nuclear power generation. There will be an estimated increase of 5,000 construction-related jobs in the area given the magnitude and complexity of the project. A large portion of these should be temporary, and a smaller number will be permanent. Based on this, the impacts of this project on economics and property values should be minimal, with a beneficial effect on the local region's businesses for both the temporary and permanent support of workers.
- (2) **Aesthetics**: No significant adverse or beneficial impacts are anticipated. As described earlier in this document, the cooling tower complex was located in such a manner as to utilize the existing topography to minimize potential viewshed impacts on the surrounding community. As the NAPS is an existing facility with an existing transmission line, no significant change in the character or appearance of the area will occur as a result of the project.
- (3) **Wetlands and waters**: While impacts to wetlands and waters will occur, avoidance and minimization measures were incorporated to reduce impacts, as outlined above in the discussion of alternatives. The project will result in the permanent loss of 4.15 ac. of nontidal forested wetlands, 0.40 ac. of nontidal emergent wetlands, and 6,380 linear feet of intermittent stream. In addition the proposed work will result in impacts 0.26 acres of subaqueous bottom in Lake Anna and 8.14 acres of shoreline wetlands surrounding Lake Anna and the WHTF. The remaining impacts occur at the Mattaponi River, and these are expected to be in place for approximately three years with subsequent restoration and monitoring.

Most of the wetlands and streams being impacted are adjacent to Lake Anna and the WHTF and/or tributaries to Lake Anna and the WHTF. The areas are currently separated from the remainder of the North Anna River watershed based on the presence of the dam that was constructed to form Lake Anna and the WHTF. The

wetlands and waters do provide functional value within the watershed surrounding Lake Anna and the WHTF. The wetlands and waters provide aquatic habitat, sediment/toxicant retention, wildlife habitat, flood flow attenuation, and recreation. The shoreline wetlands are being affected by the 3-inch water level increase, but this increase is within the normal fluctuation range of Lake Anna and the WHTF. Some migration of the wetland community is expected based on the anticipated higher elevation, but this should not result in losses of the functions provided. The shoreline area contains indicators of periodic soil saturation; therefore, the reestablishment of the wetland community should be commensurate with the change in water level elevation. The recreational use of Lake Anna and the WHTF water will not be affected by the proposed project. The 3-inch water level increase is the only element that affects the water surface, and this minimal increase, within normal fluctuation range, will have a negligible impact on overall volume and surface area of these waters. The non-tidal wetlands and intermittent streams being impacted primarily provide value for habitat, sediment/toxicant retention, and flood flow attenuation for the watershed around Lake Anna and the WHTF. The sediment/toxicant retention and flood flow attenuation functions will be performed by the erosion and sedimentation control measures used for the project as well as the installation of storm water basins on the project areas. The applicant's preservation stream reaches and associated riparian buffers will provide adequate habitat for the existing ecosystem at the NAPS. The individual project components, stormwater basins, culverts, etc., have been designed to ensure hydrology to downstream wetlands and waters is preserved.

Compensation will be provided for unavoidable permanent impacts to wetlands and streams. As stated above, streams and riparian corridors will be preserved on the NAPS as a portion of mitigation, and the remaining required credits will be purchased from one or more commercial mitigation banks which serve this geographic area. The non-tidal wetland losses will be compensated through purchase of wetland credits from one or more commercial mitigation banks which serve the area. Additionally, the shoreline wetlands, although not expected to experience losses, will also be mitigated with an offered wetland credit purchase in order to address DEQ's concerns. Should sufficient credits not be available from an approved bank, a contribution to the VARTF will be used.

The work will also temporarily impact 0.18 acres of estuarine emergent wetlands, 0.06 acres of palustrine emergent wetlands, 308 linear feet of Mattaponi River shoreline, and an encroachment into the Mattaponi River and the associated SAV beds. The permit will be conditioned to require removal of all fills and dolphins and restoration of grades in these areas, soil preparation, and planting with five years of monitoring as described in the restoration plans that were approved by the regulatory agencies and VIMS.

No significant adverse effects are anticipated.

- (4) Fish and Wildlife Values: The proposed project's permanent impacts will occur within areas currently used for power generation. Initial disturbance of these areas occurred in the late 1960's with the initiation of construction for the North Anna River dam and the NAPS. Land use for the NAPS currently supports the infrastructure for power generation and transmission and incorporates an exclusion area extending 5,000 feet from the reactors on the power plant property where no development is allowed. Lake Anna and the WHTF were constructed to support the NAPS, and subsequently the surrounding shoreline properties have been developed for residential and recreational use. This human activity has altered the natural communities.

Wildlife habitat associated with residential areas is generally limited in value and function due to the lack of plant diversity and the relatively high frequency of disturbance; however, the area is rural in nature and is utilized by wildlife. Forested areas within the exclusion area of the NAPS and the residual forested areas among the developed properties offer refuge and foraging areas for a variety of small mammals, birds, reptiles, white-tailed deer and migrating waterfowl. However, a very small area of this forested property will be impacted by the project.

The proposed fill will displace wetlands and waters as described above, and will impact to some extent the fish and wildlife resources they support. However, as much of the impact is not expected to alter the remaining habitat on the shoreline areas, and the forested impacts are small when compared to the rural nature of the area as well as the total area of the exclusion zone surrounding the NAPS, impacts to fish and wildlife are expected to be minimal.

It is noted that the applicant signed a Memorandum of Agreement (MOA) with Virginia DGIF. The Virginia DGIF will receive a total of 6 million dollars from the applicant for enhancement projects in the North Anna and Pamunkey River watersheds. This funding resulted from the IFIM study which concluded that the 3-inch increase in water level, combined with a scheduled flow release from the North Anna dam into the downstream reaches of the North Anna river based upon water levels and operating scenarios, would adequately protect habitat in downstream reaches. An additional component was the provision of funding for habitat improvement projects. This voluntary contribution will not be counted toward the applicant's compensatory mitigation plan since the MOA was not developed in accordance with the 2008 Mitigation Rule.

No significant adverse impacts are anticipated.

- (5) Land Use: The existing land use in the vicinity of the project includes commercial power generation and transmission, residential, and recreational use. These land uses will not change. Lake Anna and the WHTF were constructed to support the operation

of nuclear generation units at the NAPS, and the proposed project will take advantage of the existing infrastructure and water supply in order to minimize impacts and to avoid conversion of an area to a different use. The project proponent currently owns the land on which the permanent impacts will occur, and the impacts are commensurate with the current uses. No adverse effects are anticipated. According to 33 CFR 320.4(j)(2), the primary responsibility for determining zoning and land use matters rests with state and local governments. The Corps will normally accept decisions by such governments on those matters unless there are significant issues of overriding national importance such as national security, navigation, national economic development, water quality, preservation of special aquatic sites, including wetlands, with significant interstate importance, and national energy needs. Since this project involves a beneficial effect on national energy needs, and the remaining issues are not of importance on the national level, the Corps will not deny the permit or insert any land use-related conditions. The purpose of the project is to increase nuclear base load generation, and the project utilizes existing infrastructure and property to the maximum amount to achieve that purpose. Current land use will not be altered with the project.

- (6) Navigation: No adverse effects are anticipated. While there will be temporary impacts from the encroachment into the Mattaponi River for the roll off facility, these will not be significant. The proposed encroachment does not affect the federal channel identified in the Mattaponi River, and it does not affect the ability of the waterway to be used for navigation. The permit will be conditioned that all fills and structures must be lighted and identified by signage while in place and removed in their entirety upon completion of their utility for the proposed project. Neither the U. S. Coast Guard nor the Norfolk District Operations personnel provided comments on the public notice. The Virginia Marine Resource Commission (VMRC) will also regulate the encroachment into the Mattaponi River, and this agency also has jurisdiction to regulate the temporary bridge over the North Anna River.
- (7) Shore Erosion and Accretion: No adverse impacts are anticipated. The 3-inch increase in water level in Lake Anna and the WHTF are within the normal fluctuation levels for those waters; therefore, exposed shoreline areas currently experience some erosive forces. The existing wave action in these water bodies is not expected to change given that the current use will not change for these waters. On the Mattaponi River, shoreline protection will be installed to prevent erosion or other permanent impact on the river's bank. Upon completion of the roll off facility's use to receive equipment, the entire area will be restored to pre-construction condition.
- (8) Recreation: No adverse impacts are anticipated. The water of Lake Anna and the WHTF will not experience any significant changes beyond the fluctuations that regularly occur from the primary use of these waters to support the NAPS. Water levels fluctuate based on environmental conditions, consumptive use, and operation of Units 1 and 2. The recreational use of Lake Anna and the WHTF is secondary to the

original intent of their construction which was to support the generation of nuclear power. These waters will remain accessible for recreation, and the water level will continue to support recreational use. Any consumptive water withdrawal will be evaluated by DEQ as part of the water withdrawal permit process that is ongoing. The IFIM study resulted in the applicant's commitment to multiple operating scenarios and dam releases based on water levels that will continue to provide sufficient water levels downstream in the North Anna River to support recreational use of that water.

- (9) Water Supply and Conservation: No adverse effects are anticipated. Lake Anna and the WHTF are not used as a public water supply. These water bodies were constructed to support nuclear generation at the NAPS; therefore, no impact to human supplies will occur as a result of the proposed project. The permit will be conditioned to incorporate the downstream releases into the North Anna River according to the scenarios developed in the IFIM, and this will maintain adequate downstream flows for water supply needs. The Virginia DEQ is also evaluating the proposed operational water withdrawal, and this review will ensure compliance with state regulations for consumptive water use. The operating scenarios developed result in water conservation for Unit 3 operation based on the CWS cooling system's capability to operate in Energy Conservation (EC) mode or Maximum Water Conservation (MWC) mode based on the water level present in Lake Anna.
- (10) Water Quality: No adverse effects are anticipated. A 401 certification has been issued for the construction of Unit 3; however, the water withdrawal permit application continues to be in review. The project's erosion and sedimentation and stormwater management facilities have been designed in accordance with state regulations. Multiple permits are under review or have been issued from DEQ, Louisa County, and the Virginia Department of Conservation and Recreation (DCR) related to erosion and sedimentation control and stormwater management. A BMP will be constructed between an existing parking lot and a preservation stream reach to provide treatment and to reduce storm velocity. The selected cooling system will result in no significant change to the existing discharges into the WHTF. The applicant has either incorporated the following measures or the following conditions will be included as permit conditions to minimize impacts on water quality:
- i. No discharge of dredged or fill material may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt etc.) and material discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act). Upon observation of any potential contaminants, material will be tested and appropriately handled prior to discharge.
 - ii. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.
 - iii. Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other

fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date.

- iv. The construction or work authorized by this permit will be conducted in a manner so as to minimize any degradation of water quality and/or damage to aquatic life. Also, you will employ measures to prevent or control spills of fuels or lubricants from entering the waterway.
- v. Any heavy equipment working in wetlands other than those permitted for permanent impact must be placed on mats or other measures must be taken to minimize soil disturbance.
- vi. All dredging and/or filling will be done so as to minimize disturbance of the bottom or turbidity increases in the water which tend to degrade water quality and damage aquatic life.
- vii. A BMP will be constructed as depicted on plans dated June 2011 below the North Anna Nuclear Information Center (NANIC) parking lot.

- (11) Energy Needs: The project will have a beneficial effect on national energy needs. As demonstrated in the preparation of the ESP and COL NEPA documents, the applicant's electrical service area is deficient in production of the current and projected electrical base load demand. The proposed project will result in increased generation of base load electricity while providing for fuel source diversity and will reduce the need to import power into Virginia.
- (12) Safety: No significant impacts are anticipated. During the alternatives analysis, the applicant demonstrated that human safety was considered in establishing the Route 700 parcels as the preferred spoil disposal location as this removes heavy truck traffic from the local roads used by residents. Additionally, the ESP EIS indicates that a traffic management plan will be developed to minimize potential traffic safety concerns during the construction phase when additional workers will be commuting to the site. The permit will be conditioned to require lighting and signage on all portions of the roll off facility that encroach into the Mattaponi River in order to ensure sufficient safety warning for boaters. The NRC has authority over operational safety of nuclear generation facilities, and the issuance of the ESP as well as the SEIS preparations for the COL will address any concerns for this aspect of the human environment.
- (13) Consideration of property ownership: No significant impacts are anticipated. The project's individual elements that result in permanent impacts will be confined to property owned by the applicant. Temporary impacts on the Mattaponi River will not occur on Dominion property, and it will be incumbent on the applicant to secure the necessary leases to this property for the work proposed. The Route 700 parcels and the NAPS, where the largest portions of work will occur, are the property of Dominion. These properties are not readily accessible to the local residents based on the physical security restrictions for access to the NAPS and the presence of the exclusion area immediately surrounding the NAPS. The Route 700 parcels are

undeveloped and were purchased by the applicant following a timber harvest on these parcels. For the shoreline areas, the applicant purchased the necessary land to establish Lake Anna and the WHTF which results in Dominion ownership of all property up to an elevation of 255 msl. This incorporates the projected 3-inch water level increase that will place the normal pool at 250.25 msl. Residents on Lake Anna and WHTF obtain construction and use permits from Dominion for all structures and other improvements such as boathouses, bank stabilization, etc. that the property owners opt to build. Given that individual property owners adjacent to these waters do not own the area that may be inundated from the water level increase and that the projected increase is within the normal fluctuations of water levels, no significant impacts to property ownership will occur.

- (14) Needs and Welfare of the People: Beneficial effects are anticipated. While there will be unavoidable wetland and waters impacts, the project will result in an increase in electrical base load generation using, to the maximum extent possible, existing infrastructure and transmission capabilities. The use of nuclear generation will provide for a more diverse fuel source among other power production facilities and will eliminate the requirement to import electricity from other sources outside the state. Interruption of local traffic will be negligible given that the applicant will use property adjacent to the NAPS for spoil disposal and construction lay down, eliminating heavy truck traffic from local roads. Additionally, a traffic management plan will be used to minimize congestion during the construction phase. The public benefit from increased electrical base load capacity produced locally from a diverse fuel source outweighs any negative effects.

- B. Endangered Species Act. The proposed project will not affect any threatened or endangered species. Qualified surveyors conducted surveys for the presence of threatened or endangered species in the project areas, specifically small whorled pogonia (*Isotria medeoloides*) and Epling's hedge-nettle (*Stachys eplingii*). Additionally, an inventory survey was completed for SAV and other aquatic habitats at the Walkerton landing site which would have included identification of sensitive joint vetch (*Aeschynomene virginica*) and tropical water-hyssop (*Bacopa innominata*). These surveys identified no occurrence of federally listed threatened or endangered species at the NAPS, the Route 700 parcels, or the Walkerton location on the Mattaponi River. No impacts subject to Corps' jurisdiction will occur on the overland portion of the LCTR based on the use of existing roads, and the transmission line will use an existing corridor currently maintained as a utility corridor. The U. S. Fish and Wildlife Service submitted no comments in response to the Corps public notice for this project. The permit will be conditioned for surveys to be repeated at two year intervals until permanent impacts occur.

- C. Essential Fish Habitat. Adverse impacts to Essential Fish Habitat will/ will not result from the proposed project. The public notice stated that the Norfolk District's assessment

led to a preliminary determination that the proposed work will not have a substantial adverse effect on EFH. Our rationale for this preliminary determination was based on the comparison of the roll off facility's location in the Mattaponi River with the National Estuarine Inventory Atlas. This demonstrated that the Walkerton location was upstream of the tidal fresh water and mixing zone for the York River estuary. This zone is the termination point of expected EFH. No comments were received from NOAA Fisheries in response to the public notice. The DEQ permit places a time-of-year restriction on work at the Walkerton location based on DGIF comments; however, no DGIF comments were received by the Corps in response to the public notice. As the 401 certification conditions become conditions of the Corps' permit, this consideration is incorporated without a specific Corps' condition.

- D. Historic Properties. The proposed project will/will not have an adverse affect on any sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state, or local significance. The NHPA analysis was conducted by the applicant and coordinated with the State Historic Preservation Officer (SHPO). The NRC was designated as the Lead Federal Agency for purposes of NHPA. The project coordination related to the Corps' project areas occurred in essentially two increments, one for the NAPS property and a second one for the Walkerton location. In both cases, the SHPO concurred with a finding of No Adverse Effect on Historic Properties based on the commitments and plans submitted by the applicant regarding avoidance and protection of sites and the implementation of a ground disturbance plan for the LCTR roll off facility. The SHPO submitted no comments in response to the Corps public notice. The permit will be conditioned that all commitments offered by the applicant are required components of the project.
- E. Cumulative & Secondary Impacts. The geographic area for this assessment is the North Anna River watershed, specifically the area immediately adjacent and upstream of the North Anna River dam in Spotsylvania, Orange, and Louisa Counties. The area considered is approximately 343 square miles (219,520 acres) and is roughly bounded by Route 20 and Route 601 in Orange and Spotsylvania counties, Route 33 between Louisa and Gordonsville, Route 15 in Orange County, and Route 618 in Louisa County. Based on the scope of this watershed and the project area relative to this watershed, quantities of wetlands and streams have only been approximated from available data. As far as is known, no detailed study of the quantitative value of wetlands and streams within this watershed is available. The North Anna River watershed downstream of the dam was also considered; however, no impacts are anticipated from the project based on the operating scenarios and dam releases identified in the IFIM study.
- i. Baseline. Approximately 2 % of the watershed area is wetland (4388 acres), and this is derived from NWI mapping as no detailed study of the watershed has been conducted. There are also approximately 251 stream miles of identified perennial waters contained within the watershed, and this is derived from topographic data for the area. An identification of intermittent and ephemeral tributaries has not been performed for this

watershed. Additionally, the watershed contains 13,403 acres of open water (6 % of the watershed), the 13,000 acre Lake Anna and the WHTF, and three smaller impoundments. An analysis of the Corps permit database for the period 1991 to the present indicates that 13 acres of wetlands and 3365 linear feet of stream have been authorized to be filled. The projection is that authorizations will continue at the current rate/ increase/ because the general nature of the previous permit authorizations have been for small impacts from residential development, shoreline work, state road work, small ponds and utilities, and this is not expected to change. The land use in all three counties is predominantly forestry and agriculture. Single family residential development has occurred, and this has included areas surrounding Lake Anna and the WHTF. Little industrial development has occurred in the watershed, and it is not anticipated to increase. Some recent commercial development has occurred, but this is generally concentrated on the I-64 and I-95 corridors, both of which are not in the upstream watershed of Lake Anna and the WHTF. Natural resource issues of particular concern are limited to the forestry and agricultural practices that occur within the watershed.

ii. Context. The proposed project is typical of /a precedent /very large compared to /an expansion of a previous activity in the watershed. The original impoundment on the North Anna River and construction of the NAPS has been the largest development within the watershed. The initial impoundment, creating the 17-mile long Lake Anna and associated WHTF with approximately 272 miles of shoreline, began prior to passage of the Clean Water Act. Future conditions are expected to be similar to the current conditions within the watershed. Dominion owns the property surrounding Lake Anna and the WHTF, up to elevation 255 MSL, which provides some limits the type and amount of impact that can occur around the impoundment. Additionally, the current land use and the absence of major transportation corridors in the three counties in the upstream watershed are not conducive to growth in commercial or industrial projects. Besides Corps authorized projects, other activities in the watershed include forestry and agriculture as well as the existing residential developments that have been established. Resulting natural resource changes and stresses include road infrastructure, utilities, water consumption, and the logging and agricultural impacts to waters. At this time and in the reasonably foreseeable future, this watershed is not likely to experience a specific issue of concern from wetland loss based on the rural nature of the area and the lack of development pressure from commercial and industrial projects. The NAPS expansion is commensurate with the intent of the original NAPS project to construct the impoundment and associated infrastructure to support power generation in the watershed.

iii. Mitigation and Monitoring. The project affects the following key issue(s): loss of waters and wetlands within the watershed. The magnitude of the proposed effect is minimal within the watershed. Avoidance and minimization methods include on site configurations of project elements to reduce permanent impacts, transportation routes that eliminate and/or reduce impacts, use of an existing transmission corridor that

eliminates impacts, and reduction in quantity of excess spoil for disposal. Additionally, the applicant will maintain flows below the dam in the North Anna River as detailed in the IFIM study. Compensatory mitigation, namely wetland and stream credit purchase, stream preservation, and restoration of all temporary impacts and monitoring described herein will result in the project having no significant impact.

- F. Corps Wetland Policy. Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.
- G. Water Quality Certification under Section 401 of the Clean Water Act has/has not yet been issued by /State/ Commonwealth of Virginia for the construction of North Anna Unit 3. The applicant divided the project for the state review. The shoreline wetlands that will be inundated by the 3-inch normal pool increase are included in the impacts for the water withdrawal application which is pending with Virginia DEQ.
- H. Coastal Zone Management (CZM) consistency/permit: Issuance of a State permit certifies that the project is consistent with the CZM plan. There is no evidence or indication from the State of Virginia that the project is inconsistent with their CZM plan.
- I. Other authorizations: A permit is required from the Virginia Marine Resource Commission for the proposed bridge over the North Anna River and the LCTR roll off facility in the Mattaponi River. A King William County Wetlands Board permit will be required for the roll off facility at Walkerton. Additionally, erosion and sedimentation control authorizations as well as storm water authorizations have been obtained from Virginia DCR and Louisa County.
- J. (NA) Significant Issues of Overriding National Importance.

7. **Compensation and other mitigation actions.**

A. Compensatory Mitigation

(1) Is compensatory mitigation required? yes no

(2) Is the impact in the service area of an approved mitigation bank? yes no

Does the mitigation bank have appropriate number and resource type of credits available?
 yes no

As of February 2011, Woodford projects sufficient credit availability prior to the project's anticipated impacts. Mitigation will proceed in sequence with impacts.

(3) Is the impact in the service area of an approved in-lieu fee program?
 yes no

Does the in-lieu fee program have appropriate number and resource type of credits

available? yes no The use of the VARTF will only be considered should Woodford not be able to provide the necessary credits.

(4) Check the selected compensatory mitigation option(s):

- mitigation bank credits--for nontidal wetland and stream impacts
- in-lieu fee program credits
- permittee-responsible mitigation under a watershed approach
- permittee-responsible mitigation, on-site and in-kind--for stream impacts and temporary impacts
- permittee-responsible mitigation, off-site and out-of-kind

(5) The selected compensatory mitigation option for stream impacts includes a permittee responsible portion. This option was selected based on the presence of suitable streams adjacent to the project which will provide an ecological benefit to the immediate watershed area. Additionally, the incorporation of a BMP between an existing parking lot and a preservation stream reach will improve water quality and reduce velocity. The streams will be placed under deed restriction, and these streams also fall within the exclusion area of the NAPS which is monitored by the applicant. While there is a bank with stream credits available serving the geographic area of the project impacts, given the likelihood of ecological success and sustainability and location of the proposed mitigation site immediately adjacent to the project, the applicant's proposed compensation as a portion of the overall mitigation is environmentally preferable for this project.

There are not sufficient advance credits in this geographic area in the in lieu fee program; however, this option would only be used in the event Woodford was not able to supply the required credits.

There is no watershed-based mitigation approach for the project area that the permittee could use to direct mitigation for the project.

(6) Other Mitigative Actions: See Avoidance and Minimization measures discussed above in 5C(5).

8. **General evaluation criteria under the public interest review.** We considered the following within this document:

- A. **The relative extent of the public and private need for the proposed structure or work:** The project will provide additional baseload electric power to the applicant's service area. The present need for electricity has been demonstrated in the previous NEPA documents prepared by the applicant for the NRC review. The project will provide additional baseload electricity through the use of alternative fuel which will meet an established demand for power and increase the use of alternative energy sources.

- B. There are no unresolved conflicts as to resource use. The consumptive water withdrawal is the responsibility of the Commonwealth of Virginia, and the water withdrawal permit application is under review by the Virginia DEQ.
- C. The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public, and private uses to which the area is suited: The proposed work will result in permanent impacts to 4.55 acres of nontidal wetlands and 6380 linear feet of intermittent stream. 8.14 acres of shoreline wetlands will be inundated by the normal water level increase, but these are expected to reestablish with no temporary or permanent loss. The permanent wetland and stream loss is necessary if the project is to proceed. However, the project will provide additional baseload electric power using an alternative fuel source to the applicant's service area. The project will also provide an increase in employment opportunities, both temporary and permanent. These benefits to the public will be permanent. The permanent loss of wetlands/waters has been authorized only after the applicant incorporated all appropriate and practicable measures to avoid and minimize the impacts and mitigated for all unavoidable impacts through the purchase of credits from a mitigation bank for nontidal wetland and stream impacts, preservation of streams, and the restoration of all areas temporarily impacted. The measures are outlined above.

9. **Responses to comments.** The District Engineer has responded to comments received in response to the public notice in the following manner:

- A. Request for a public hearing: No requests for a public hearing were received.
- B. Alternatives: The EPA expressed a concern that the proposed project was not the least environmentally damaging practicable alternative (LEDPA). As stated in this document, the proposed project has been demonstrated to be the LEDPA. This conclusion is also supported by the NRC NEPA documents that have been prepared for the project.
- C. Watershed effects: The EPA expressed concern over the filling of small headwater streams within the watershed of the proposed project. As has been demonstrated in paragraph 7E above, the proposed impacts are not significant in the North Anna watershed upstream of the dam, and the IFIM study provided mechanisms by which downstream aquatic impacts were to be avoided.
- D. Hydrology: The EPA commented on maintenance of hydrology to downstream waters. The project's elements have been designed to maintain hydrology to downstream wetlands and waters. The spoil disposal fill will incorporate subsurface stone and piping to allow continued infiltration and transport of groundwater beneath the fill area. Stormwater basins and road crossings will maintain hydrology to receiving streams.
- E. Adequacy and type of mitigation: The EPA questioned the adequacy of the proposed

mitigation for the project and the appropriateness of mitigation credit for the proposed preservation streams. As described above, the proposed mitigation incorporates preservation within watershed of similar streams as the impacted streams that are directly adjacent to the proposed impact site. The applicant has established the suitability of the preservation streams and associated riparian areas and has incorporated a BMP to improve the quality of one reach. The EPA also recommended consideration of permittee-responsible mitigation in the form of specific projects within the watershed as well as a description of the specific projects available for use by the in-lieu-fee program. The applicant provided a mitigation plan in accordance with the priorities established in the 2008 mitigation rule. This regulation established that the purchase of bank credits was preferred to permittee-responsible mitigation projects. The specific projects and elements of approved mitigation banks and in-lieu-fee projects are under the purview of the Interagency Review Team (IRT), of which the EPA is a member. This concern is more suitable to be addressed within the IRT.

F. Baseline condition: The EPA commented that a baseline condition assessment was required to determine mitigation requirements. As documented in the JPA, the applicant completed the baseline assessment in accordance with the USM assessment procedures and the 2008 mitigation rule.

G. Temporary impacts and reestablishment: The EPA commented that long term monitoring, performance standards and adaptive management should be incorporated into plans for all areas of restoration for temporary impacts, including the shoreline wetland impacts. The applicant has offered purchase of mitigation credits at a 1:1 ratio for the shoreline wetland inundation based on DEQ's assessment of temporal loss of function. The Corps' does not expect any loss of function from these shoreline wetlands, temporary or permanent. For the restoration proposed on the Mattaponi River, the restoration plans include performance standards commensurate with the length of time the impacts will be in place, and the permit will be conditioned to require purchase of credits from an approved mitigation bank in the event those standards are not met.

H. Resource agency coordination: The EPA encouraged the applicant to coordinate and follow the recommendations of federal and state resource agencies regarding fishery habitat impacts and threatened and endangered species. As discussed previously in this document, the applicant completed all required coordination and suggested surveys for species. The IFIM study resulted in a plan to increase water levels in Lake Anna and conduct dam releases that preserve downstream and lake habitats.

I. Virginia DCR comments: DCR commented that their agency concurred with the survey results and the proposed actions of the applicant with regard to species and their habitats and recommended coordination with DGIF for the bald eagle and to initiate coordination if project scope changes. The applicant established that no bald eagle nests were present within 0.5 miles of the proposed work at the NAPS and Route 700 parcels, and the permit will be conditioned to require surveys for federally listed threatened and endangered species to be conducted every two years until impacts are complete.

J. Virginia DOT comments: VDOT commented that the Walkerton Landing LCTR roll off facility appeared to be near a mitigation site for a previous VDOT project as well as the requirement to obtain permits for over width and overweight trucking. The applicant indicated that their search of property records found no evidence of the proposed roll off facility being located on or near any deed restricted location, which would have been a mitigation site requirement. No other evidence was found to support the presence of a mitigation site at this location. The applicant stated that the appropriate permits for heavy haulage would be obtained.

K. Future water withdrawal: Both the Louisa County Water Authority and the Louisa County Board of Supervisors commented on their agencies' intention to consider the use of Lake Anna water as a supply for consumptive use in Louisa County. The applicant has stated that Dominion owns the land surrounding Lake Anna and the WHTF up to elevation 255 MSL and that the impoundment's primary purpose is the safe operation of the NAPS nuclear units. The applicant has indicated they do not support other consumptive uses of Lake Anna's water. The Corps' defers to the state in matters of consumptive water use, and as the impoundment does not currently serve as a water supply for any use other than the NAPS the proposed action will not have an adverse impact on water use or supply.

L. Water withdrawal and temperature: Public comments were received expressing concern over the proposed withdrawal of water for a third nuclear unit as well as the potential for a temperature increase in the WHTF. Consumptive water withdrawal is the responsibility of the Commonwealth of Virginia. The operational water withdrawal application for the proposed Unit 3 is under review at this time, and the Corps' expects that the state's review process will adequately address water withdrawal concerns. The proposed cooling system for Unit 3 will not result in an increase in temperature based on the NRC review of the proposed project.

M. Water level increase and land values: Several public comments expressed concern over the proposed 3-inch normal water level increase, specifically for flooding, wave action on shoreline erosion, damage potential to shoreline structures and possibly a reduction in property value. As stated previously, the applicant owns all property surrounding Lake Anna and the WHTF up to elevation 255 MSL, and the proposed 3-inch increase is within the normal fluctuation range already exhibited on site. All shoreline structures are authorized by a use agreement between the adjacent property owners and Dominion, and the deeds stipulate the requirements of Dominion and the operation and management of lake levels. As stated previously, the proposed 3-inch water level increase will have no significant impact on shoreline conditions.

N. Bonds and impact restoration: Public comments were received regarding the posting of bonds for assurance that impacts and/or other damages, such as to roads, from the project would be restored. The project's impacts will proceed sequentially, and in the event a decision is made to not construct Unit 3 based on non-issuance of the COL from the NRC,

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the majority of wetland impacts will not occur. Any wetland and water impacts will be required to be mitigated prior to or commensurate with the impact. As impacts will be mitigated through preservation and the purchase of wetland bank credits, no financial assurance or other environmental bonds will be required for the project. All heavy haul work must be permitted by VDOT, and that agency's review should be adequate to ensure no permanent damage will occur. The spoil disposal will occur on property adjacent to the NAPS, not requiring the use of roads used for daily public traffic, and any impacts would be the responsibility of the applicant as the only regular user of the road.

O. Accuracy of impacts and monitoring: Comments were received questioning the verification of wetland impact quantity and monitoring of construction activities and total impacts of the proposed project. The Corps' provided jurisdictional delineation verifications to the applicant for the proposed areas that will be impacted by the project. These were based on field determinations, not on computer modeling as suggested by one commenter. The Corps and DEQ retain the ability to perform compliance inspections during the course of the project to verify progress and impact quantities.

P. IFIM study and other items: Comments were received regarding the use of water in drought conditions, the accuracy of the IFIM study, water level maintenance in Lake Anna and the WHTF, and effects on recreational use of Lake Anna. The IFIM study provided operating scenarios that incorporated consideration of water levels in Lake Anna and conservation modes for the cooling system, and the operational water withdrawal will be evaluated independently by the Virginia DEQ. The IFIM study was reviewed by multiple state agencies, and the Corps' accepts the results. The water levels in the WHTF, as described previously in this document, are dependent on the operations of Units 1 and 2 and the release from dike 3; therefore, the water level is variable by design. The applicant's decision to increase the water level by 3 inches is designed to preserve recreational uses of Lake Anna, the WHTF, and the North Anna River downstream of the dam as well as to ensure protection of aquatic habitat by providing sufficient water volume to allow for all uses in addition to the consumptive use planned for Unit 3.

10. Determinations.

A. Public Hearing Request: NA I have reviewed and evaluated the requests for a public hearing. No requests for a public hearing were received in response to the public notice. Additionally, the project has received multiple public presentations and vetting from the applicant and the NRC over the course of the ESP and COL process. No new or significant information would be gathered from a public hearing conducted by the Corps that has not already been obtained from previous public involvement.

B. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions

of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

C. Relevant Presidential Executive Orders.

- (1) EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians.
 This action has no substantial direct effect on one or more Indian tribes.
- (2) EO 11988, Floodplain Management. Not in a floodplain. Alternatives to location within the floodplain, minimization, and compensation of the effects were considered above.
- (3) EO 12898, Environmental Justice. In accordance with Title III of the Civil Right Act of 1964 and Executive Order 12898, it has been determined that the project would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin nor would it have a disproportionate effect on minority or low-income communities. NRC reviewed the entire project for consistency with Executive Order 12898 (Environmental Justice). They evaluated potential effects and determined that construction of the proposed build alternative would not disproportionately affect minority or low-income populations within the study area.
- (4) EO 13112, Invasive Species.
 There were no invasive species issues involved.
 The evaluation above included invasive species concerns in the analysis of impacts at the project site and associated compensatory mitigation projects.
 Through special conditions, the permittee will be required to control the introduction and spread of exotic species.
- (5) EO 13212 and 13302, Energy Supply and Availability. The project was not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety. The review was expedited and/or other actions were taken to the extent permitted by law and regulation to accelerate completion of this energy-related (including pipeline safety) project while maintaining safety, public health, and environmental protections.

D. Finding of No Significant Impact (FONSI). Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, the District Engineer finds that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

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E. Compliance with 404(b)(1) guidelines. Having completed the evaluation in paragraph 5, the District Engineer has determined that the proposed discharge complies/does not comply with the 404(b)(1) guidelines.

F. Public Interest Determination: The District Engineer finds that issuance of a Department of the Army permit is not/is contrary to the public interest.

11. **Statement of Findings.** The District Engineer has evaluated, in light of the overall public interest, all available information pertaining to the subject application which involves construction and operation of a third nuclear unit at the NAPS in Louisa County, Virginia. This document summarizes his evaluation which reflects the national concern for both the protection and utilization of important resources and demonstrates that he has balanced the reasonably foreseeable benefits against the reasonably foreseeable detriments of the implemented project. The District Engineer has found that the project will have a minimal impact on the following project resources; conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, consideration of property ownership and, in general, the needs and welfare of the people. In this evaluation, the District Engineer has found no unresolved conflicts concerning alternative uses of the project site resources. The District Engineer's decision is to issue the permit, incorporating all practicable conditions to avoid or minimize environmental harm.

PREPARED BY:

_____ Date:
Project Manager

REVIEWED BY:

Nicholas L. Kumbula Date: 9-27-2011
Chief, Northern Virginia Regulatory Section