July 6, 2006

MEMORANDUM TO: Christopher Nolan, Branch Chief
New Reactor Environmental Projects Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

FROM: Jack Cushing, Senior Project Manager ***/RA/***
New Reactor Environmental Projects Branch
Division of New Reactor Licensing
Office of Nuclear Reactor Regulation

SUBJECT: TRIP REPORT - SEPTEMBER 19-22, 2005, TOUR OF THE NORTH ANNA RIVER, LAKE ANNA, AND THE SURRY ALTERNATIVE SITE

On September 19-22, 2005, the Nuclear Regulatory Commission (NRC) staff toured the North Anna River, Lake Anna, the vicinity surrounding the proposed North Anna ESP site and the Surry alternative site. The NRC staff met with the staff from the Virginia Department of Game and Inland Fisheries (VDGIF) to discuss their concerns regarding the Dominion Nuclear North Anna, LLC (Dominion) early site permit (ESP) application.

The NRC staff reviewed temperature and dissolved oxygen data collected on the North Anna River by Dominion. The staff toured the North Anna River with biologists from Dominion and Lake Anna with a commercial fishing guide. The NRC staff and contractor toured the Surry alternative site and the surrounding vicinity including Chippokes Plantation State Park and properties owned and managed by the Association for the Preservation of Virginia Antiquities. In addition, the NRC staff met with staff members of the National Park Service.

Enclosure 1 is the staff's Summary of the Tour of the North Anna River and Lake Anna and Meeting with VDGIF with Attachments 1 and 2, which are listings of meeting participants. Enclosure 2 is the staff's Summary of the Tour of the Surry Alternative Site and Meetings with Cultural and Historic Groups. Enclosure 3 is the staff's Summary of the Tour of the Vicinity Surrounding the Proposed North Anna ESP Site. Enclosure 4 contains the data on rivers downstream of the Lake Anna Dam and the North Anna ESP Dissolved Oxygen Data located in ADAMS under Accession Number ML052860350.

Enclosures w/atts: As stated

cc w/o Enclosures 1, 2, 3 and 4: See next page

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Enclosures w/atts: As stated

cc w/o Enclosures 1, 2, 3 and 4: See next page

Adams Accession Nos.
1. Memo to A. Kugler w/Encls: 1, 2, 3, w/Svc. List: ML061720366 and 4 (**ML052860350**) and Atts. 1, 2, 3 (**ML060570003**)
2. Pkg: **ML061740088**

*See previous Concurrence
E:\Filenet\ML061720366.wpd

| OFFICE | DLR:LA* | DLR:REBB:GE * | DNLR:NEPB:PM* | OGC/NLO | DNRL:NEPB:BC |
|---|---|---|---|---|---|
| NAME | Y. Edmonds | S.Hernandez | J. Cushing | RWeisman | CNolan-JCushing for: |
| DATE | 04/14/06 | 05/02/06 | 06/28/06 | 06/28/06 | 07/06/06 |

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Memo to: Christopher Nolan, from: Jack Cushing, dated: July 6, 2006

SUBJECT: TRIP REPORT - SEPTEMBER 19-22, 2005, TOUR OF THE NORTH ANNA RIVER, LAKE ANNA, AND THE SURRY ALTERNATIVE SITE

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# Summary of the Tour of the North Anna River and Lake Anna and the Meeting with the Virginia Department of Game and Inland Fisheries

Subject: Trip Report for the Tour of the North Anna River and Lake Anna and the Meeting with the Virginia Department of Game and and Inland Fisheries

On the morning of September 20, 2005, U.S. Nuclear Regulatory Commission (NRC) staff, including a biologist and a hydrologist from Pacific Northwest National Laboratory (PNNL), visited Dominion's offices in Richmond, Virginia and was presented with the temperature and dissolved oxygen (DO) information Dominion had collected on the North and South Anna Rivers during July and August 2005. See Attachment 1 for a list of attendees at the September 20, 2005, meeting. During the afternoon of September 20, 2005, the NRC and the PNNL staff visited several data collection stations at Pamunkey, the North Anna, and the Little Rivers with the Dominion biologists. On the morning of September 21, 2005, the NRC staff and experts from PNNL met with the Virginia Department of Game and Inland Fisheries (VDGIF) to discuss their concerns with Dominion's application for an early site permit (ESP) at the North Anna ESP site. See Attachment 2 for a listing of the meeting participants. In the afternoon of September 21, 2005, the NRC staff and the PNNL biologist continued their tour of the North Anna River sampling stations downstream of the North Anna dam. On September 22, 2005, the staff toured Lake Anna with a commercial fishing guide and concluded with visiting the remaining sampling stations on the North Anna River as well as Contrary Creek.

At the September 20, 2005, meeting, Dominion personnel told the NRC staff that temperature loggers were installed in duplicate at 13 locations on the North Anna, South Anna, and Pamunkey Rivers to monitor downstream effects. Enclosure 4 contains the data collected. On the North Anna River, the fall line lies between Stations 5 and 6. The study began on July 20, 2005, and ended on August 8, 2005.

Dominion stated that the Pamunkey River has three known striped bass spawning areas: Sweet Hall Marsh, White House Marsh, and Liberty Hall Marsh. We visited the 3 sites as well as 11 other river sites, 8 of which were temperature log stations in the aforementioned study. Generally the data showed increased water temperature progressing downstream from the North Anna dam. According to anecdotal information, upstream migration of anadromous fish is not precluded by the fall line of the North Anna River but possibly by the old Anderson Mill Dam on the North Anna River.

VDGIF expressed three primary concerns to the NRC staff that involve: (1) impingement and entrainment, (2) downstream flow in the North Anna River, and (3) loss of striped bass habitat in Lake Anna. In particular, VDGIF is concerned that an increased frequency of low lake level conditions may result in a change in the flow regime downstream of the dam. Downstream species of interest include smallmouth bass, largemouth bass, spotted bass, blueback herring, American shad, native minnows, and all anadromous fish. VDGIF's concern is for sports fish. An increase in the downstream temperature could affect smallmouth bass. There are no verified records of anadromous fish (with the exception of striped bass assumed to be a spillover from Lake Anna) above the fall line near Route 1 on the North Anna River.

In the reservoir, VDGIF manages a stocked striped bass fishery. Phase I fingerlings are stocked annually at three middle lake sites: Anna Point, the Lake Anna State park, and Sturgeon Creek. The fingerlings are reared at the King and Queen hatchery or acquired from other reservoirs. The Chesapeake stock is used approximately 3 out of every 5 years with river stocks being used otherwise. According to VDGIF gillnet studies, striped bass growth plateaus about age 3 due to the marginal habitat in Lake Anna (plenty of forage is available in the cooler regions of the Lake). Juveniles are more tolerant of habitat squeeze (the reduction in habitat due to increases in water temperature in the Lake) and continue growth at higher rates until age 3. Therefore, the striped bass fishery is maintained and is popular, although no trophy size fish are caught in the Lake Anna reservoir. Fish appear stressed at the end of the summer. During the tour of Lake Anna, the fishing guide explained that there was a striped bass die off

(about 40-60 dead individuals) that began in early September 2005. In the guide's opinion, the fish kill was the result of stress on the fish due to high lake temperatures. Also, there are good fishing grounds for striped bass in the WHTF, most notably near Mill Creek. NRC staff measured the water temperature, visibility, salinity, flow rates, dissolved oxygen concentration, and pH in Lake Anna. Results indicate that a small thermocline does exist in the deepest part of the lake, which is just in front of the dam. However, the dissolved oxygen concentration at the thermocline is too low to be considered suitable habitat for striped bass. Measurements at four other sites in Lake Anna indicate that the majority of the lake is well mixed without stratification.

Several dead fish (two white perch, one largemouth bass, and nine striped bass) were observed during the lake tour. Some of these were recently deceased (within the last several days) while others appeared to have been dead for a week or more. These dead fish were bloated and/or decaying. Occasionally, fish kills occur in areas outside the influence of the thermal plume from the discharge of existing North Anna Power Station Units 1 and 2. Such kills appear to result from extended periods of warm weather late in summer. The fishing guide believes that bass go to the upper portion of the reservoir in the late summer to avoid elevated temperatures. The fishing guide stated that the striped bass fishing was best in the spring and late fall when the water temperature is lower.

LIST OF ATTENDEES
AUDIT OF DOMINION'S TEMPERATURE AND DISSOLVED OXYGEN DATA

SEPTEMBER 20, 2005

| Participants | Affiliations |
|---|---|
| Jack Cushing | U.S. Nuclear Regulatory Commission (NRC) |
| Michael Masnik | NRC |
| Harriet Nash | NRC |
| Duane Neitzel | Pacific Northwest National Laboratory (PNNL) |
| Lance Vail | PNNL |
| Bill Bolin | Dominion Nuclear North Anna LLC (Dominion) |
| Jud White | Dominion |
| Nat Wooding | Dominion |
| Tony Banks | Dominion |
| Bob Graham | Dominion |
| Jan Bateman | Dominion |
| Glenn Bishop | Dominion |
| George Birdsong | Dominion |
| Bob Andrews | Dominion |

LIST OF ATTENDEES
VISIT WITH THE VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES (VDGIF)

SEPTEMBER 21, 2005

| Participants | Affiliations |
|---|---|
| Jack Cushing | U.S. Nuclear Regulatory Commission (NRC) |
| Michael Masnik | NRC |
| Harriet Nash | NRC |
| Duane Neitzel | Pacific Northwest National Laboratory (PNNL) |
| Lance Vail | PNNL |
| Gary Martel | Virginia Department of Game and Inland Fisheries (VDGIF) |
| Dean Fowler | VDGIF |
| John Odenkirk | VDGIF |
| John Kauffman | VDGIF |

# Summary of the Tour of the Surry Alternative Site and the Meeting With Cultural And Historic Groups

Subject: Trip Report for Surry Power Station and Surrounding Vicinity, Virginia, Completed September 19-23, 2005. Supplemental Cultural Resources Viewshed Analysis for the *Draft Environmental Impact Statement for an Early Site Permit (ESP) at the North Anna ESP Site* (NUREG-1811, Draft Report for Comment, November 2004)

## 1. Background and Pre-field Tasks

Background

Additional analysis is needed to evaluate potential adverse effects of building and operating new nuclear power units at the Surry Power Plant site, which is included in the North Anna ESP analyses as an alternative ESP candidate site to the Proposed Action at North Anna. If the Surry alternative were selected for an ESP, the plant would include a tall plant structure (up to 234 feet in height) and a mechanical draft cooling tower, which exhibits an appurtenant plume of condensation during operation of the plant.

Since the Surry Power Plant is situated in proximity to several significant historic properties and cultural landscapes, visibility of new architectural designs could create viewshed impacts on these historic resources. When the existing plant was constructed in the early 1970s, the visual impact to nearby historic properties, especially Jamestown Island, was considered and the containment buildings were built sufficiently below grade so as to blend with the surrounding forested lands as much as possible. As constructed and operated today, the Surry Power Station includes two reactor units, each with a containment dome, and utilizes a once-through heat dissipation system that returns heated water directly to the James River and does not emit a condensation plume.

The affected environment and operating impacts of the two existing units at Surry were recently evaluated in *Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Supplement 6, Regarding Surry Power Station, Units 1 and 2* (NUREG-1437: Supplement 6, November 2002). That analysis focused on continued operational aspects of the current units for an additional 20 years of license operation. The analysis of the ESP application involves reactors of markedly different design and operational elements than the existing Surry units. Accordingly, it is necessary to evaluate the potential for adverse effects to significant historic properties in the vicinity of the sites, especially in the context of visual intrusion to the cultural landscape viewshed from such properties. Thus, the current analysis should inquire into the potential effects from an external perspective, or, put another way, looking at a new plant's visible presence from the aspect of the various historic properties.

Evaluative Approach

To evaluate the potential for adverse visual effects to historic properties in the vicinity of the Surry Power Plant site under the North Anna ESP alternative, a review was designed to include the following tasks: (1) identification of significant historic properties which could be visually impacted by a new reactor or reactors at Surry; (2) pre-field contact with state, federal, or other entities with either ownership or management responsibilities for those properties; and (3) a reconnaissance-level visit to each of the historic properties identified for the purpose of ascertaining both the current visibility of the Surry Power Plant and the future visibility of new plants at the Surry site, given the design parameters under the ESP alternative. The objective of the latter task was to determine whether the Surry plant can be seen from any of the vantage

points at historic properties, and to estimate the probability for future visual effects if a taller containment facility should be constructed and a cooling tower configuration added.

Historic Properties

Prior to visiting the project area, internet and literature searches were completed to identify potentially affected organizations and historic properties. The following significant properties were identified through this process:

(NOTE: Other historic properties are known to exist in each of the counties involved in this evaluation. If the Surry site were selected for an in-depth ESP evaluation, an additional cultural resources assessment would be necessary to identify and fully evaluate the potential effects to historic properties in the immediate vicinity.)

*National Park Service (NPS)*

Colonial National Historical Park, including Jamestown Island, the Colonial Parkway and Yorktown Battlefield

*Association for the Preservation of Virginia Antiquities (APVA)*

Co-managers, with the NPS, of Jamestown Island (the AVPA owns 22.5 acres of Jamestown Island, identified as Historic Jamestown)

APVA Historic Properties in Surry County, including:

- Smith's Fort Plantation
- Bacon's Castle
- Isle of Wight Courthouse (not visited)

*Virginia Department of Conservation & Recreation*

Chippokes Plantation State Park, including the Jones-Stewart Mansion, the River House, and various farm buildings comprising the historic landscape at the park

*Colonial Williamsburg*

Williamsburg Historic District
Carter's Grove Plantation and Wolstenholme Towne

*James River Plantations, Charles City County*

A group of privately-owned historic plantations along Highway 5 on the north shore of the James River located upriver from the Surry Power Plant. The plantations include (from east to west) Sherwood Forest, Belle Air, North Bend, Piney Grove, Evelynton, Westover, Berkeley, Edgewood, and Shirley. Most of these historic properties are open for visitation and some, such as Berkeley and Shirley, are favorite tourist destinations.

*Other*

Historic Jamestown-Scotland Ferry

The important historical characteristics, including the level of formal registration, for each of these properties are noted in Table 1.

Table 1. Historic properties in the vicinity of the Surry Power Plant

| Property | Age | Virginia Landmarks Register | National Register of Historic Places | National Historic Landmark | Other |
|---|---|---|---|---|---|
| Jamestown Island/Jamestown National Historic Site | 1607 | X | X | | |
| Colonial Parkway | 1931 | | X | | |
| Yorktown Battlefield | 1781 | | X | | |
| Chippokes Plantation | 1619 | X | X | | |
| Chippokes Plantation Historic District | 1854 | X | X | | |
| Smith's Fort Plantation | 1751 | X | X | | |
| Isle of Wight Courthouse and Smithfield Historic District | 1750 | X | X | | |
| Bacon's Castle | 1665 | X | X | X | |
| Williamsburg Historic District | 1699 | X | X | X | |
| Carter's Grove Plantation | 1600s | X | X | X | |
| Jamestown-Scotland Ferry | 1925 | | | | Virginia Historical Highway Marker K-301 |
| Sherwood Forest Plantation | 1616 | X | X | X | |
| Belle Air Plantation | 1670 | X | X | | |
| North Bend Plantation | 1819 | X | X | | |

Table 1-Continued. Historic Properties In The Vicinity Of The Surry Power Plant

| Property | Age | Virginia Landmarks Register | National Register of Historic Places | National Historic Landmark | Other |
|---|---|---|---|---|---|
| Piney Grove Plantation | 1800 | X | X | | |
| Evelynton Plantation | 1847 | X | X | | |
| Westover Plantation | 1730 | X | X | X | |
| Berkeley Plantation | 1726 | X | X | X | |
| Edgewood Plantation | 1725 | X | X | | |
| Shirley Plantation | 1660 | X | X | X | |

Pre-Field Contacts

Prior to undertaking the field reconnaissance effort, telephone contacts were made with the following persons/offices to review the proposed methodology and identify any associated issues.

Dr. Ethel Eaton, State Historic Preservation Office, Virginia Department of Historic Resources, Richmond, VA

Mr. Louis Malon, Director of Historic Properties and Collections, Association for the Preservation of Virginia Antiquities, Richmond, VA

Dr. Andrew Veech, Archaeologist, National Park Service Colonial National Historical Park, Yorktown, VA

Documents and Websites Consulted

In addition to the two Nuclear Regulatory Commission EIS documents for North Anna and Surry (noted above), other documents and data examined as part of this evaluation include the following:

Birnbaum, Charles A. 1994. *Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes.* National Park Service, Technical Briefs No. 36. Washington, DC.

Birnbaum, Charles A., Editor. 1996. *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.* National Park Service, Heritage Preservation Services, Historic Landscape Initiative, Washington, DC.

Fox, William. 2000. *Ferries Forever: 75 Years on the Jamestown-Scotland Ferry.* Steamboat Bill, Journal of The Steamship Society of America, Volume 57, Number 4, pp. 281-294.

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller, and Robert Z. Melnick. 1999. *Guidelines for Evaluating and Documenting Rural Historic Landscapes.* National Park Service, National Register Bulletin No. 30, Washington, DC.

Mullin, John. 2001. *Cultural Resource Assessment: Surry Power Station, Surry County, Virginia.* Report prepared for Dominion Resources, Inc. by The Louis Berger Group, Inc., Richmond, VA.

U.S. Department of the Interior. 2000. *National Register of Historic Places Documentation: Colonial Parkway, Colonial National Historic District*. National Park Service, Philadelphia Support Office.

U.S. Department of the Interior. 2003. *The Jamestown Project: Final Development Concept Plan/Environmental Impact Statement.* National Park Service, Colonial National Historical Park, Jamestown Unit, and Association for the Preservation of Virginia Antiquities, Jamestown National Historic Site, Jamestown, VA.

Virginia Listing of National Historic Landmarks - http://www.cr.nps.gov/nhl/designations/Lists/VA01.pdf

Virginia National Register of National Register of Historic Places and Virginia Historical Landmarks Listings – http://www.dhr.virginia.gov/registers/register.htm

National Park Service, Colonial National Historical Park - http://www.nps.gov/colo/; including the document, *Strategic Plan for Colonial National Historical Park, Fiscal Year 2001 – 2005,* (http://data2.itc.nps.gov/parks/colo/ppdocuments/fy01-05.pdf)

Association for the Preservation of Virginia Antiquities, Historic Properties List - http://www.apva.org/apva/properties.php

James River Plantations - http://www.jamesriverplantations.com/

Virginia State Parks, Chippokes Plantation State Park - http://www.dcr.state.va.us/parks/chippoke.htm

Colonial Williamsburg - http://www.history.org/

## 2. Field Evaluation

A reconnaissance-level field visit to the Surry Power Plant and surrounding vicinity was conducted during the period September 19-23, 2005. Historic properties visited are indicated in Table 2.

Table 2. Historic Properties Visited

| Place | Date of Visit | Contact | Activity |
|---|---|---|---|
| Historic Jamestowne, Jamestown Island, James City County | September 20, 2005 | Visitor Center-Museum | Visit only |
| Smith's Fort Plantation, Surry County | September 20, 2005 | Ms. Misti Furr, Site Manager | Toured grounds and house; took photographs from front steps in the direction of the Surry Power Plant, from three east-facing windows on the second floor, and from the first floor bedroom window, also facing east |
| Bacon's Castle, Surry County | September 20, 2005 | Mr. Marshall Blevins, Site Interpreter | Limited tour of house and grounds; photographs from second and third story stair landings at rear of house, facing northeast toward Surry Power Plant; from "artifact" room on first floor looking north; and from grounds on north side of house. |
| Chippokes Plantation State Park, Surry County | September 20, 2005 | Visitor Center: Ms. Dannette Poole, Park Manager; Jones-Stewart Mansion at Park: Mr. R.J. Kuykendall, Chief Ranger | Photographs taken northeasterly toward Surry from the observation area at the back of the Visitor Center, at bank above the James River. The tops of the switchyard and transmission structures at the power plant are visible from this vantage point.<br><br>The Chippokes Plantation Historic District was also visited, including the Jones-Steward Mansion and the River House. Photographs were taken from the cupola of the mansion and from a point about 50 meters northwest of the rear of the River house. The Surry Plant is not presently visible from the mansion, even from the third floor, but the tops of the switchyard and transmission structures can be seen near the River House. |

Table 2-Continued. Historic Properties Visited

| Place | Date of Visit | Contact | Activity |
|---|---|---|---|
| Jamestown Island and Colonial Parkway, Colonial National Historical Park, James City County | September 21, 2005 | National Park Service staff: Karen Reem, Park Historian; Andrew Veech, Park Archaeologist; Dorothy Geyer, Park Landscape Architect; Curt Gaul, Unit Manager for Jamestown Island | A meeting was held on September 21 with the Colonial National Historical Park staff listed in the preceding column. Following the meeting, a visit was made to Black Point at the far eastern end of Jamestown Island where there is a full view of the Surry Plant across the James River, including views of the discharge canal, parking lot, administration building, both containment domes, and the switchyard. A stretch of the Colonial Parkway north of Jamestown Island was traveled, roughly from Mill Creek on the west to College Creek on the east, a segment about 3 miles in length. The Surry containment domes and switchyard structures are visible above the trees from each of the four overlook pull outs along this segment. Photographs were taken at each overlook. |
| Historic James River Ferry | September 20-21, 2005 | Virginia Historical Highway Marker K-301 | The modern ferry was used on two occasions to cross the James River from James City County to Surry County. The tops of both Surry containment domes are visible during the crossing, although the plant disappears from sight as the ferry approaches Jamestown, being cut off by the edge of Jamestown Island and the trees. |
| Surry Power Plant and Hog Island Wildlife Management Area, Surry County | September 21, 2005 | Mr. Tony Banks, Dominion Resources, Inc. | A vehicular tour of the Surry Power Plant and adjacent Hog Island Wildlife Management Area was conducted, including a stop at the northwest shore of the plant site where Jamestown Island is in view to the northwest (the opposite view from Black Point on the island) |
| Carter's Grove Plantation, Colonial Williamsburg, James City County | September 22, 2005 | | A site visit was attempted at this historic property; however, it is closed for renovation and access to the riverbank was not possible. An unsuccessful attempt was made to access the river at a nearby point. |
| Colonial National Historic Park Headquarters, York County | September 22, 2005 | Ms. Becky Egleston, Secretary to the Park Superintendent | The Colonial National Historical Park Headquarters was visited to obtain a copy of the Jamestown Project Final EIS and review the National Register of Historic Places |

| | | | |
|---|---|---|---|
| | | | nomination for the Colonial Parkway. |

Table 2-Continued. Historic Properties Visited

| Place | Date of Visit | Contact | Activity |
|---|---|---|---|
| Jamestown Settlement, Jamestown-Yorktown Foundation, James City County | September 22, 2005 | Visitor Center-Museum | Visit only |
| James River Plantations, Charles City County | September 23, 2005 | Berkeley, Piney Grove, and Shirley Plantations | Spot visibility checks were made along the area for the James River Plantations, located upriver and northwest of the Surry Power Plant. |

Other Aesthetic Considerations

During meetings with both NPS technical staff at Colonial National Historical Park and Virginia Department of Conservation and Recreation staff at Chippokes Plantation State Park, an issue was raised related to visual intrusion by new units that might be constructed at the Surry site on nearby residential developments. In the case of Surry County, the development would be located downriver from the plant near Smithfield. In James City County, the housing development is along the north James River shoreline, across the river from Hog Island. While noted, neither of these developments would be a cultural or historic resource and are not further analyzed in this report.

## 3. Preliminary Findings

Tables 1 and 2 list the historic properties visited during the field reconnaissance evaluation for the Surry plant viewshed analysis and outline the activities conducted at each site. The Isle of Wight Courthouse was not visited and the assessment is based on distance and elevation factors. Carter's Grove Plantation was visited, but entry could not be gained due to closure. As a consequence, the viewshed across the James River from this property is estimated.

Table 3 provides the preliminary findings based on the field evaluation. In general, at historic properties where elements of the plant site are currently visible, the addition of taller structures and a condensation plume from cooling towers would add to the visual intrusion. It is probable that a condensation plume would be seen from other properties that currently do not have a direct line of sight to the plant facilities. The visibility of such a plume would be differentially seasonal and related to weather conditions. On colder days, tall plumes of condensation could be seen; on warmer days, only small plumes would be visible.

At certain nearby historic properties, such as Bacon's Castle, the Chippokes Plantation Historic District, and the Fort Smith Plantation, a condensation plume would probably only be partially visible, depending on the vantage point. For example, under certain weather conditions, a tall plume could probably be seen from some upper level windows at both Bacon's Castle and Fort Smith Plantation; however, the view would be brief as visitors passed by some windows. Even at these windows, adjacent trees and other vegetation usually partially obscure the viewshed in

the direction of the Surry Power Plant. It seems unlikely that a plume from the Surry plant would be visible from any of the James River Plantations upriver of the Surry plant. In the case of the Shirley Plantation, one of the most visited of these properties, there are already highly visible industrial facilities and power plants located just across the James River from the historic property in the vicinity of the City of Hopewell.

With the exception of the Colonial National Historical Park, which is discussed in more detail below, potential visual impacts from either the existing plant configuration or a new ESP layout and operation would be small to moderate. In the case of the latter, moderate adverse visual intrusions would probably not be continuous and would be associated with intermittent visibility of a condensation plume with inconsistent dimensions.

Table 3. Results of Preliminary Viewshed Analysis

| Historic Property | Approximate Distance from Surry Power Plant | Direction from Surry Power Plant | Is Surry Power Plant currently visible? | Would ESP taller containment structure be visible? | Would ESP cooling tower condensation plume be visible? |
|---|---|---|---|---|---|
| Jamestown Island | 3 miles – to Black Point | Northwest | Yes | Yes | Yes |
| Jamestown National Historic Site | 5.5 miles to Jamestown Ruins | Northwest | No | Probably Not | Possibly |
| Colonial Parkway | 3.5 miles +/- | North | Yes | Yes | Yes |
| Yorktown Battlefield | 13 miles | Northeast | No | No | No |
| Chippokes Plantation State Park | 1 mile | Southwest | Yes | Yes | Yes |
| Chippokes Plantation Historic District | 1 mile | Southwest | Yes | Yes | Yes |
| Smith's Fort Plantation | 7 miles | West | No | No | Possibly |
| Isle of Wight Courthouse/Smithfield Historic District | 18 miles | Southeast | No | No | No |
| Bacon's Castle | 2 miles | South | No | No | Possibly |
| Williamsburg Historic District | 8 miles | North | No | No | Possibly |
| Carter's Grove Plantation | 6 miles | Northeast | Probably Not | Possibly | Possibly |
| Jamestown-Scotland Ferry | 5 miles | Northwest | Yes | Yes | Yes |
| James River Plantations | 20 – 35 miles | Northwest | No | No | Probably Not |

The Colonial National Historical Park (NHP), particularly the Jamestown Unit and the associated initial stretch of the Colonial Parkway that extends eastward along the shoreline of the James River, and the Jamestown National Historic Site would be the most directly visually impacted. The Colonial NHP is managed by the National Park Service while the adjoining Jamestown National Historic Site is owned and managed by the Association for the Preservation of Virginia Antiquities. In the words of the co-managers: "Jamestown is a world-class cultural historic site that needs to be promoted, explored, and fully presented to

communicate its significance in

history." (Jamestown Project FEIS). In 2007, the property will commemorate its 400th Anniversary.

Based on the recent field reconnaissance, the only public vantage point from which the existing Surry site can be seen on Jamestown Island is at the far eastern end of the island where visitors following the loop road can park and follow a short path to the river's edge. At that point, a full ground-level view of the existing plant is possible to the southeast, at a distance of about 3 miles (Figure 1: View 1). At the time of our visit, the view was hazy and field glasses were needed to distinctly make out plant features, including both containment domes, the administrative buildings, parking lots, the switchyard, and the discharge canal. With a clearer view, the plant could be easily seen from this view point. A new ESP physical and operational configuration would create a significant added visual intrusion from this part of the island.

Due to the geographic configuration of the island and the vegetation, the existing plant is not presently visible from the Jamestown site itself, located toward the west end of the island. However, it is conceivable that a condensation plume would be visible from the most significant historical area.

The historic Colonial Parkway connects Jamestown and Yorktown and was designed and built as a curvilinear, scenic route with expansive views of both the James and York Rivers. For this analysis, a nearly 3-mile stretch along the north bank of the James River is important (Figure 1). Along this length, extending from Mill Creek on the west to College Creek on the east, the compelling characteristic of the Parkway is the availability of southerly views and vistas of the river. According to the National Register of Historical Places documentation for the parkway, the length under scrutiny here was purposefully set back from the river's edge so that the river (and Surry County shoreline) is viewed over a larger expanse of open, mowed land. Following the NPS landscape analysis, southerly views from this segment of the Parkway are classified as both open vista and filtered/blocked views.

Four view points (Nos. 2-5 in Figure 1) were selected for analysis, with the Mill Creek Overlook (Figure 1: No. 2) on the west end being the initial spot where the existing Surry plant comes into view when traveling east on the Parkway and the overlook near College Creek (Figure 1: No. 5) being the final view of the plant before the Parkway turns north toward Williamsburg. In general terms, the view of the plant from each of these view points is as follows (see Figure 1):

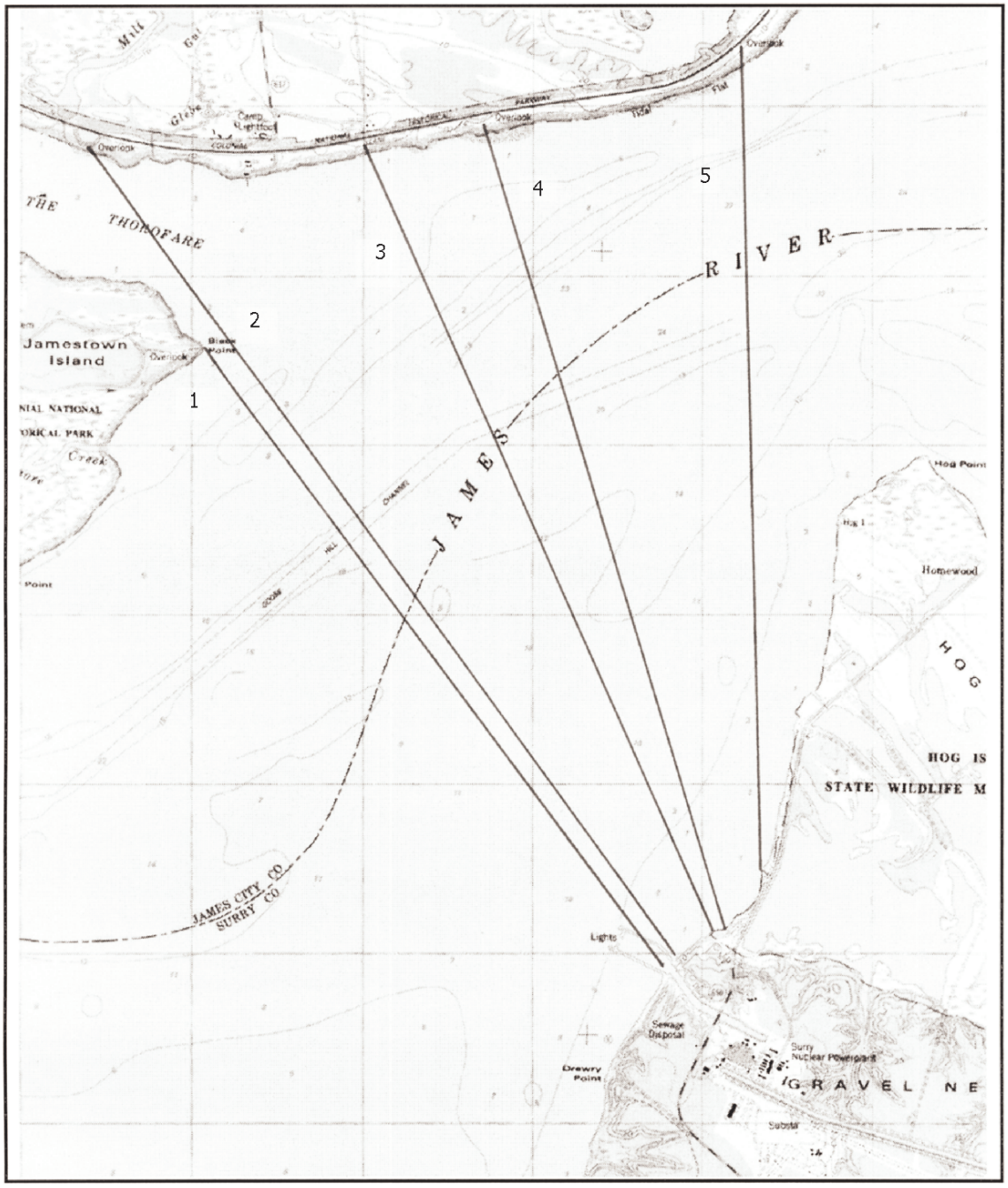


Figure 1. Map showing view points toward the Surry Power Plant from Colonial National Historical Park (from USGS 7.5' Hog Island Quadrangle; Scale: 1.5" = ca. 1 Mile). View points, from left to right, include: 1 - Jamestown Island, Black Point; 2 - Mill Creek Overlook, 3 - just west of modern farm; 4 - Archer's Hope Overlook, and 5 - James River Overlook, all situated along the Colonial Parkway.

Mill Creek Overlook (No. 2) – A nearly full view of the plant is possible to the southeast (Figure 2) as this view angle is not markedly different from View Point No. 1 on Jamestown Island. View Point No. 3, near a modern farm – A southeast view of the tops of the containment domes and the switchyard and transmission structures can be seen from this vantage.

Archer's Hope (No. 4) - A southeast view of the tops of the containment domes and the switchyard and transmission structures can be seen from this vantage point; similar to View Point No. 2.

James River Overlook (No. 5) – Because of a dip in the tree line along the southern shore of the river, the plant features are more visible from this overlook than from the previous two, with at least the upper half of the containment domes or more in the viewshed to the south. The transmission and switchyard structures are also observable. The distance from this overlook to the plant is about the same as from Black Point on the island.

Figure 2. View of the Surry Power Plant across the James River from the Mill Creek Overlook (View Point No. 2 on Figure 1) along the Colonial Parkway, a component of the Colonial National Historical Park. The view is to the southeast.

Based on the high level of historical significance attributed to the Jamestown historical features and the fact that current views of the Surry Power Plant range from full to partial, from both the island and the Colonial Parkway, even more visible plant structures and the added cooling towers and condensation plumes would constitute a major visual intrusion from this significant historic property. This point was verbally made by Colonial NHP staff during the September 21, 2005, meeting. In addition, it is probable that a condensation plume at the Surry plant could be seen from areas on both Jamestown Island and the Colonial Parkway where the current plant configuration cannot be seen today. In the context of an ESP with a building height of 234 feet at the Surry site, the visual impacts to Colonial NHP and the Jamestown National Historical Site would be considered clearly noticeable and would be sufficient to possibly destabilize the

viewshed.

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 001 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | Jacob Faulcon House | West |
| 002 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | From front steps | East – toward general direction of Surry plant |
| 003 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | From south dormer window, second story front view | East – toward general direction of Surry plant |
| 004 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | From north dormer window, second story front view | East – toward general direction of Surry plant |
| 005 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | From center dormer window, second story front view | East – toward general direction of Surry plant |
| 006 | September 20, 2005 | Smith's Fort Plantation, Surry County, Virginia | From the southern most bedroom window on first floor front view | East – toward general direction of Surry plant |
| 007 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From third floor stair landing window, rear of house | North – toward general direction of Surry plant |
| 008 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From second floor stair landing window, rear of house | North – toward general direction of Surry plant |
| 009 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From "artifact" room, first floor | North – toward general direction of Surry plant |
| 010 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From stair landing, entry to first floor at rear of house | North – toward general direction of Surry plant |
| 011 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From north side of house, grounds | North – toward general direction of Surry plant |
| 012 | September 20, 2005 | Bacon's Castle, | Front of Allen | Northwest |

| | | | | |
|---|---|---|---|---|
| | | Surry County, Virginia | Plantation House | |

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005 (Cont.)**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 013 | September 20, 2005 | Bacon's Castle, Surry County, Virginia | From grounds in front of house | North - toward general direction of Surry plant |
| 014 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From edge of view area, rear of Visitor Center - tops of switchyard and transmission structures in view | Northeast - toward general direction of Surry plant |
| 015 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From edge of view area, rear of Visitor Center - tops of switchyard and transmission structures in view | Northeast - toward general direction of Surry plant |
| 016 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | Jones-Stewart Mansion | Northwest |
| 017 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From third story cupola of mansion | Northeast - toward general direction of Surry plant |
| 018 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | Front of Jones - Stewart Mansion | North |

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005 (Cont.)**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 019 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | North side of Jones-Stewart Mansion showing lack of upper story windows | South |
| 020 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From point behind Jones-Stewart Mansion | North - toward general direction of Surry plant |
| 021 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From point behind Jones-Stewart Mansion | North - toward general direction of Surry plant |
| 022 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | Front of Jones-Stewart Mansion | East |
| 023 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | Front of Jones-Stewart Mansion | East |
| 024 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | River House | Northwest |
| 025 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | From point north of River House, very tops of containment dome and switchyard in view | Northeast - toward general direction of Surry plant |
| 026 | September 20, 2005 | Chippokes Plantation State Park, Surry County, Virginia | Chippokes Plantation Historic District, from front gate of Jones-Stewart Mansion toward River House | Northwest |

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005 (Cont.)**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 028 | September 21, 2005 | Jamestown Island, James City County, Virginia | From Black Point, Jamestown Island, hazy view, Surry Power Plant in veiw | Southeast - toward Surry plant across James River |
| 029 | September 21, 2005 | Jamestown Island, James City County, Virginia | From Black Point, Jamestown Island, hazy view, Surry Power Plant in view | Southeast - toward Surry plant across James River |
| 030 | September 21, 2005 | Jamestown Island, James City County, Virginia | From Black Point, Jamestown Island, hazy view, Surry Power Plant in view; breakwater in foreground | Southeast - toward Surry plant across James River |
| 031 | September 21, 2005 | Colonial Parkway, James City County, Virginia Colonial Parkway, James City County, Virginia | From Mill Creek pullout on Colonial Parkway, hazy view, Surry Power Plant in view | Southeast - toward Surry plant across James River |
| 032 | September 21, 2005 | Colonial Parkway, James City County, Virginia | From Mill Creek pullout on Colonial Parkway, hazy view, Surry Power Plant in view | Southeast - toward Surry plant across James River |
| 033 | September 21, 2005 | Colonial Parkway, James City County, Virginia | Modern farm on Colonial Parkway | North - toward Surry plant across James River |

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005 (Cont.)**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 034 | September 21, 2005 | Colonial Parkway, James City County, Virginia | From Archer's Hope pullout on Colonial Parkway, hazy view, Surry Power Plant in view | Southeast - toward Surry plant across James River |
| 035 | September 21, 2005 | Colonial Parkway, James City County, Virginia | From James River pullout on Colonial Parkway, hazy view, Surry Power Plant in view | South - toward Surry plant across James River |
| 036 | September 21, 2005 | Scotland, Surry County, Virginia | View of the Jamestown-Scotland Ferry | North - across the James River toward Jamestown Island |
| 037 | September 21, 2005 | Scotland, Surry County, Virginia | Close-up of Virginia Highway Historic Marker | North |
| 039 | September 21, 2005 | Surry Power Plant, Surry County, Virginia | View of Surry Power Plant from the discharge canal; similar angle as from Black Point on Jamestown Island | Southeast |
| 040 | September 21, 2005 | Surry Power Plant, Surry County, Virginia | View of Surry Power Plant from the discharge canal; similar angle as from Black Point on Jamestown Island | Southeast |
| 041 | September 21, 2005 | Surry Power Plant, Surry County, Virginia | From same point as previous shot, looking across James River toward Jamestown Island | Northwest |

**PHOTOGRAPH LOG – Surry Power Plant and Vicinity: Cultural Resources Viewshed Evaluation, September 19-23, 2005 (Cont.)**

**NOTE:** Photo files are available in ADAMS under Accession Number ML060570003, ADAMS is accessible through the NRC website at http://www.nrc.gov/reading-rm.html.

| Surry. jpg # | Date | Location | View | General Direction |
|---|---|---|---|---|
| 044 | September 21, 2005 | Surry Power Plant, Surry County, Virginia | Switchyard, Surry Power Plant | North |
| 045 | September 21, 2005 | Colonial Parkway, James City County, Virginia | From Mill Creek pullout on Colonial Parkway; similar view as Photo No. 032 in late afternoon - less haze | Southeast |

# Summary of the Tour of the Vicinity Surrounding , the Proposed North Anna ESP Site

This report summarizes the tour, by Michael Scott, of the area around the North Anna Early Site Permit (ESP) Site near Mineral, Virginia and the Surry Power Station (Surry) site near Surry, Virginia. North Anna is the applicant's preferred site in the North Anna early site permit (ESP) application, while Surry is one of three alternative sites. The purpose of the visit was to examine in greater detail selected features of the socioeconomic environment surrounding these two sites in support of the ongoing ESP review for the North Anna ESP site.

Mr. Scott toured the routes into the North Anna site from nearby major population centers to observe the quality of the road network that would support travel to work during the construction and operations periods as well as recreation in the Lake Anna area. I drove the approach to the Lake from downtown Richmond, VA using U.S. Highway 33, then Wickham-Diggstown Road (601), continuing on Bumpass Road (also Route 601) to the southeast end of the Lake. This took a little over an hour during morning rush hour. Traffic was not especially heavy on U.S. 33, and flowed smoothly except for stoplights. One could use this route to commute into the North Anna ESP site using either the Routes 618 and Route 700 or Routes 652 and 700. Route 601 is fairly narrow and would not be recommended for heavy traffic, but is paved and in good shape. All North Anna traffic would have to pass through the flashing signal where the Route 700 access road crosses Route 652 outside of the plant. This is an intersection with the potential for congestion during rush hours unless the light is upgraded to a standard red-yellow-green signal, probably with left turn lanes.

Observation: The fastest route to the plant from Richmond is probably I-64 from Richmond, then U.S. 522, Route 700 cutoff, Route 618, and then Route 700. Route 700 is recently paved and striped between Routes 618 and Route 652 and would be a good commuting route. It does not have heavy-duty pavement in this stretch and probably would break down under heavy truck traffic. However, U.S. 522 and Route 652 are available for heavy trucks. My commute time for this route from downtown Richmond is about one hour and twenty minutes, probably an hour or less from Richmond's western suburbs.

The initial approach to the plant from Fredericksburg is via Route 208 and Route 652. This route is mostly 50 to 55 mph road on good, wide two-lane highway. The north end of 208 is 4-lane with traffic signals. The only significant slowdown is through the Spotsylvania Courthouse area, where Route 208 dead-ends in a "T" intersection that requires first a tight left turn, then a tight right turn at a second traffic signal. Route 208 then shortly broadens out again into a easy to drive broad two-lane road. The Courthouse area Route 208 is 25 mph for a few city blocks. There were some commercial trucks, but no tractor-trailer (18 wheel) rigs. The route, including through the Spotsylvania Courthouse area, was quite acceptable for a car, but possibly not for heavy trucks. Commute time from the north end of Route 208 in Fredericksburg to the plant gate was 46 minutes at mid-day, and might be slightly longer at rush hour.

Mr. Scott traveled but did not time-test the route from Fredericksburg via I-95 and Route 606 to Thornburg, then Routes 208 and 652 to the North Anna site. Possibly because of the time of day (early afternoon) there was no congestion on this route. This would be a better heavy-truck route, with a greater percentage of 4-lane road, and travel times are likely to be comparable with those for Route 208-Spotsylvania Courthouse route.

From Charlottesville, the most direct route may be I-64, then Route 208 to Louisa, Route 22-208 to Mineral, then Route 700 to the North Anna Site. A map reconnaissance was performed

but this route was not traveled except from Mineral into the North Anna site. From Culpeper, the

most direct route appears to be U.S. 522, then Routes 208, 652 and 700. The route was not traveled except for Route 208-652-700 part, all of which was good road.

Truck traffic from Richmond could take either I-64-U.S. 522-Route 208-652-700, or U.S. 33-U.S. 522-Route 208-Route 652-Route 700. Route 700 between Routes 618 and 652 is not recommended for heavy trucks.

The road surface of Route 601 around the east end of Lake Anna is in good shape (no potholes) and appears to exist primarily for recreation access. It is quite narrow and the counties would like to widen it for camper and boat traffic on the weekends.

Overall, Mr. Scott was impressed by the good quality and current state of repair of the roads in Louisa County and Spotsylvania County observed. There are a few points that could become congested during the construction period (most notably, the intersection of Routes 652 and 700 near the plant gate, and possibly the Courthouse Square area on Route 208 in Spotsylvania County), but overall it is expected that impacts related to road access from construction and operation would be small. There may be some moderate-level impacts on traffic flow at the congestion points if no upgrades at all are done between now and when any future plant is constructed.

Neighborhoods Surrounding Lake Anna

Neighborhoods on the north side of Lake Anna were not visited. Many were at the end of private roads and some were gated. Most seemed to be well off of Route 601 and were not observable from the road.

Mr. Scott drove by or into each marina on the north side of the Lake. Dukes Creek Marina had fairly steep access to the water on what seems to be a small cove off the creek. Lake Anna Marina was closed on Tuesday. Sturgeon Creek, Rocky Branch. Anna Point, and High Point Marina were all close together on the north side of Lake Anna near the point where Route 208 crosses the lake. Anna Point has covered “Boatel” dry storage for boats. The visitors center at Lake Anna State Park was also inspected. The lake level appeared to be down about a foot, and would have made getting into or out of a boat a bit difficult. All private docks observed on this side of the lake (and the vast majority of docks observed overall) are fixed height structures. Floating docks that adjust automatically to the water level might be a good idea on Lake Anna, since the lake level fluctuates. However, in some places when the water is down, it also may recede so far that a floating dock may not be useful.

Several neighborhoods on the south side of Lake Anna were visited emphasizing those with water frontage on the Waste Heat Treatment Facility. This included Aspen Hill, Eagles Nest, Tara Shores, Tara Woods, Bear Castle, Sandy Point, Long Way, Long Acres, Tyler View, Peaceable Kingdom, and Foxwood Manor. All areas were not reachable to casual inspection, and there was almost no public access to the WHTF. Mr. Scott noted that surface water was lukewarm to the touch where water enters the main lake at Dike 3.

Observations on the neighborhoods:

Aspen Hill (straight across from the plant outfall behind Dike 1). The housing stock seems "nice" but not spectacular. From the end of Lake View Drive (Carr Circle), you can sight straight

up the outfall canal to the existing North Anna plant. Mr. Scott was not able to determine if these houses have direct access to the lake (the map suggests that the shoreline here is zoned "industrial" because it is within the one-mile exclusion zone. The one-mile zone for the ESP site (which is slightly closer) appears to cut through these properties. The homeowners association has a mini-marina with wet slips on Sedges Creek at the bottom of the hill. Little could be observed from the road. Examination of Louisa County's Geographic Information System map for this area showed that individual waterfront properties range from $250,000 to $450,000 in value, certainly not the most expensive on the lake. Mr. Scott also visited the Barbara Road-Connie Lane area and didn't note anything remarkable about the housing stock there.

It was noted that the housing stock in the Long Acres neighborhood appeared more expensive on the point and the side facing toward Millpond Creek than along the access road coming in. There were some "nice" homes on Busbee Point, but one smaller one appeared to be a little used or abandoned, with very high weeds in the yard. Waterfront properties range in value from $400,000 to $700,000.

An attempt was made to visit the Ruth Estates neighborhood, but was thwarted by the "private" sign at the entrance. Property values on the GIS map appear to range between about $400,000 and $650,000.

Jerdone Island was visited. Foxwood Manor (Sir Walter Drive) has several expensive homes. Tyler View also appeared to have more expensive homes. I was told later, but was not able to confirm via the county GIS map, that one Tyler View property sold recently for $2 million. "Warm side" values could be quite high. The Section "C" area on Dike 2 had a wide range of values ($300,000 to $700,000). On Dike 3, Walkups Cove property ranged in value from $300,000 to $650,000 and Covenant Cove ranged from $500,000 to over $950,000.

Sandy Point and Longway areas were visited, but nothing exceptional was noted about the housing stock. Sandy Point waterfront properties mostly range from $400,000 to $500,000 in value, with a handful in the $650,000 to $750,000 range facing the intake canal to Dike 2. Longway properties range from $450,000 to $650,000.

On the north side of Elk Creek in Both Water Estates, the GIS map shows one property on Mosses Point worth $850,000 and several in Both Water Estates in the $600,000 to $700,000 range. The Double Tree area is a little lower, at $350,000 to $650,000. Value seems to have more to do with the kind of development than the location relative to the North Anna plant on the WHTF.

Based on observations of the neighborhoods and the property values recorded on Louisa County's GIS map, Mr. Scott concluded that the properties on WHTF do not reach as high a value as some of the more spectacular view properties on the main part of Lake Anna. However, there are many properties over $450,000 in value (and according to the GIS map, at least one in Both Water Estates worth $850,000). There is one property valued at $950,000 just north of Route 652 on the Aspen Hill side of the bridge between Thelma Winston and Sandy Point neighborhoods.

Thus being on “warm side” of the lake (WHTF) does not appear to be a depress property values. There are, however, fewer big-vista “view” properties than on the main lake.

Observations made from a boat tour on Lake Anna on September 22, 2005:

Mr. Scott noted several spectacular and obviously expensive homes with extensive waterfront on the main lake. Several of these were on the north shore of the lake. Mr. Scott had no actual data on property values on these houses, however, based on values for similar or inferior properties on the Louisa side of the lake, several of these properties must be worth well over $1 million. These high value properties were observed at Fisherman’s Cove, Emery Point, Stubbs Lake View, Prince Dominion, Windwood Coves, Grand View, Contrary Creek-Seclusion Estates, and Harris Point areas. None was within the WHTF area of the lake . All are on peninsulas with considerable waterfront. Several have elaborate entertainment areas in conjunction with their boat houses.

There is a new development being planned on or near Boxley Point.

Surry Power Station Site:

On September 21, 2005, Mr. Scott visited the Surry Site, including the Hog Island Tract wildlife refuge, with Tony Banks from Dominion, Jack Cushing and Jennifer Davis from NRC, and Paul Nickens, a cultural-historical expert from Tucson, subcontracted to PNNL. We spent about three hours touring the plant area, including the wildlife refuge.

An issue at Surry is visual aesthetics, combined with the historical and cultural value of the Jamestown site directly across the river. We evaluated the potential visibility of new structures and cooling tower plumes at Surry (the existing site has once-through cooling, but a new plant would not). We crossed the James River to the Jamestown area and examined the existing facility from several angles. The domes of existing plant are barely visible from Jamestown proper. However, due to a gap in the trees, the whole plant is visible from Black Point at the east end of Jamestown Island, and from directly behind the east end of Jamestown Island on the Colonial Parkway at Mill Creek. A 234 foot tall building, and the plume from a mechanical draft cooling tower, would be readily visible over the trees that conceal the existing Surry plant. The plume and/or cooling towers might be visible from some nearby surrounding settlements other than Jamestown. See Paul Nickens’ report covers extensively the viewsheds from nearby locations and the results of his examination will not be repeated here.

Except for the Jamestown situation, more properly described as a cultural-historical impact, the aesthetic visual impact of a new nuclear plant at Surry likely would be moderate--clearly visible from a distance, but not completely disruptive of the viewshed in the area.