

**Surry – Skiffes Creek 500kV Line
Skiffes Creek Switching Station
Skiffes Creek – Whealton 230kV Line**

September 2014

Agenda

- ▶ **Need Drivers**
- ▶ **Timing Consequences**
- ▶ **Thorough Review Process**
- ▶ **Best Option as Approved by PJM and Virginia SCC**
- ▶ **Construction Details**
- ▶ **Schedule Implications**

Surry Skiffes Creek 500kV



**Dominion Assigned
Baseline Project with
PJM Id**

b1905.1 through b1905.9

Scope

- Build a new 7.7 mile Surry to Skiffes Creek 500kV line
- Build a new 20.25 mile Skiffes Creek - Whealton 230kV line
- Build a new Skiffes Creek 500 / 230kV switching station
- Upgrade Surry, Whealton, and seven other substations



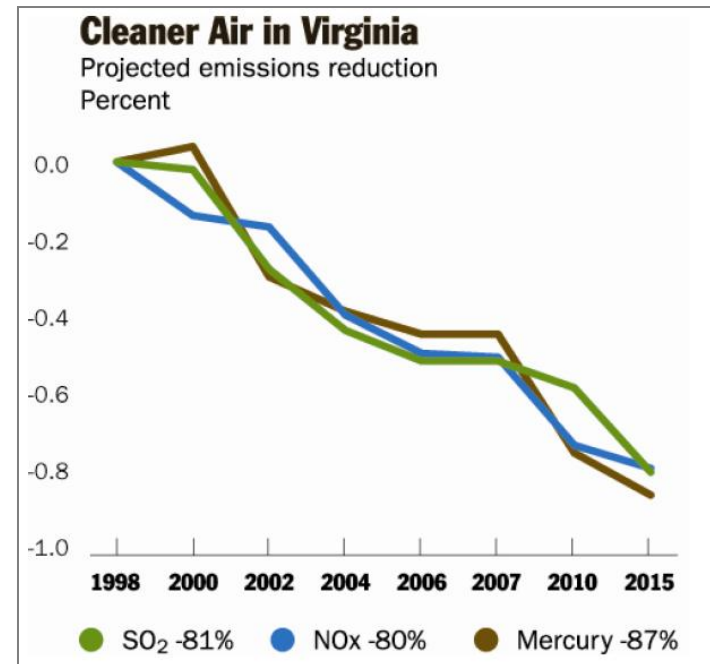
Background and Need

- ▶ **Dominion has been addressing reliability in Williamsburg/Newport News area for years**
 - Peninsula is geographically isolated with little generation
 - Sustained economic growth
- ▶ **A 500 kV circuit to reinforce the Peninsula was initially identified as needed in 2019, independent of generation retirements**
 - MATS compliance requires the retirement of Yorktown units 1 & 2 by April 2015, accelerating the need for a 500 kV circuit to be in service by summer 2015



Consequences of Project Delays

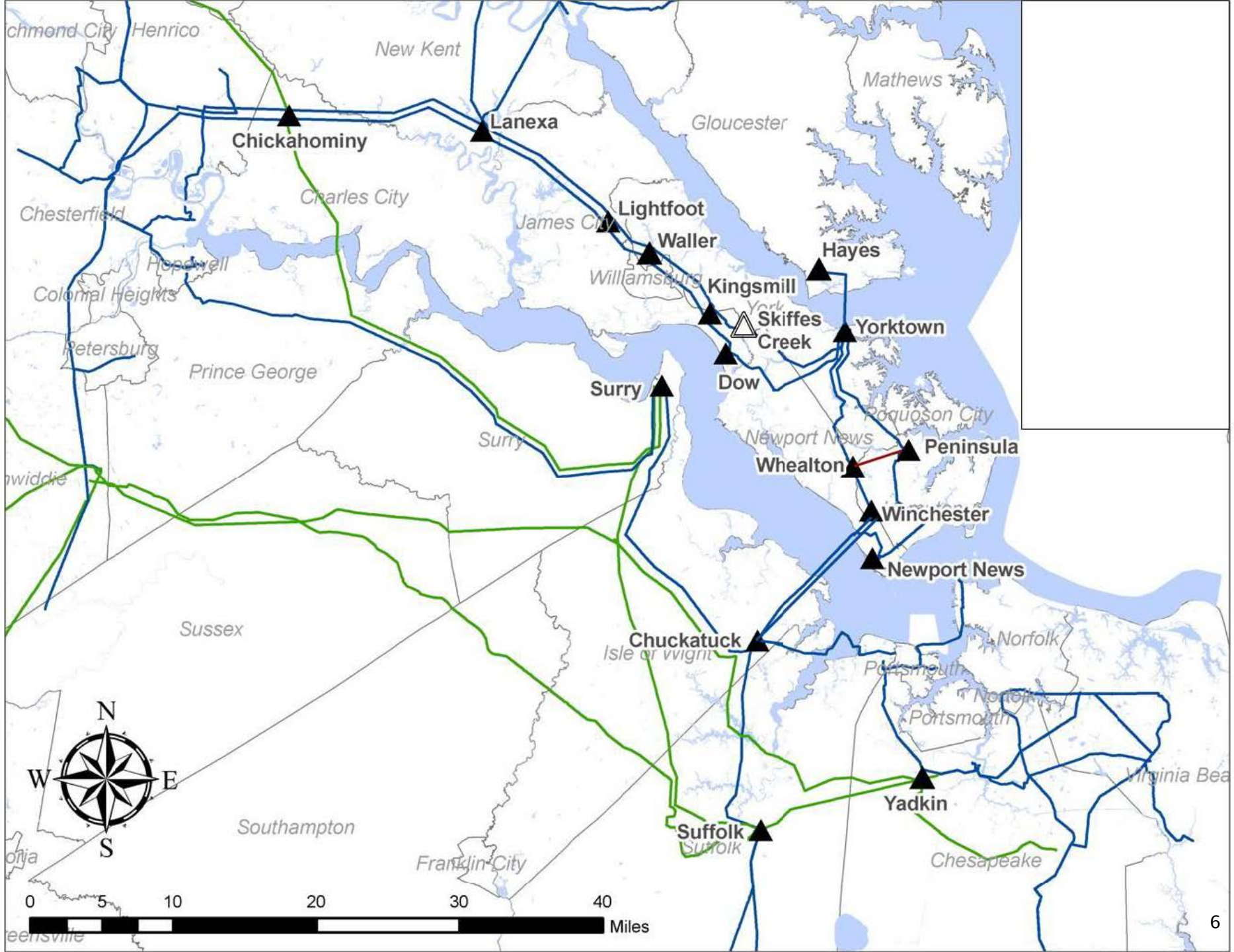
- ❖ *VA DEQ is authorized, and has granted, an extension of the retirement date for the Yorktown units for one year, until April 2016*
- ❖ *EPA is only authorized to grant an extension of the retirement date for the Yorktown units through the Administrative Order Policy for one additional year, until April 2017*
- ❖ *Without the Skiffes Creek projects in service, risks include*
 - Required load-shed (rotating outages to customers in region)
 - Blackouts across the North Hampton Roads load area

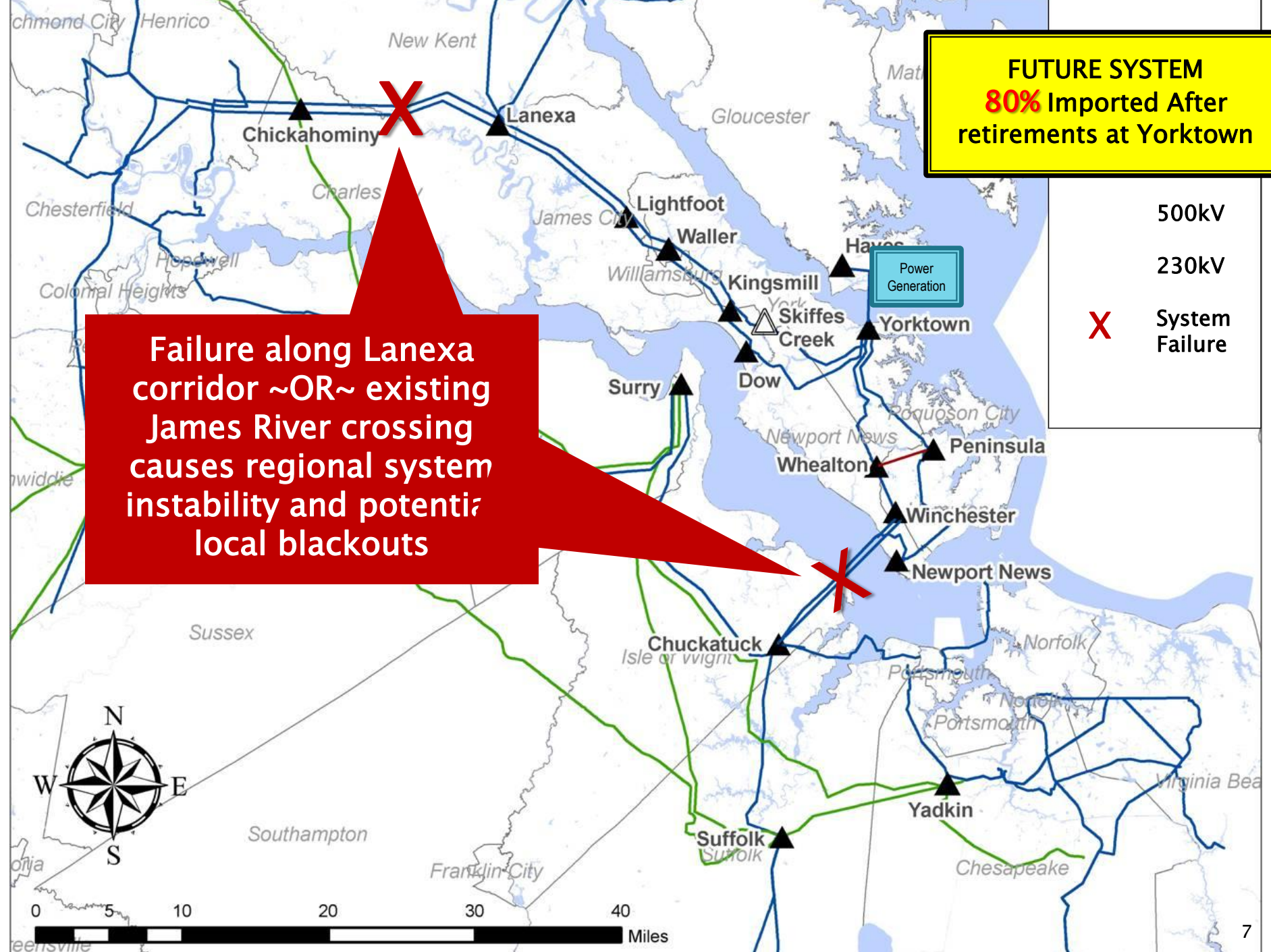


Key Regional Characteristics

- ▶ **North Hampton Roads load area includes over 285,000 customers, including**
 - **Newport News Shipbuilding**
 - **Joint Base Langley-Eustis**
 - **Yorktown Naval Weapons Station**
 - **NASA**
 - **Canon**
 - **Anheuser-Busch & Busch Gardens**
 - **Thomas Jefferson National Accelerator Facility**
 - **Historic Jamestowne, Colonial Williamsburg**
 - **College of William & Mary**
 - **Christopher Newport University**
- ▶ **8% projected Regional Load Growth between 2015 and 2020**
- ▶ **Load area served by four 230 kV lines and local generation**



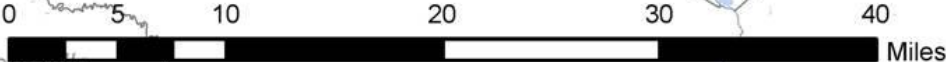




FUTURE SYSTEM
80% Imported After retirements at Yorktown

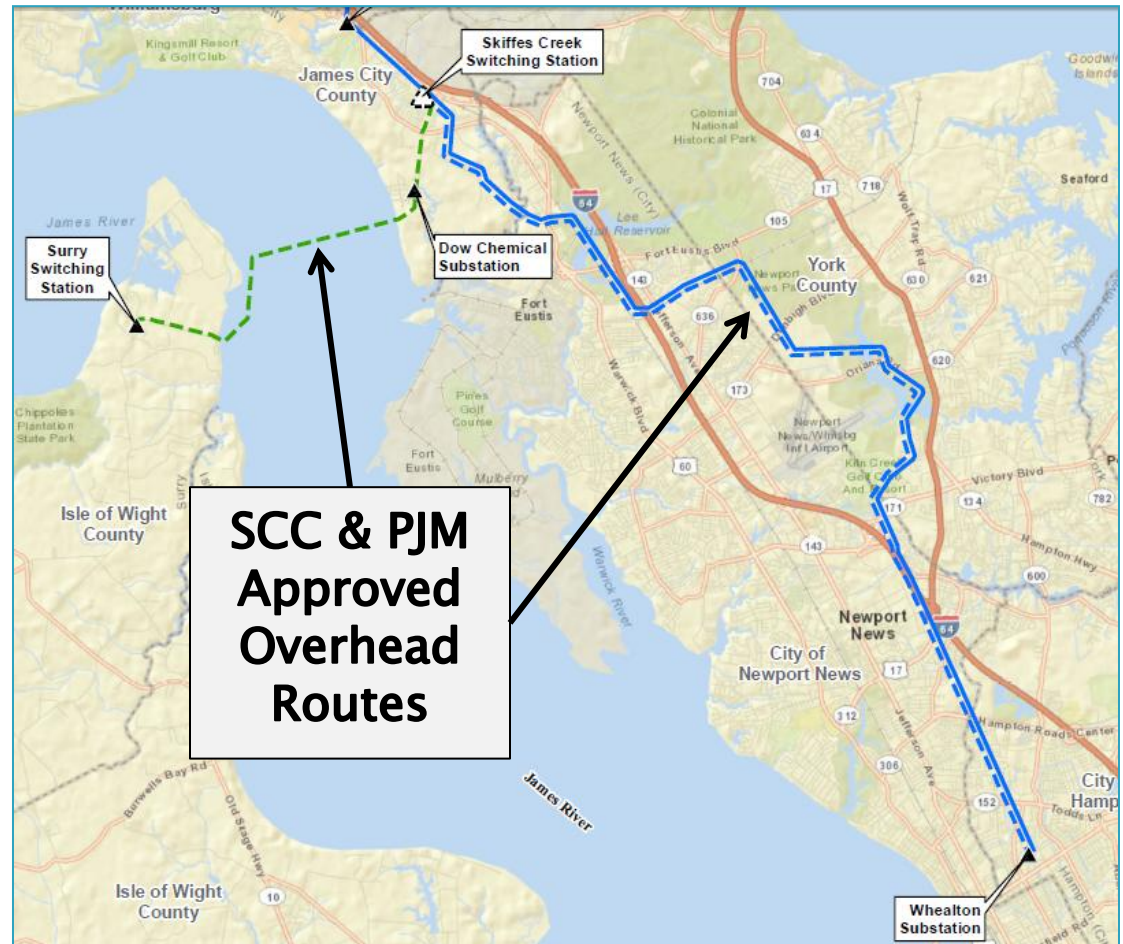
500kV
230kV
X System Failure

Failure along Lanexa corridor ~OR~ existing James River crossing causes regional system instability and potential local blackouts



Project need accelerated to provide reliable power to North Hampton Roads load area following retirements at Yorktown

- Surry – Skiffes Creek 500kV Line
- Skiffes Creek Switching Station
- Skiffes Creek – Whealton 230kV Line



Examples - Rejected Alternatives

Alternatives Considered	Reasons for Alternative Rejection
Surry-Skiffes Creek Double Circuit 230 kV Line	<ul style="list-style-type: none"> ✗ Failed to resolve all the identified NERC criteria violations ✗ Would increase the load on the already stressed 230 kV transmission system
Chickahominy-Skiffes Creek Double Circuit 230 kV Line	<ul style="list-style-type: none"> ✗ Failed to resolve all the identified NERC criteria violations ✗ It would not provide longer term relief to both stressed 230 kV system
Chickahominy-Skiffes Creek 500 kV Line Through Lanexa Substation	<ul style="list-style-type: none"> ✗ Have significant routing impacts, including the acquisition of significant additional ROW and the taking of a significant number of homes ✗ Failure to resolve a Category D outages
Underground Surry-Skiffes Double Circuit 230 kV Line or 500 kV Line	<ul style="list-style-type: none"> ✗ Would not resolve all of the identified NERC criteria violations ✗ Underground lines at 500 kV only installed in a few places around the world and none have been has been installed with the minimum required 2000 MVA capacity
Isle of Wight-Newport News & Great Bridge and Surry 230 kV	<ul style="list-style-type: none"> ✗ Failed to resolve all the identified NERC criteria violations ✗ Proposed new transmission facilities overload
Upgrade entire regional 230kV Network	<ul style="list-style-type: none"> ✗ Failed to resolve all the identified NERC criteria violations ✗ Would not be feasible from a timeline perspective
James River Variation 2 James River Variation 3	<ul style="list-style-type: none"> ✗ Dominion does not have the rights to exercise power of Eminent Domain over County property; ability to acquire the required easement through the IDA parcel was not possible
Generation Alternatives	<ul style="list-style-type: none"> ✗ Retrofit the Yorktown units to meet future environmental rules ✗ Convert the units to burn oil or natural gas (insufficient gas infrastructure) ✗ Replace with a new natural gas generating facility in the North Hampton Roads Load Area

Plus numerous other alternatives considered but rejected during SCC Hearings

Skiffes Creek Confirmed as the Best Solution



❖ PJM selected Surry-Skiffes Creek 500 kV line as the **best solution** to address the identified NERC criteria violations

❖ In its final order, the Virginia SCC wrote, “The Commission understands the importance of this case to the many people who cherish Virginia’s historical and natural assets and to those who depend on the reliable electric service so critical to Virginia’s economic strength, safety, and quality of life.” The SCC found that based on the record of the case, the routes chosen for the project **reasonably minimize adverse impact on scenic assets, historic districts and resources, and the environment.**

500kV Project Construction Details

Surry – Skiffes Creek Line

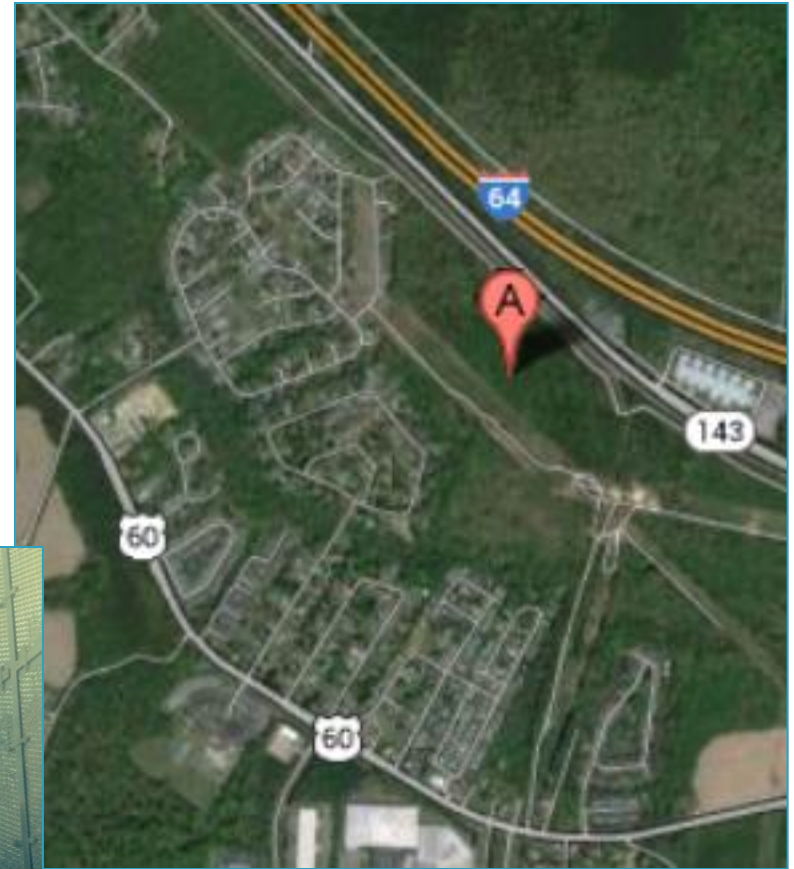
- Work on the river crossing portion will be completed in the shortest time frame possible with minimal river bed disturbance
 - All foundation and tower erection work done off of barges
 - Loading of equipment will occur off-site
 - Surry loading dock used for off-loading tower material
 - Construction duration – approximately 13 months
- Increased sedimentation and turbidity will be minimal and, per NOAA, are not likely to effect Atlantic Sturgeon
- The Private Aid to Navigation application will be submitted and the Coast Guard will be notified
- No clearing or significant habitat alteration is required within threatened or endangered species habitat areas



500kV Project Construction Details

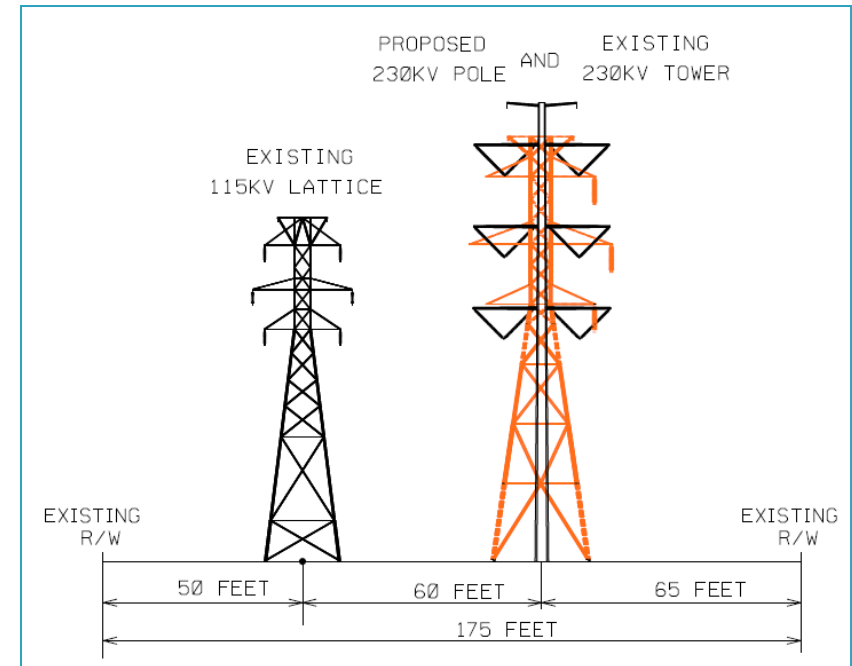
Skiffes Creek Switching Station

- To be constructed on Dominion fee-owned property
- Construction will be concurrent with line construction, approximately 13 months
- Station will include physical security measures and non-climb fence



230kV Project Construction Details

- **Using existing transmission right-of-way** is currently occupied by existing electrical circuits. Portions of this line will be replacing existing lattice steel tower structures with new monopoles to accommodate the old and new 230kv line. In other portions of the line we will install new conductor on the vacant side of existing monopoles.
- **Project will be constructed in sections** to maintain an acceptable level of service reliability
- **Construction entrances** - 98% have been permitted and are existing ingress and egress points for the existing 230kv corridor
- **Vehicle traffic impacts** will be negligible to the region



230kV Project Construction Details

- **E&S Compliance** - Dominion will employ a third party contractor to monitor E&S issues throughout the entire project ROW and they provide weekly reports to upper management
- **Timber Mats** - will be used for construction travel ways and to establish construction pads at tower locations to minimize ROW impacts
- **Dominion complies** with all federal, state and local guidelines, DOE, SWIPP





Viewpoint 07 - Industrial Park Drive - Looking North West - Existing View



Viewpoint 07 - Industrial Park Drive - Looking North West - Proposed View



Viewpoint 08 - Devore Avenue - Looking North - Existing View



Viewpoint 08 - Devore Avenue - Looking North - Proposed View

Project Communications

- Dedicated single-point-of-contact throughout entire construction process
 - Pre-construction notices
 - Construction Updates
- Project website
www.dom.com, search “Skiffes” for latest details and construction timeline
- Email: powerline@dom.com
- Toll-free line direct to project team **1-888-291-0190**

The screenshot shows the Dominion Energy website. The header includes the Dominion logo, a search bar, and navigation links for Corporate, Customers, Products, Investors, News, Careers, Civism, and About Dominion. The main content area is titled "Surry-Skiffes Creek 500kV and Skiffes Creek-Wheaton 230kV Projects". It features a sidebar with a list of projects: Electric Transmission Line Projects, Northern Virginia - Part 1, Northern Virginia - Part 2, Eastern Virginia, Surry-Skiffes Creek 500kV and Skiffes Creek-Wheaton 230kV Projects (highlighted), Benns Church Substation, Dahlgren 230kV Transmission Line Project, Oakwood-Burton Line Upgrade & Little Creek Substation, and South Norfolk Substation. The main content area includes social media sharing options (Tweet, Share, Print, Email, Like) and a detailed description of the project, mentioning the PJM Board of Managers and the SCC approval process. A "Project Details" section is also visible at the bottom.

Schedule Implications

- ❖ *EPA is only authorized to grant an extension for the Yorktown units through the Administrative Order Policy for one year, until April 2017*
- ❖ *Construction timelines are estimates subject to unknown delays*
 - Weather delays
 - Planned outage delays
 - Environmental time-of-year delays
- ❖ *Without the Skiffes Creek projects in service, risks include*
 - Required load-shed (rotating outages to customers in region)
 - Blackouts across the North Hampton Roads load area



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