EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

SEPTA TO YADKIN

Electric Transmission Line Rebuild Project

Viewpoint 13

Date: 11/07/2024 **Time:** 9:04 am **Viewing Direction:** West

13 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

SEPTA TO YADKIN

Electric Transmission Line Rebuild Project

Viewpoint 14

Date: 11/08/2024 **Time:** 11:57 am **Viewing Direction:** Southwest

14 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

SEPTA TO YADKIN

Electric Transmission Line Rebuild Project

Viewpoint 15

Date: 11/07/2024 **Time:** 8:48 am **Viewing Direction:** Northwest

15 Viewpoint Location — Transmission Line ▲ Substation

Dominion Energy®

Environmental Justice: Ongoing Commitment to Our Communities

At Dominion Energy, we are committed to providing reliable, affordable, clean energy in accordance with our values of safety, ethics, excellence, embrace change and team work. This includes listening to and learning all we can from the communities we are privileged to serve.

Our values also recognize that environmental justice considerations must be part of our everyday decisions, community outreach and evaluations as we move forward with projects to modernize the generation and delivery of energy.

To that end, communities should have a meaningful voice in our planning and development process, regardless of race, color, national origin, or income. Our neighbors should have early and continuing opportunities to work with us. We pledge to undertake collaborative efforts to work to resolve issues. We will advance purposeful inclusion to ensure a diversity of views in our public engagement processes.

Dominion Energy will be guided in meeting environmental justice expectations of fair treatment and sincere involvement by being inclusive, understanding, dedicated to finding solutions, and effectively communicating with our customers and our neighbors. We pledge to be a positive catalyst in our communities.

November 2018

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

C. Detail the nature, location, and ownership of each building that would have to be demolished or relocated if the project is built as proposed.

Response: The Company identified ten sheds, two outbuildings, one garage, one animal pen, and three parcels with carports within the existing right-of-way. These structures may need to be removed or relocated to comply with easement regulations and ensure safe construction and operation of the Rebuild Project. The Company will coordinate with each landowner prior to construction.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC5 FEATURES

D. Identify existing physical facilities that the line will parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc. Describe the current use and physical appearance and characteristics of the existing ROW that would be paralleled, as well as the length of time the transmission ROW has been in use.

Response: The transmission right-of-way corridor containing Line #579 has been in continuous use since 1985.

The Rebuild Project is located in an existing transmission line right-of-way corridor that contains several parallel lines. Leaving the Septa Switching Station, Line #579 runs parallel with Lines #214, #226, #290, and #223 for approximately 12.1 miles to a point just south of the Chuckatuck Substation. Line #579 then turns south and is parallel with Line #289 for an additional approximately 5.0 miles to a point just northwest of the corridor's crossing of Five Mile Road. For the next approximately 7.5 miles, Line #579 is the only line located within the existing right-of-way.

After crossing Route 460 and the CSX Railroad, Line #579 joins with Line #2110 and continues for approximately 7.5 miles. The first 2.2 miles of this 7.5-mile stretch of the Rebuild Project are also parallel to Route 460 and the CSX Railroad. For the last approximately 1.1 miles of the Rebuild Project, the transmission line right-of-way contains Lines #579/#2110, Line #267, Line #87, and Line #223.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

E. Indicate whether the Applicant has investigated land use plans in the areas of the proposed route and indicate how the building of the proposed line would affect any proposed land use.

Response: The Isle of Wight County Comprehensive Plan was adopted in 2020 (the "Isle of Wight County Plan")[28] and is a general, long-range and dynamic policy implementation guide for decisions involving the growth and development of the County. The Isle of Wight County Plan's themes include preserved agricultural land and rural character, managed growth, protected natural resources, and character of new development respecting existing community identity.

The City of Suffolk 2045 Comprehensive Plan (the "City of Suffolk Plan")[29] was adopted in December 2024 and replaces the Suffolk 2035 Comprehensive Plan. The City of Suffolk Plan focuses on growth in areas that are already developed and supported by existing infrastructure while also identifying areas for new growth.

The City of Chesapeake Comprehensive Plan was adopted in 2014 and amended in 2016 and again in 2019 (the "City of Chesapeake Plan").[30] The City of Chesapeake Plan focuses on responsible growth management, community preservation and development, and the preservation and access of natural amenities for the future of the City of Chesapeake to 2035.

The Company engaged with Isle of Wight County and the Cities of Suffolk and Chesapeake for feedback on the proposed Rebuild Project. See Section V.D of the Appendix. The Rebuild Project is not expected to interfere with future planning as it utilizes existing transmission line right-of-way and no new right-of-way will be required.

[28] *See* https://www.co.isle-of-wight.va.us/departments/planning_and_zoning/comprehensive_plan_update/index.php.

[29] *See* https://suffolk2045.org/.

[30] *See* https://resources.cityofchesapeake.net/comp-plan-2035/#page=1.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

F. Government Bodies

1. Indicate if the Applicant determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by § 3.2-205 B of the Code.

2. If so, and if any portion of the proposed facilities will be located on any such important farmland:

a. Include maps and other evidence showing the nature and extent of the impact on such farmlands;

b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable; and

c. Describe the Applicant's proposals to minimize the impact of the facilities on the affected farmland.

Response: (1) Va. Code §§ 3.2-200 – 3.2-206 were repealed effective July 1, 2024. However, the General Assembly enacted a substantially similar requirement to Va. Code § 3.2-205, which is codified at Va. Code § 10.1-1119.7. Accordingly, the Company reviewed Comprehensive Plans and County Ordinances to determine whether the governing bodies of Charles City, Hanover, and Henrico Counties, in cooperation of the U.S. Department of Agriculture, have designated important farmlands within their jurisdiction under Va. Code § 10.1-1119.7 B.

The Cities of Chesapeake and Suffolk and Isle of Wight County, Virginia do not have designated "important farmlands." The Isle of Wight Plan does note the protection of prime farmland and the preservation of agricultural land through their PACE program. The City of Chesapeake zoning ordinance identifies their Open Space and Agriculture Preservation program which encourages and promotes the preservation of open space and agricultural lands throughout the city by means that are voluntary rather than regulatory. The City of Suffolk Plan notes the protection of prime farmland and goal of preserving farmland and rural character. See Section 2.L of the DEQ Supplement for information on prime farmland and farmland of statewide importance crossed by the Rebuild Project.

The proposed Rebuild Project is not expected to impact current land uses in the Cities of Chesapeake and Suffolk and in Isle of Wight County, Virginia, as the Rebuild Project is being rebuilt within the existing corridor that has been in use since 1985 when Line #579 was constructed and agriculture is a typical permitted use within a transmission line corridor subject to the terms of the easement. See Section II.A.8.

(2) Not applicable.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

G. Identify the following that lie within or adjacent to the proposed ROW:

1. **Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**

2. **Any historic architectural, archeological, and cultural resources, such as historic landmarks, battlefields, sites, buildings, structures, districts or objects listed or determined eligible by the Virginia Department of Historic Resources ("DHR");**

3. **Any historic district designated by the governing body of any city or county;**

4. **Any state archaeological site or zone designated by the Director of the DHR, or its predecessor, and any site designated by a local archaeological commission, or similar body;**

5. **Any underwater historic assets designated by the DHR, or predecessor agency or board;**

6. **Any National Natural Landmark designated by the U.S. Secretary of the Interior;**

7. **Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation ("DCR");**

8. **Any area accepted by the Director of the DCR for the Virginia Natural Area Preserves System;**

9. **Any conservation easement or open space easement qualifying under §§ 10.1-1009 – 1016, or §§ 10.1-1700 – 1705, of the Code (or a comparable prior or subsequent provision of the Code);**

10. **Any state scenic river;**

11. **Any lands owned by a municipality or school district; and**

12. **Any federal, state or local battlefield, park, forest, game or wildlife preserve, recreational area, or similar facility. Features, sites, and the like listed in 1 through 11 above need not be identified again.**

Response: A Stage 1 Pre-Application Analysis was prepared by Dutton in accordance with VDHR's *Guidelines for Assessing Impacts for Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*. That report is included as Attachment 2.I.1 to the DEQ Supplement and addresses the potential impacts from the Rebuild Project to historic resources identified by the VDHR's tiered survey guidance.

1. The NRHP-Listed Sunray Agricultural Historic District (131-5325) is crossed by the Rebuild Project. Four additional sites—Robert Tynes House (046-0002), Four Square (046-0026), Phillips Farm (133-0695), and Dumpling Island Archaeological Site (133-5001)—are located within 0.5-mile of the Rebuild Project.

2. The following eligible or potentially eligible resources are crossed by the Rebuild Project:

- Eligible - 44SK0080 – Artifact scatter, Shell midden
- Eligible – 44SK0608 – Artifact scatter, Camp
- Potentially Eligible – 133-5039 – Hill's Point Battlefield

The following eligible or potentially eligible architectural resources are within 0.5-mile of the Rebuild Project:

- Eligible - 046-5696 – The Spivey Farm
- Eligible – 046-5210 – Long Nancy Tynes House
- Eligible – 133-0025 – Mintonville
- Potentially Eligible – 046-0069 – Delk Farm
- Potentially Eligible – 046-5239 – Oliver Store and Farm
- Potentially Eligible – 046-5566 – Dwelling, 11231 Mill Swamp Road
- Potentially Eligible – 131-5833 – Portsmouth Ditch
- Potentially Eligible – 133-0217 – Sessoms House

3. None.

4. There are ten previously recorded archaeological sites located within or immediately adjacent to the Rebuild Project: 44CS0053, 44CS0330, 44CS0331, 44CS0333, 44IW0077, 44IW0126, 44SK0080, 44SK0081, 44SK0190, and 44SK0608. Two sites (44SK0080 and 44SK0608) are eligible for listing on the NRHP.

5. None.

6. The Great Dismal Swamp is designated as a National Natural Landmark and is crossed by the Rebuild Project.

7. None.

8. None.

9. Three existing conservation easements are crossed by the Rebuild Project: an Isle of Wight PACE program easement, a Virginia Department of Forestry Easement, and a private wetland mitigation bank easement. These easements were created after the Company's initial establishment of the transmission corridor.

10. None.

11. None.

12. The Rebuild Project crosses the Great Dismal Swamp National Wildlife Refuge, which is managed by the USFWS, and the Captain John Smith Chesapeake National Historic Trail, which is managed by the National Park Service. Municipal parks and other private recreational facilities crossed by the Rebuild Project are illustrated on Attachment II.A.2 and addressed in Section 2.L of the DEQ Supplement.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

H. List any registered aeronautical facilities (airports, helipads) where the proposed route would place a structure or conductor within the federally-defined airspace of the facilities. Advise of contacts, and results of contacts, made with appropriate officials regarding the effect on the facilities' operations.

Response: The Federal Aviation Administration ("FAA") is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The Company has reviewed the FAA's website,[31] and 2024 aerial photography to identify airports within 10.0 nautical miles ("nm") of the Rebuild Project. The following table provides a summary of the airports and heliports identified:

Name	Approximate Distance and Direction from the Proposed Rebuild Project	Use
Hampton Roads Executive Airport (PVG)	0.6 NM N	Public
Chesapeake Regional Airport (CPK)	6.1 NM S	Public
Suffolk Executive Airport (SFQ)	6.8 NM SW	Public
Isle of Wight Volunteer Rescue Squad Helicopter (VA90)	1.4 NM NW	Private
Sentara Obici Hospital Heliport (VG51)	1.9 NM SW	Private
Garner Field Airport (3VA8)	4.1 NM W	Private
WAVY TV Heliport (10VG)	4.9 NM NE	Private
Chesapeake Regional Medical Center Heliport (11VA)	5.3 NM W	Private
Aberdeen Field Airport (31VA)	5.5 NM NW	Private
Sentara BelleHarbour Heliport (17VA)	5.7 NM N	Private

[31] *See* https://oeaaa.faa.gov/oeaaa/external/portal.jsp and https://adip.faa.gov/agis/public/#/public.

Division Five Heliport (47VA)	6.0 NM ENE	Private
Sentara Norfolk General Hospital Heliport (VA88)	6.4 NM NE	Private
Windsor Heliport (79VA)	7.3 NM W	Private
Sentara Leigh Hospital Heliport (VA15)	9.5 NM NE	Private
Cinclantflt Heliport (NCL)	10.0 NM N	Private

Since the FAA manages air traffic in the United States, it will evaluate any physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The Company will coordinate with the Virginia Department of Aviation and the FAA as necessary to obtain all appropriate permits. If required during the permitting process, Dominion Energy Virginia will submit an FAA Form 7460-1 Notice pursuant to 14 CFR Part 77 for any tower locations that meet the review criteria.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

I. Advise of any scenic byways that are in close proximity to or that will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highways' crossings.

Response: The existing right-of-way to be used for the Rebuild Project does not cross any scenic Virginia byways.[32] Use of the existing right-of-way minimizes or eliminates permanent incremental impacts at road crossings. To avoid the need for any additional right-of-way, the Rebuild Project will cross all roads at a similar angle and alignment as the existing crossings.

[32] VDOT 2021 Virginia's Byways. Accessed: February 2025. Retrieved from: https://www.vdot.virginia.gov/travel-traffic/travelers/virginia-byways/.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

J. Identify coordination with appropriate municipal, state, and federal agencies.

Response: The Company solicited feedback from the Cities of Chesapeake and Suffolk and from Isle of Wight County, Virginia, regarding the proposed Rebuild Project. Below is a list of coordination that has occurred with municipal, state, and federal agencies:

- Coordination with the U.S. Army Corps of Engineers, DEQ, the Virginia Marine Resources Commission, and VDOT will take place as appropriate to obtain necessary approvals for the Rebuild Project.
- Letters dated April 22, 2025, were submitted to Cities of Chesapeake and Suffolk and Isle of Wight County, Virginia to describe the Rebuild Project and request comments. See Section V.D.
- A Stage I Pre-Application Analysis has been prepared and was submitted to VDHR on June 4, 2025. See Attachment 2.I.1 to the DEQ Supplement.
- On October 24, 2024, the Company solicited comments via letter from several federally recognized Native American tribes, including:

Name	Tribe
Chief Walt "Red Hawk" Brown	Cheroenhaka (Nottoway) Indian Tribe
Mary Frances Wilkerson	Cheroenhaka (Nottoway) Indian Tribe
Chief Stephen Adkins	Chickahominy Indian Tribe
Assistant Chief Reginald Stewart	Chickahominy Indian Tribe
Chief Gerald A. Stewart	Chickahominy Indian Tribe Eastern Division
Jessica Phillips	Chickahominy Indian Tribe Eastern Division
Dana Adkins	Chickahominy Tribe
Chief Mark Custalow	Mattaponi Tribe
Chief Diane Shields	Monacan Indian Nation
Chief Keith Anderson	Nansemond Indian Nation
Chief Lynette Allston	Nottoway Indian Tribe of Virginia
Ms. Beth Roach	Nottoway Indian Tribe of Virginia
Chief Robert Gray	Pamunkey Indian Tribe
Kendall Stevens	Pamunkey Indian Tribal Resource Office
Chief Charles (Bootsie) Bullock	Patawomeck Indian Tribe of Virginia
Chief G. Anne Richardson	Rappahannock Tribe
Assistant Chief	Rappahannock Tribe

Chief W. Frank Adams	Upper Mattaponi Indian Tribe
Leigh Mitchell	Upper Mattaponi Indian Tribe
Katelyn Lucas	Delaware Nation, Oklahoma
Deborah Dotson	Delaware Nation, Oklahoma

A copy of the letter template and map is included as Attachment III.J.1.

On November 5, 2024, the Company received an inquiry via email from Cameron Bruce, Environmental Restoration and Policy Manager for the Nansemond Indian Nation. See Attachment III.J.2. Soon after, Mr. Bruce vacated his position. However, the Company continues to work with Nansemond Indian Nation representatives regarding the Rebuild Project.

See also Sections III.B, III.K and V.D of this Appendix, and the DEQ Supplement.

Dominion Energy Virginia
Dominion Energy North Carolina
Electric Transmission
5000 Dominion Boulevard
Glen Allen, VA 23060
DominionEnergy.com

October 24, 2024

Septa-Yadkin 500 kV Electric Transmission Line Project

Dear _____,

Dominion Energy is dedicated to maintaining safe, reliable, and affordable electric service in the communities we serve. You are receiving this project announcement letter as part of our efforts to proactively communicate early with Tribal Nations who many have an interest in this area. With your unique perspective, you can help us better plan projects in their earliest stages. Please note, this letter is not a notification of formal government-to-government consultation from any state or federal agency. Dominion Energy has been and continues to be committed to creating and maintaining strong, open, supportive, and mutually beneficial relationships with Tribal Nations.

We are proposing to rebuild an aging 500 kilovolt (kV) electric transmission line between our Septa and Yadkin substations. The structures and related components along the existing 33-mile corridor running through Isle of Wight, Suffolk and Chesapeake, Virginia, have reached their end of service life and need to be replaced to maintain reliability. The current proposed design requires no new right of way.

This project requires approval from the Virginia State Corporation Commission (SCC). We are still in the conceptual phase of this project and more details will be provided as activities progress. Providing your input now allows us to consider any concerns you may have as we work to meet the project's needs. Enclosed is a project map for your reference. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, other recipients of this letter include county and state historic, cultural, and scenic organizations.

If you have questions or would like to set up a meeting to discuss the project, contact me by calling (804) 944-5313 or sending an email to Janae.P.Johnson@dominionenergy.com. You may also contact Tribal Relations Manager Ken Custalow by sending an email to Ken.Custalow@dominionenergy.com or calling (804) 837-2067.

Sincerely,

Janae Johnson
Communications Consultant
The Electric Transmission Project Team

Dominion Energy Virginia
Dominion Energy North Carolina
Electric Transmission
5000 Dominion Boulevard
Glen Allen, VA 23060
DominionEnergy.com

This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

[redacted]

From: ken.custalow@dominionenergy.com
Sent: Wednesday, December 18, 2024 11:40 AM
To: Cameron Bruce; janae.p.johnson@dominionenergy.com
Cc: Keith Anderson; Ellen Chapman; Elizabeth Horton; stephen.s.precker@dominionenergy.com
Subject: RE: [EXTERNAL] Septa-Yadkin Transmission Line Project

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning Cameron,

I hope all is well with you and the Tribe. I wanted to follow-up with you regarding the email below and our subsequent phone conversation. I have talked to representatives from our Electric Transmission and Communication teams and we would like to meet with the Tribe to discuss more specific project details and discuss the proposed cultural resource survey plan. We were looking at the weeks of 1/20 or 1/27 for that discussion if possible. Could you please provide dates and times that would work for the Tribe.

Thank you and feel free to email or call if you have questions.

Ken Custalow
Tribal Relations Manager
804-837-2067

From: Cameron Bruce <cameron.bruce@nansemond.gov>
Sent: Tuesday, November 5, 2024 10:54 AM
To: Janae P Johnson (DEV Trans Distribution - 1) <janae.p.johnson@dominionenergy.com>
Cc: Ken Custalow (Services - 6) <ken.custalow@dominionenergy.com>; Keith Anderson <chief@nansemond.gov>; Ellen Chapman <Ellen@culturalheritagepartners.com>; Elizabeth Horton <elizabeth@culturalheritagepartners.com>
Subject: [EXTERNAL] Septa-Yadkin Transmission Line Project

Dear Ms. Johnson,

The Nansemond Indian Nation appreciates Dominion Energy's outreach regarding the project to update the Septa-Yadkin transmission line. The Nation requests a more precise map of the ROW for this project and the Scope of Work for any cultural resources surveys to be carried out in advance of the Project permitting as soon as these are available. The Nation looks forward to reviewing these project documents.

Should you have any questions about these requests, please do not hesitate to contact us.

Thank you!

Respectfully,

--
Cameron Bruce, M.P.P. *(He/Him/His)*
Environmental Restoration & Policy Manager
cameron.bruce@nansemond.gov
C: 757.725.6770
Nansemond Indian Nation [nansemond.gov]

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

K. Identify coordination with any non-governmental organizations or private citizen groups.

Response: On October 24, 2024, the Company solicited comments via letter from the community leaders, environmental groups, and business groups identified below. A copy of the letter template and map is included as Attachment III.K.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Ms. Eleanor Breen, PhD, RPA	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Ms. Elaine Chang	National Trust for Historic Preservation
Mr. John McCarthy	Piedmont Environmental Council
Ms. Julie Bolthouse	Piedmont Environmental Council
Mr. Thomas Gilmore	American Battlefield Trust
Mr. Jim Campi	American Battlefield Trust
Mr. Max Hokit	American Battlefield Trust
Mr. Steven Williams	Colonial National Historical Park
Dr. Cassandra Newby-Alexander	Professor of History – Norfolk State University
Mr. Roger Kirchen	Virginia Department of Historic Resources
Ms. Adrienne Birge-Wilson	Virginia Department of Historic Resources
Mr. Dave Dutton	Dutton and Associates, LLC

Dominion Energy Virginia
Dominion Energy North Carolina
Electric Transmission
5000 Dominion Boulevard
Glen Allen, VA 23060
DominionEnergy.com

Attachment III.K.1

October 24, 2024

Septa-Yadkin 500 kV Electric Transmission Line Project

Dear _____,

Dominion Energy is dedicated to maintaining safe, reliable, and affordable electric service in the communities we serve. As a valued stakeholder with a unique perspective, you can help us meet these objectives as we plan necessary electric infrastructure projects. We are reaching out to you as we have an upcoming project crossing through Isle of Wight, Suffolk and Chesapeake, Virginia and you may have an interest in this area.

We are proposing to rebuild a 500 kilovolt (kV) electric transmission line between our Septa and Yadkin Substations. After five decades of reliable service, the aging infrastructure along the 33-mile corridor has reached its end of service life and needs to be replaced to maintain reliability. As mentioned, this transmission line corridor crosses through Isle of Wight, Suffolk and Chesapeake, Virginia, and will not require new right of way.

Enclosed is a project overview map for your reference. This project will require review by the Virginia State Corporation Commission (SCC). Providing your input now allows us to consider any concerns you may have as we work to meet the project's needs. Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, other recipients of this letter include county and state historic, cultural, and scenic organizations, as well as Tribal Nations.

We will host an in-person community meeting prior to submitting the SCC application early 2025. Please visit the project webpage at DominionEnergy.com/septa-yadkin for meeting updates and more project information.

If you have questions or would like to set up a meeting to discuss the project, contact me by calling 804-944-5313 or sending an email to Janae.p.johnson@dominionenergy.com

Sincerely,

Janae Johnson
Communications Consultant
The Electric Transmission Project Team

Dominion Energy Virginia
Dominion Energy North Carolina
Electric Transmission
5000 Dominion Boulevard
Glen Allen, VA 23060
DominionEnergy.com

This map is intended to serve as a representation of the project area and is not intended for detailed engineering purposes.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

L. Identify any environmental permits or special permissions anticipated to be needed.

Response: The permits or special permissions that are likely to be required for the proposed Rebuild Project are listed below.

Potential Permits

Activity	Potential Permit	Agency/Organization
Crossings of navigable waters and impacts to wetlands and other waters of the U.S.	Nationwide Permit 3 with a Section 10 & Section 408 Permit tied to the Nansemond River Crossing	U.S. Army Corps of Engineers
Impacts to wetlands and other waters under Section 404 and 401	Virginia Water Protection Maintenance Exemption	Virginia Department of Environmental Quality
Work within, over or under state subaqueous bottom and tidal waters	Subaqueous Encroachment Permit	Virginia Marine Resources Commission
Impacts to tidal wetlands	Tidal Wetlands Permit	City of Suffolk Local Wetlands Board
Work within Great Dismal Swamp National Wildlife Refuge	Special Use Permit	U.S. Fish and Wildlife Service
Discharge of stormwater from construction	Construction General Permit	Virginia Department of Environmental Quality
Work within VDOT rights-of-way	Land Use Permit	Virginia Department of Transportation
Work within City of Chesapeake rights-of-way	Franchised Utility Permit	City of Chesapeake Department of Public Works
Work within City of Suffolk rights-of-way	Right-of-Way and Driveway Permits	City of Suffolk Department of Public Works
Work within railroad corridor	Utility Permit	CSX Transportation Norfolk Southern
Airspace obstruction evaluation	FAA 7460-1	Federal Aviation Administration

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

A. Provide the calculated maximum electric and magnetic field levels that are expected to occur at the edge of the ROW. If the new transmission line is to be constructed on an existing electric transmission line ROW, provide the present levels as well as the maximum levels calculated at the edge of ROW after the new line is operational.

Response: Public exposure to magnetic fields associated with high voltage power lines is best estimated by field levels calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the proposed transmission lines. EMF levels are provided for future (2029) annual average and maximum (peak) loading conditions. The EMF values provided in this section were calculated based on the Company's proposed line characteristics of a typical span in both average and peak loading conditions.

EMF levels were calculated based on the line loading shown in the table below.

Line #	Voltage (kV)	Historical (Past 12 months)		Future (2029)	
		Average (Amps)	Peak (Amps)	Average (Amps)	Peak (Amps)
579	500	470	1061	410	926
87	115	93	417	59	266
214	230	364	749	283	582
223	230	342	808	231	544
226	230	443	871	355	697
267	230	268	849	166	526
289	230	144	575	106	424
290	230	421	900	249	533
2110	230	376	894	315	747

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical average load operating temperature. EMF levels at the edge of the right-of-way for the existing line at the historical average loading:

Existing Lines - Historical Average Loading					
Attachment	**Circuits (Left to Right)**	**Left Edge Looking Towards Yadkin Substation**		**Right Edge Looking Towards Yadkin Substation**	
		Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a.i	579 - 214 - 226 - 290 - 223	2.62	21.91	0.22	13.72
II.A.5.b.i	214 - 226 - 290 - 223 - 579	0.05	4.54	2.91	24.58
II.A.5.c.i	579 - Vacant - 289	2.76	23.58	0.22	9.16
II.A.5.d.i	579 - Vacant - 289	0.82	9.59	0.17	9.06
II.A.5.e.i	579	2.60	21.89	2.70	21.92
II.A.5.f.i	579 over 2110	1.66	11.18	1.66	11.18
II.A.5.g.i	579 over 2110	1.35	9.11	0.82	6.38
II.A.5.h.i	579 over 2110	0.80	5.73	0.80	5.96
II.A.5.i.i	579 - 2110	3.74	29.50	0.25	5.67
II.A.5.j.i	267 - 223 - 87 - 579 over 2110	0.67	17.66	2.07	12.32

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical peak load operating temperature. EMF levels at the edge of the right-of-way for the existing line at the historical peak loading:

Existing Lines - Historical Peak Loading					
Attachment	**Circuits (Left to Right)**	**Left Edge Looking Towards Yadkin Substation**		**Right Edge Looking Towards Yadkin Substation**	
		Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a.i	579 - 214 - 226 - 290 - 223	2.63	49.59	0.22	31.98
II.A.5.b.i	214 - 226 - 290 - 223 - 579	0.05	10.42	2.91	55.68
II.A.5.c.i	579 - Vacant - 289	2.76	53.74	0.22	28.84
II.A.5.d.i	579 - Vacant - 289	0.81	21.88	0.16	28.43
II.A.5.e.i	579	2.61	49.59	2.70	49.66
II.A.5.f.i	579 over 2110	1.66	25.25	1.66	25.23
II.A.5.g.i	579 over 2110	1.36	20.40	0.82	14.20
II.A.5.h.i	579 over 2110	0.81	12.75	0.80	13.25
II.A.5.i.i	579 - 2110	3.75	66.62	0.25	13.25
II.A.5.j.i	267 - 223 - 87 - 579 over 2110	0.67	52.40	2.08	27.62

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected average load operating temperature. EMF levels at the edge of the right-of-way for the Rebuild Project at the projected average loading:

Proposed Lines - Projected Average Loading					
Attachment	**Circuits (Left to Right)**	**Left Edge Looking Towards Yadkin Substation**		**Right Edge Looking Towards Yadkin Substation**	
		Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a.ii	579 - 214 - 226 - 290 - 223	2.68	17.30	0.22	9.20
II.A.5.b.ii	214 - 226 - 290 - 223 - 579	0.04	3.03	2.32	14.06
II.A.5.c.ii	579 - Vacant - 289	2.28	14.69	0.22	7.13
II.A.5.d.ii	579 - Vacant - 289	0.82	7.16	0.18	7.11
II.A.5.e.ii	579	2.29	14.97	2.29	14.87
II.A.5.f1.ii	579 - 2110	1.54	15.51	1.01	15.65
II.A.5.g.ii	579 - 2110	0.98	11.21	0.21	7.50
II.A.5.h1.ii	579 - 2110	0.70	7.73	0.21	7.56
II.A.5.i.ii	579 - 2110	3.23	20.17	0.21	5.10
II.A.5.h2.ii	2110 - 579	0.21	7.49	0.69	7.92
II.A.5.f2.ii	2110 - 579	1.00	15.04	1.62	16.31
II.A.5.j.ii	267 - 223 - 87 - 2110 - 579	0.57	9.79	1.62	15.46

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected peak load operating temperature. EMF levels at the edge of the right-of-way for the Rebuild Project at the projected peak loading:

Proposed Lines - Projected Peak Loading					
Attachment	**Circuits (Left to Right)**	**Left Edge Looking Towards Yadkin Substation**		**Right Edge Looking Towards Yadkin Substation**	
		Electric Field (kV/m)	**Magnetic Field (mG)**	**Electric Field (kV/m)**	**Magnetic Field (mG)**
II.A.5.a.ii	579 - 214 - 226 - 290 - 223	2.69	39.21	0.22	21.50
II.A.5.b.ii	214 - 226 - 290 - 223 - 579	0.04	7.02	2.33	31.78
II.A.5.c.ii	579 - Vacant - 289	2.28	33.70	0.22	22.16
II.A.5.d.ii	579 - Vacant - 289	0.82	16.45	0.17	22.09
II.A.5.e.ii	579	2.30	33.90	2.30	33.67
II.A.5.f1.ii	579 - 2110	1.54	35.51	1.01	36.63
II.A.5.g.ii	579 - 2110	0.98	25.62	0.21	17.45
II.A.5.h1.ii	579 - 2110	0.70	17.63	0.21	17.58
II.A.5.i.ii	579 - 2110	3.24	45.56	0.21	11.89
II.A.5.h2.ii	2110 - 579	0.21	17.43	0.69	18.08
II.A.5.f2.ii	2110 - 579	1.00	35.07	1.62	37.30
II.A.5.j.ii	267 - 223 - 87 - 2110 - 579	0.57	30.07	1.62	35.29

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

B. If the Applicant is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.

Response: The conclusions of multidisciplinary scientific review panels assembled by national and international scientific agencies during the past few decades are the foundation of the Company's opinion that no adverse health effects are anticipated to result from the operation of the proposed Project. Each of these panels has evaluated the scientific research related to health and extremely low frequency ("ELF") EMF, also referred to as power-frequency (50/60 Hertz ["Hz"]) EMF, and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Research on EMF and human health varies widely in approach. Some studies evaluate the effects on biological responses of high, short-term EMF exposure not typically found in people's day-to-day lives, while others evaluate the effects of common, low EMF exposures found throughout communities. Studies also have evaluated the possibility of effects (*e.g.*, cancer, neurodegenerative diseases, and reproductive effects) of long-term exposure. Altogether, this research includes well over 100 epidemiologic studies of people in their natural environment and many more laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures, such as weight-of-evidence methods, were used by the expert panels assembled by scientific agencies to identify, review, and summarize the results of this large and diverse research.

The reviews of biological and health research related to ELF EMF have been conducted by numerous scientific and health agencies, including, for example, the European Health Risk Assessment Network on Electromagnetic Fields Exposure ("EFHRAN"), the International Commission on Non-Ionizing Radiation Protection ("ICNIRP"), the World Health Organization ("WHO"), the Institute of Electrical and Electronics Engineers ("IEEE")'s International Committee on Electromagnetic Safety ("ICES"), the Scientific Committee on Health, Environmental and Emerging Risks ("SCHEER") (formerly the Scientific Committee on Emerging and Newly Identified Health Risks ["SCENIHR"]) of the European Commission, and the Swedish Radiation Safety Authority ("SSM") (formerly the Swedish Radiation Protection Authority ["SSI"]) (WHO, 2007; SCENIHR, 2009, 2015; EFHRAN, 2010, 2012; ICNIRP, 2010; SSM, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2024a, 2024b; ICES, 2019; SCHEER, 2024). The general scientific consensus of the agencies that have reviewed this research, relying on generally accepted scientific methods, is that the scientific evidence does not confirm that common sources of EMF in the environment, including transmission lines and other parts of the electric system, appliances, etc., are a cause of any adverse health effects.

The most recent reviews on this topic include the 2015 and 2024 reports by

SCENIHR and SCHEER, respectively, and annual reviews published by SSM (*i.e.*, for the years 2015 through 2024). These reports, similar to previous reviews, found that the scientific evidence does not confirm the existence of any adverse health effects caused by environmental or community exposure to EMF.

WHO has recommended that countries adopt recognized international standards published by ICNIRP and ICES. Typical levels of EMF from Dominion Energy Virginia's high voltage power lines outside its property and rights-of-way are far below the screening reference levels of EMF recommended for the general public and still lower than exposures equivalent to restrictions to limits on fields within the body (ICNIRP, 2010; ICES, 2019).

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the proposed Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Project.

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IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

C. Describe and cite any research studies on EMF the Applicant is aware of that meet the following criteria:

1. Became available for consideration since the completion of the Virginia Department of Health's most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;

2. Include findings regarding EMF that have not been reported previously and/or provide substantial additional insight into findings; and

3. Have been subjected to peer review.

Response: The Virginia Department of Health ("VDH") conducted its most recent review and issued its report on the scientific evidence on potential health effects of extremely low frequency ELF EMF in 2000: "[T]he Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans."[33]

The continuing scientific research on ELF EMF exposure and health has resulted in many peer-reviewed publications since 2000. The accumulating research results have been regularly and repeatedly reviewed and evaluated by national and international health, scientific, and government agencies, including most notably:

- WHO, which published one of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature in 2007;
- SCHEER (formerly SCENIHR), a committee of the European Commission, which published its assessments in 2009, 2015, and 2024;
- The SSM, which has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent reviews published in 2024; and,
- EFHRAN, which published its reviews in 2010 and 2012.

The above reviews provide detailed analyses and summaries of relevant recent peer-reviewed scientific publications. The conclusions of these reviews that the evidence overall does not confirm the existence of any adverse health effects due to exposure to EMF below scientifically established guideline values are consistent with the conclusions of the VDH report. With respect to the statistical association observed in some of the childhood leukemia epidemiologic studies, the

[33] *See* http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/highfinal.pdf.

comprehensive review of the literature by SCENIHR, published in 2015, concluded that "no mechanisms have been identified and no support is existing [*sic*] from experimental studies that could explain these findings, which, together with shortcomings of the epidemiological studies prevent a causal interpretation" (SCENIHR, 2015, p. 16). In their 2024 report providing an update on the potential health effects of exposure to electromagnetic fields in the 1 Hz to 100 kilohertz ("kHz") range, SCHEER concluded that "overall, there is weak evidence concerning the association of ELF-MF [magnetic field] exposure with childhood leukaemia" (SCHEER 2024, p. 9).

While research is continuing on multiple aspects of EMF exposure and health, many of the recent publications have focused on an epidemiologic assessment of the relationship between EMF exposure and childhood leukemia and EMF exposure and neurodegenerative diseases. Of these, the following recent publications, published following the inclusion date (June 2014) for the SCENIHR (2015) report through February 15, 2025, provide additional evidence and contribute to clarification of previous findings. Overall, new research studies have not provided evidence to alter the previous conclusions of scientific and health organizations, including WHO and SCENIHR.

Epidemiologic studies of EMF and childhood leukemia published during the above referenced period include:

- Bunch et al. (2015) assessed the potential association between residential proximity to high voltage underground cables and development of childhood cancer in the United Kingdom largely using the same epidemiologic data as in a previously published study on overhead transmission lines (Bunch et al., 2014). No statistically significant associations or trends were reported with either distance to underground cables or calculated magnetic fields from underground cables for any type of childhood cancers.

- Pedersen et al. (2015) published a case-control study that investigated the potential association between residential proximity to power lines and childhood cancer in Denmark. The study included all cases of leukemia (n=1,536), central nervous system tumors, and malignant lymphoma (n=417) diagnosed before the age of 15 between 1968 and 2003 in Denmark, along with 9,129 healthy control children matched on sex and year of birth. Considering the entire study period, no statistically significant increases were reported for any of the childhood cancer types.

- Salvan et al. (2015) compared measured magnetic-field levels in the bedroom for 412 cases of childhood leukemia under the age of 10 and 587 healthy control children in Italy. Although the statistical power of the study was limited because of the small number of highly exposed subjects, no consistent statistical associations or trends were reported between measured magnetic-field levels and the occurrence of leukemia among children in the study.

- Bunch et al. (2016) and Swanson and Bunch (2018) published additional

analyses using data from an earlier study (Bunch et al., 2014). Bunch et al. (2016) reported that the association with distance to power lines observed in earlier years was linked to calendar year of birth or year of cancer diagnosis, rather than the age of the power lines. Swanson and Bunch (2018) re-analyzed data using finer exposure categories (*e.g.*, cut-points of every 50-meter distance) and broader groupings of diagnosis date (*e.g.*, 1960-1979, 1980-1999, and 2000 and after) and reported no overall associations between exposure categories and childhood leukemia for the later periods (1980 and after), and consistent pattern for the periods prior to 1980.

- Crespi et al. (2016) conducted a case-control epidemiologic study of childhood cancers and residential proximity to high voltage power lines (60 kV to 500 kV) in California. Childhood cancer cases, including 5,788 cases of leukemia and 3,308 cases of brain tumor, diagnosed under the age of 16 between 1986 and 2008, were identified from the California Cancer Registry. Controls, matched on age and sex, were selected from the California Birth Registry. Overall, no consistent statistically significant associations for leukemia or brain tumor and residential distance to power lines were reported.

- Kheifets et al. (2017) assessed the relationship between calculated magnetic-field levels from power lines and development of childhood leukemia within the same study population evaluated in Crespi et al. (2016). In the main analyses, which included 4,824 cases of leukemia and 4,782 controls matched on age and sex, the authors reported no consistent patterns, or statistically significant associations between calculated magnetic-field levels and childhood leukemia development. Similar results were reported in subgroup and sensitivity analyses. In two subsequent studies, Amoon et al. (2018a, 2019) examined the potential impact of residential mobility (*i.e.*, moving residences between birth and diagnosis) on the associations reported in Crespi et al. (2016) and Kheifets et al. (2017). Amoon et al. (2018a) concluded that changing residences was not associated with either calculated magnetic-field levels or proximity to the power lines, while Amoon et al. (2019) concluded that while uncontrolled confounding by residential mobility had some impact on the association between EMF exposure and childhood leukemia, it was unlikely to be the primary driving force behind the previously reported associations in Crespi et al. (2016) and Kheifets et al. (2017).

- Amoon et al. (2018b) conducted a pooled analysis of 29,049 cases and 68,231 controls from 11 epidemiologic studies of childhood leukemia and residential distance from high voltage power lines. The authors reported no statistically-significant association between childhood leukemia and proximity to transmission lines of any voltage. Among subgroup analyses, the reported associations were slightly stronger for leukemia cases diagnosed before 5 years of age and in study periods prior to 1980. Adjustment for various potential confounders (*e.g.*, socioeconomic status, dwelling type, residential mobility) had little effect on the estimated associations.

- Kyriakopoulou et al. (2018) assessed the association between childhood acute leukemia and parental occupational exposure to social contacts, chemicals, and electromagnetic fields. The study was conducted at a major pediatric hospital in Greece and included 108 cases and 108 controls matched for age, gender, and ethnicity. Statistically non-significant associations were observed between paternal exposure to magnetic fields and childhood acute leukemia for any of the exposure periods examined (1 year before conception; during pregnancy; during breastfeeding; and from birth until diagnosis); maternal exposure was not assessed due to the limited sample size. No associations were observed between childhood acute leukemia and exposure to social contacts or chemicals.

- Auger et al. (2019) examined the relationship between exposure to EMF during pregnancy and risk of childhood cancer in a cohort of 784,000 children born in Quebec. Exposure was defined using residential distance to the nearest high voltage transmission line or transformer station. The authors reported statistically non-significant associations between proximity to transformer stations and any cancer, hematopoietic cancer, or solid tumors. No associations were reported with distance to transmission lines.

- Crespi et al. (2019) investigated the relationship between childhood leukemia and distance from high voltage lines and calculated magnetic-field exposure, separately and combined, within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors reported that neither close proximity to high voltage lines nor exposure to calculated magnetic fields alone were associated with childhood leukemia; an association was observed only for those participants who were both close to high voltage lines (< 50 meters) and had exposure to high calculated magnetic fields (≥ 0.4 microtesla ["μT"]) (*i.e.*, ≥ 4 milligauss ["mG"]). No associations were observed with low-voltage power lines (< 200 kV). In a subsequent study, Amoon et al. (2020) examined the potential impact of dwelling type on the associations reported in Crespi et al. (2019). Amoon et al. (2020) concluded that while the type of dwelling at which a child resides (*e.g.*, single-family home, apartment, duplex, mobile home) was associated with socioeconomic status and race or ethnicity, it was not associated with childhood leukemia and did not appear to be a potential confounder in the relationship between childhood leukemia and magnetic-field exposure in this study population.

- Swanson et al. (2019) conducted a meta-analysis of 41 epidemiologic studies of childhood leukemia and magnetic-field exposure published between 1979 and 2017 to examine trends in childhood leukemia development over time. The authors reported that while the estimated risk of childhood leukemia initially increased during the earlier period, a statistically non-significant decline in estimated risk has been observed from the mid-1990s until the present (*i.e.*, 2019).

- Talibov et al. (2019) conducted a pooled analysis of 9,723 cases and 17,099 controls from 11 epidemiologic studies to examine the relationship between parental occupational exposure to magnetic fields and childhood leukemia. No statistically significant association was found between either paternal or maternal exposure and leukemia (overall or by subtype). No associations were observed in the meta-analyses.

- Núñez-Enríquez et al. (2020) assessed the relationship between residential magnetic-field exposure and B-lineage acute lymphoblastic leukemia ("B-ALL") in children under 16 years of age in Mexico. The study included 290 cases and 407 controls matched on age, gender, and health institution; magnetic-field exposure was assessed through the collection of 24-hour measurements in the participants' bedrooms. While the authors reported some statistically significant associations between elevated magnetic-field levels and development of B-ALL, the results were dependent on the chosen cut-points.

- Seomun et al. (2021) performed a meta-analysis based on 33 previously published epidemiologic studies investigating the potential relationship between magnetic-field exposure and childhood cancers, including leukemia and brain cancer. For childhood leukemia, the authors reported statistically significant associations with some, but not all, of the chosen cut-points for magnetic-field exposure. The associations between magnetic-field exposure and childhood brain cancer were statistically non-significant. The study provided limited new insight as most of the studies included in the current meta-analysis, were included in previously conducted meta- and pooled analyses.

- Amoon et al. (2022) conducted a pooled analysis of four studies of residential exposure to magnetic fields and childhood leukemia published following a 2010 pooled analysis by Kheifets et al. (2010). The study by Amoon et al. (2022) compared the exposures of 24,994 children with leukemia to the exposures of 30,769 controls without leukemia in California, Denmark, Italy, and the United Kingdom. Exposure was assessed by measured or calculated magnetic fields at their residences. The exposure of these two groups to magnetic fields were found not to significantly differ. A decrease in the combined effect estimates in epidemiologic studies was observed over time, and the authors concluded that their findings, based on the most recent studies, were "not in line" with previous pooled analyses that reported an increased risk of childhood leukemia.

- Brabant et al. (2022) performed a literature review and meta-analysis of studies of childhood leukemia and magnetic-field exposure. The overall analysis included 21 epidemiologic studies published from 1979 to 2020. The authors reported a statistically significant association, which they noted was "mainly explained by the studies conducted before 2000." The authors reported a statistically significant association between childhood leukemia and measured or calculated magnetic-field exposures > 0.4 μT (4 mG); no statistically significant overall associations were reported between childhood leukemia and lower magnetic-field exposure (< 0.4 μT [4 mG]), residential distance from

power lines, or wire coding configuration. An association between childhood leukemia and electric blanket use was also reported. The overall results were likely influenced by the inclusion of a large number of earlier studies; 10 of the 21 studies in the main analysis were published prior to 2000. Studies published prior to 2000 included fewer studies deemed to be of higher study quality, as determined by the authors, compared to studies published after 2000.

- Nguyen et al. (2022) investigated whether potential pesticide exposure from living in close proximity to commercial plant nurseries confounds the association between magnetic-field exposure and childhood leukemia development reported within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors in Nguyen et al. (2022) noted that while the association between childhood leukemia and magnetic-field exposure was "slightly attenuated" after adjusting for nursery proximity or when restricting to subjects living > 300 meters from nurseries, their results "do not support plant nurseries as an explanation for observed childhood leukemia risks." The authors further noted that close residential proximity to nurseries may be an independent risk factor for childhood leukemia.

- Guo et al. (2023) reported conducting a systematic review and meta-analysis of studies published from 2015 to 2022 that evaluated associations between magnetic-field exposure and childhood leukemia development. Three meta-analyses were conducted to evaluate the relationship using different exposure metrics. In the first meta-analysis, magnetic-field levels ranging from 0.4 μT (4 mG) to 0.2 μT (2 mG) were associated with a statistically significant reduced risk of childhood leukemia development (*i.e.*, a protective association). In the second meta-analysis, exposure was based on wiring configuration codes, and the reported pooled relative risk estimates demonstrated a statistically significant increased association with childhood leukemia. In the third meta-analysis, exposure was categorized into groupings of magnetic-field strength; no statistically significant associations with childhood leukemia were reported for any of the groupings, including for magnetic-field levels ≥ 0.4 μT (4 mG). There are significant limitations of this study that prevent meaningful interpretations of the results. Most of the analyses of magnetic fields did not state whether measurements and calculations were included, and the authors provided no description of the methods used for their analyses, no data tables to support their findings, and no references to the number and type of studies included. In fact, much of the article's introduction discusses ionized radiation. The authors also do not report relevant metrics for evaluating meta-analyses such as study heterogeneity.

- Malagoli et al. (2023) examined associations between exposure to magnetic fields from high voltage power lines (≥ 132 kV) and childhood leukemia development in a case-control study of children in Italy. The study included 182 cases diagnosed with childhood leukemia between 1998 and 2019 and 726 controls matched based on age, sex, and Italian province. The authors assessed

magnetic-field exposure by calculating the distance from each participant's residence to the nearest high voltage power line and classifying that distance into one of three exposed categories (participants living < 100 meters, 100 to < 200 meters, or 200 to < 400 meters from the power lines) or as unexposed (participants living ≥ 400 meters from the power lines). The authors reported a non-statistically significant association between childhood leukemia and a residence distance of <100 meters; no statistically significant associations were reported for any distance, including when stratifying by age (< 5 or ≥ 5 years) or when restricting to acute lymphoblastic leukemia ("ALL").

- Nguyen et al. (2023) extended their previous investigation (Nguyen et al., 2022) into whether pesticide exposure was an independent risk factor or confounder for childhood leukemia in the presence of magnetic-field exposure from high voltage power lines by examining the potential impact of specific pesticide exposure factors (*e.g.*, intended use, chemical class, active ingredient). The authors found no statistically significant associations between distance to high voltage power lines or magnetic-field exposure and childhood leukemia, including when adjusting for pesticide exposures. Several of the examined pesticides were determined by the authors to be potential independent risk factors for childhood leukemia.

- Zagar et al. (2023) examined the relationship between magnetic fields and childhood cancers, including childhood leukemia, in Slovenia. Cancer cases, including 194 cases of leukemia, were identified from the Slovenian Cancer Registry; cases were then classified into one of five calculated magnetic-field exposure levels (ranging from < 0.1 μT [< 1 mG] to ≥ 0.4 μT [≥ 4 mG]) based on residential distance to high voltage (*e.g.*, 110-kV, 220-kV, and 400-kV) power lines. The authors reported that less than 1% of Slovenian children and adolescents lived in an area near high voltage power lines. No differences in the development of childhood cancers, including leukemia, brain tumors, or all cancers combined, were reported across the five exposure categories.

- Crespi et al. (2024) assessed the association between residential proximity to electricity transformers in multi-story residential buildings and childhood leukemia development in the International Transformer Exposure study. Participants were required to live in an apartment building that contained a built-in transformer; exposure was estimated using the participants' apartment location relative to the transformer and categorized as high exposure (located above or adjacent to the transformer), intermediate exposure (located on the same floor as apartments in the high exposure category), or unexposed (all other apartments). In the pooled analyses of five countries' data, a total of 74 cases and 20,443 controls were included; 18 of the 74 cases were identified in the intermediate or high exposure categories. No significant associations were reported between proximity to residential transformers and childhood leukemia. Sensitivity analyses performed using the data from one of the five countries (Finland) where a cohort study design was used, also reported no significant associations. The authors concluded that the evidence for an elevated risk of

childhood leukemia from proximity to residential transformers was "weak."

- Duarte-Rodríguez et al. (2024) conducted a population-based case-control study to examine the geographical distribution of childhood ALL cases in Mexico City, Mexico. Cases and controls were geolocated using the most recent residential address, and a spatial scan statistic was used to detect spatial clusters of cancer cases. The authors identified eight spatial clusters of cases, representing nearly 40% of all cases included in the study (n=1,054 cases). The authors noted that six of the eight spatial clusters were located in proximity to high voltage power lines and high voltage electric installations (distances not specified), and that the remaining two clusters were located near former petrochemical industrial facility sites. Since the study did not directly assess magnetic-field exposure and made no conclusions about magnetic-field exposure and cancer development, this study adds little value to the existing literature regarding a potential association between exposure to ELF EMF and childhood leukemia development.

- Malavolti et al. (2024) examined the association between magnetic-field exposure from transformer stations and childhood leukemia in the same Italian study population as Malagoli et al. (2023). Magnetic-field exposure was estimated based on residential distance to the nearest transformer station, and participants were then categorized as exposed or unexposed using two different distance cut-points: residing within a radius of 15 or 25 meters from the transformer station (exposed); residing ≥ 15 meters or ≥ 25 meters from the transformer station (unexposed). No significant associations were reported for all leukemias, or ALL specifically, when either distance cut-point was used, and in fact no association at all (an odds ratio = 1.0) was observed when the more stringent cut-point of 15 meters was used. In sub-analyses that stratified by participant age (< 5 years vs. ≥ 5 years), no significant associations were reported for either age category.

- Norzaee et al. (2024) conducted a hospital-based case-control study that investigated the association between residential proximity to urban land uses (such as highways, petrol stations, power lines, and bus stations) and childhood leukemia and lymphoma in Tehran, Iran. The study population included 428 childhood leukemia and 428 childhood lymphoma cases, diagnosed between 2016 and 2021, and 428 controls, selected from the same hospitals as the cases. To be eligible for inclusion in the study, cases and controls had to have been living at their residence for at least 1 year prior to enrollment and be between 1 and 15 years of age. Logistic regression models adjusting for parental smoking, sex, birth year, and family history of cancer, indicated some statistically significant associations with proximity to petrol stations and highways but not with proximity to power lines. Children living within 100 meters of highways had increased odds of developing leukemia and lymphoma compared to children living at a further distance from highways, while proximity to petrol stations (< 100 meters) was associated with leukemia development but not lymphoma. The authors reported an association between

childhood leukemia development and living within 50 meters of power lines compared to living further away, but contrary to the authors' description, this finding was not statistically significant.[34] The authors also noted that this evaluation was based on a limited sample size of only 12 cases. No associations were observed between proximity to power lines and childhood lymphoma development.

Epidemiologic studies of EMF and neurodegenerative diseases published during the above referenced period include:

- Seelen et al. (2014) conducted a population-based case-control study in the Netherlands and included 1,139 cases diagnosed with amyotrophic lateral sclerosis ("ALS") between 2006 and 2013 and 2,864 frequency-matched controls. The shortest distance from the case and control residences to the nearest high voltage power line (50 to 380 kV) was determined by geocoding. No statistically significant associations between residential proximity to power lines with voltages of either 50 to 150 kV or 220 to 380 kV and ALS were reported.

- Sorahan and Mohammed (2014) analyzed mortality from neurodegenerative diseases in a cohort of approximately 73,000 electricity supply workers in the United Kingdom. Cumulative occupational exposure to magnetic-fields was calculated for each worker in the cohort based on their job titles and job locations. Death certificates were used to identify deaths from neurodegenerative diseases. No associations or trends for any of the included neurodegenerative diseases (Alzheimer's disease, Parkinson's disease, and ALS) were observed with various measures of calculated magnetic fields.

- Koeman et al. (2015, 2017) analyzed data from the Netherlands Cohort Study of approximately 120,000 men and women who were enrolled in the cohort in 1986 and followed up until 2003. Lifetime occupational history, obtained through questionnaires, and job-exposure matrices on ELF magnetic fields and other occupational exposures were used to assign exposure to study subjects. Based on 1,552 deaths from vascular dementia, the researchers reported a statistically not significant association of vascular dementia with estimated exposure to metals, chlorinated solvents, and ELF magnetic fields. However, because no exposure-response relationship for cumulative exposure was observed and because magnetic fields and solvent exposures were highly correlated with exposure to metals, the authors attributed the association with ELF magnetic fields and solvents to confounding by exposure to metals (Koeman et al., 2015). Based on a total of 136 deaths from ALS among the cohort members, the authors reported a statistically significant, approximately two-fold association with ELF magnetic fields in the highest exposure category.

[34] In Table 2 of the paper, the reported adjusted odds ratio for living within 50 meters of power lines was 2.90, with a 95% confidence interval ranging from 0.92 to 9.14. An odd ratio with a 95% confidence interval including 1.0 is considered statistically non-significant. A 95% confidence interval reflects a range of values that is expected to include the true value 95% of the times.

This association, however, was no longer statistically significant when adjusted for exposure to insecticides (Koeman et al., 2017).

- Fischer et al. (2015) conducted a population-based case-control study that included 4,709 cases of ALS diagnosed between 1990 and 2010 in Sweden and 23,335 controls matched to cases on year of birth and sex. The study subjects' occupational exposures to ELF magnetic fields and electric shocks were classified based on their occupations, as recorded in the censuses and corresponding job-exposure matrices. Overall, neither magnetic fields nor electric shocks were related to ALS.

- Vergara et al. (2015) conducted a mortality case-control study of occupational exposure to electric shock and magnetic fields and ALS. They analyzed data on 5,886 deaths due to ALS and over 58,000 deaths from other causes in the United States between 1991 and 1999. Information on occupation was obtained from death certificates and job-exposure matrices were used to categorize exposure to electric shocks and magnetic fields. Occupations classified as "electric occupations" were moderately associated with ALS. The authors reported no consistent associations for ALS, however, with either electric shocks or magnetic fields, and they concluded that their findings did not support the hypothesis that exposure to either electric shocks or magnetic fields explained the observed association of ALS with "electric occupations."

- Pedersen et al. (2017) investigated the occurrence of central nervous system diseases among approximately 32,000 male Danish electric power company workers. Cases were identified through the national patient registry between 1982 and 2010. Exposure to ELF magnetic fields was determined for each worker based on their job titles and area of work. A statistically significant increase was reported for dementia in the high exposure category when compared to the general population, but no exposure-response pattern was identified, and no similar increase was reported in the internal comparisons among the workers. No other statistically significant increases among workers were reported for the incidence of Alzheimer's disease, Parkinson's disease, motor neuron disease, multiple sclerosis, or epilepsy, when compared to the general population, or when incidence among workers was analyzed across estimated exposure levels.

- Vinceti et al. (2017) examined the association between ALS and calculated magnetic-field levels from high voltage power lines in Italy. The authors included 703 ALS cases and 2,737 controls; exposure was assessed based on residential proximity to high voltage power lines. No statistically significant associations were reported and no exposure-response trend was observed. Similar results were reported in subgroup analyses by age, calendar period of disease diagnosis, and study area.

- Checkoway et al. (2018) investigated the association between Parkinsonism[35] and occupational exposure to magnetic fields and several other agents (endotoxins, solvents, shift work) among 800 female textile workers in Shanghai. Exposure to magnetic fields was assessed based on the participants' work histories. The authors reported no statistically significant associations between Parkinsonism and occupational exposure to any of the agents under study, including magnetic fields.

- Gunnarsson and Bodin (2018) conducted a meta-analysis of occupational risk factors for ALS. The authors reported a statistically significant association between occupational exposures to EMF, estimated using a job-exposure matrix, and ALS among the 11 studies included. Statistically significant associations were also reported between ALS and jobs that involve working with electricity, heavy physical work, exposure to metals (including lead) and chemicals (including pesticides), and working as a nurse or physician. The authors reported some evidence for publication bias. In a subsequent publication, Gunnarsson and Bodin (2019) updated their previous meta-analysis to also include Parkinson's disease and Alzheimer's disease. A slight, statistically significant association was reported between occupational exposure to EMF and Alzheimer's disease; no association was observed for Parkinson's disease.

- Huss et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of ALS and occupational exposure to magnetic fields. The authors reported a weak overall association; a slightly stronger association was observed in a subset analysis of six studies with full occupational histories available. The authors noted substantial heterogeneity among studies, evidence for publication bias, and a lack of a clear exposure-response relationship between exposure and ALS.

- Jalilian et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of occupational exposure to magnetic fields and Alzheimer's disease. The authors reported a moderate, statistically significant overall association; however, they noted substantial heterogeneity among studies and evidence for publication bias.

- Röösli and Jalilian (2018) performed a meta-analysis using data from five epidemiologic studies examining residential exposure to magnetic fields and ALS. A statistically non-significant negative association was reported between ALS and the highest exposed group, where exposure was defined based on distance from power lines or calculated magnetic-field level.

- Gervasi et al. (2019) assessed the relationship between residential distance to

[35] Parkinsonism is defined by Checkoway et al. (2018) as "a syndrome whose cardinal clinical features are bradykinesia, rest tremor, muscle rigidity, and postural instability. Parkinson disease is the most common neurodegenerative form of [parkinsonism]" (p. 887).

overhead power lines in Italy and risk of Alzheimer's dementia and Parkinson's disease. The authors included 9,835 cases of Alzheimer's dementia and 6,810 cases of Parkinson's disease; controls were matched by sex, year of birth, and municipality of residence. A weak, statistically non-significant association was observed between residences within 50 meters of overhead power lines and both Alzheimer's dementia and Parkinson's disease, compared to distances of over 600 meters.

- Peters et al. (2019) examined the relationship between ALS and occupational exposure to both magnetic fields and electric shock in a pooled study of data from three European countries. The study included 1,323 ALS cases and 2,704 controls matched for sex, age, and geographic location; exposure was assessed based on occupational title and defined as low (background), medium, or high. Statistically significant associations were observed between ALS and ever having been exposed above background levels to either magnetic fields or electric shocks; however, no clear exposure-response trends were observed with exposure duration or cumulative exposure. The authors also noted significant heterogeneity in risk by study location.

- Filippini et al. (2020) investigated the associations between ALS and several environmental and occupational exposures, including electromagnetic fields, within a case-control study in Italy. The study included 95 cases and 135 controls matched on age, gender, and residential province; exposure to electromagnetic fields was assessed using the participants' responses to questions related to occupational use of electric and electronic equipment, occupational EMF exposure, and residential distance to overhead power lines. The authors reported a statistically significant association between ALS and residential proximity to overhead power lines and a statistically non-significant association between ALS and occupational exposure to EMF; occupational use of electric and electronic equipment was associated with a statistically non-significant decrease in ALS development.

- Huang et al. (2020) conducted a meta-analysis of 43 epidemiologic studies examining potential occupational risk factors for dementia or mild cognitive impairment. The authors included five cohort studies and seven case-control studies related to magnetic-field exposure. For both study types, the authors reported positive associations between dementia and work-related magnetic-field exposures. The paper, however, provided no information on the occupations held by the study participants, their magnetic-field exposure levels, or how magnetic-field levels were assessed; therefore, the results are difficult to interpret. The authors also reported a high level of heterogeneity among studies. Thus, this analysis adds little, if any, to the overall weight of evidence on a potential association between dementia and magnetic fields.

- Jalilian et al. (2020) conducted a meta-analysis of ALS and occupational exposure to both magnetic fields and electric shocks within 27 studies from Europe, the United States, and New Zealand. A weak, statistically significant

association was reported between magnetic-field exposure and ALS; however, the authors noted evidence of study heterogeneity and publication bias. No association was observed between ALS and electric shocks.

- Chen et al. (2021) conducted a case-control study to examine the association between occupational exposure to electric shocks, magnetic fields, and motor neuron disease ("MND") in New Zealand. The study included 319 cases with a MND diagnosis (including ALS) and 604 controls, matched on age and gender; exposure was assessed using the participants' occupational history questionnaire responses and previously developed job-exposure matrices for electric shocks and magnetic fields. The authors reported no associations between MND and exposure to magnetic fields; positive associations were reported between MND and working at a job with the potential for electric shock exposure.

- Grebeneva et al. (2021) evaluated disease rates among electric power company workers in the Republic of Kazakhstan. The authors included three groups of "exposed" workers who "were in contact with equipment generating [industrial frequency EMF]" (a total of 161 workers), as well as 114 controls "who were not associated with exposure to electromagnetic fields." Disease rates were assessed "based on analyzing the sick leaves of employees" from 2010 to 2014 and expressed as "incidence rate per 100 employees." The authors reported a higher "incidence rate" of "diseases of the nervous system" in two of the exposed categories compared to the non-exposed group. No meaningful conclusions from the study could be drawn, however, because no specific diagnoses within "diseases of the nervous system" were identified in the paper and no clear description was provided on how the authors defined and calculated "incidence rate" for the evaluated conditions. In addition, no measured or calculated magnetic-field levels were presented by the authors.

- Filippini et al. (2021) conducted a meta-analysis to assess the dose-response relationship between residential exposure to magnetic fields and ALS. The authors identified six ALS epidemiologic studies, published between 2009 and 2020, that assessed exposure to residential magnetic fields by either distance from overhead power lines or magnetic-field modeling. They reported a decrease in risk of ALS in the highest exposure categories for both distance-based and modeling-based exposure estimates. The authors also reported that their dose-response analyses "showed little association between distance from power lines and ALS"; the data were too sparse to conduct a dose-response analysis for modeled magnetic-field estimates. The authors noted that their study was limited by small sample size, "imprecise" exposure categories, the potential for residual confounding, and by "some publication bias."

- Jalilian et al. (2021) conducted a meta-analysis of occupational exposure to ELF magnetic fields and electric shocks and development of ALS. The authors included 27 studies from Europe, the United States, and New Zealand that were published between 1983 and 2019. A weak, statistically significant association

was reported between magnetic-field exposure and ALS, and no association was observed between electric shocks and ALS. Indications of publication bias and "moderate to high" heterogeneity were identified for the studies of magnetic-field exposure and ALS, and the authors noted that "the results should be interpreted with caution."

- Goutman et al. (2022) examined occupational exposures, including "electromagnetic radiation" exposure, and associations with ALS in a case-control study of Michigan workers across various industries. The study included 381 cases diagnosed with ALS, all patients at the University of Michigan's Pranger ALS clinic, and 272 controls recruited from an online database for the University of Michigan. Participants were enrolled from 2010 to 2020 and completed a written survey of their work history and occupational exposures to nine exposure categories, including electromagnetic fields, particulate matter ("PM"), and pesticides. Exposure to electromagnetic fields was ascertained with a binary question asking whether they were "[e]xposed to power lines, transformation [*sic*] stations or other EM [electromagnetic radiation]?" The analysis was adjusted for age, sex, and military service. No association was observed between electromagnetic field exposure and ALS, while exposure to PM, pesticides, and metals, among others, were determined by the authors to be "associated with an increased ALS risk in this cohort."

- Sorahan and Nichols (2022) investigated magnetic-field exposure and mortality from MND in a large cohort of employees of the former Central Electricity Generating Board of England and Wales. The study included nearly 38,000 employees first hired between 1942 and 1982 and still employed in 1987. Estimates of exposure magnitude, frequency, and duration were calculated using data from the power stations and the employees' job histories, and were described in detail in a previous publication (Renew et al., 2003). Mortality from MND in the total cohort was observed to be similar to national rates. No statistically significant dose-response trends were observed with lifetime, recent, or distant magnetic-field exposure; statistically significant associations were observed for some categories of recent exposure, but not for the highest exposure category.

- Duan et al. (2023) conducted a meta-summary of ALS and exposure to magnetic fields, which was 1 of 22 non-genetic risk factors evaluated across 67 studies for its association with ALS. Six of the 67 studies examined magnetic-field exposure and associations with ALS; of the six studies identified, the authors included four case-control studies and one cohort study in their meta-analysis. Pooling results from these studies resulted in significant increased odds of ALS among individuals with higher (but undefined) exposure to magnetic fields. However, this pooled odds ratio for magnetic-field exposure (1.22) was below the minimum odds ratio threshold of 1.3 set by the authors as the criterion for defining an exposure as an ALS risk factor. In addition, the authors identified "substantial" heterogeneity between studies evaluating magnetic-field exposure and ALS.

- In a subsequent publication of the same study as Goutman et al. (2022), Goutman et al. (2023) assessed the potential for the same nine exposure categories, including "electromagnetic radiation" exposure, to be risk factors for ALS progression, including survival and onset segment (bulbar, cervical, lumbar). Electromagnetic field exposure was not significantly associated with ALS survival or with bulbar onset compared to lumbar, but was significantly associated with cervical onset compared to lumbar. It is worth noting that an association with cervical onset compared to lumbar was observed in the majority (7/9) of the exposure categories. The authors make no concluding statements on electromagnetic field exposure and ALS and instead emphasize that occupational pesticide exposure and working in military operations were significantly associated with worse ALS survival.

- Saucier et al. (2023) carried out three systematic reviews of studies that evaluated relationships between urbanization, air pollution, and water pollution, and ALS development. The authors identified five studies that assessed whether electromagnetic fields (of varying frequencies) and high voltage infrastructure were significant urbanization risk factors for ALS, but make no conclusion about magnetic-field exposure and ALS development based on these studies, therefore adding little value to the existing literature.

- Vasta et al. (2023) examined the relationship between residential distance to power lines and ALS development in a cohort study of 1,098 participants in Italy. The authors reported no differences in the age of ALS onset or ALS progression rate between low-exposed and high-exposed participants based on residential distance to power lines at the time of the participants' diagnosis. Similarly, no differences were observed when exposure was based on residential distance to repeater antennas.

- Vitturi et al. (2023) conducted a systematic review and meta-analysis of case-control studies examining potential occupational risk factors related to multiple sclerosis, including solvents, mercury, pesticides, and low-frequency magnetic fields. The authors included 24 studies in their review, but only one of the included studies investigated exposure to magnetic fields (Pedersen et al., 2017, discussed above), thereby adding little new information to the existing body of research.

- Jones et al. (2025) conducted an "umbrella review," which is a review of systematic reviews and meta-analyses of environmental risk factors for various types of dementia and mild cognitive impairment. The authors included 19 review articles, containing 37 meta-analyses, published between 2008 and 2023, in their analysis, and identified nine exposures associated with higher risk of all-cause dementia, including particulate matter, carbon monoxide, shift work, chronic noise, and ELF magnetic fields; several of these exposures, including ELF magnetic fields, were also identified as being associated with Alzheimer's disease dementia. The authors' analysis of ELF magnetic-field exposure and all-cause dementia, however, was based on a single study, and the

analysis of ELF magnetic-field exposure and Alzheimer's disease dementia was based on only four studies, three of which were rated as being of "low" or "moderate" study quality, thereby adding little valuable information to the existing body of research. The authors did not identify any systematic reviews reporting associations between any of these environmental factors and mild cognitive impairment.

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V. NOTICE

A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project. For all routes that the Applicant proposed to be noticed, provide minimum, maximum and average structure heights.

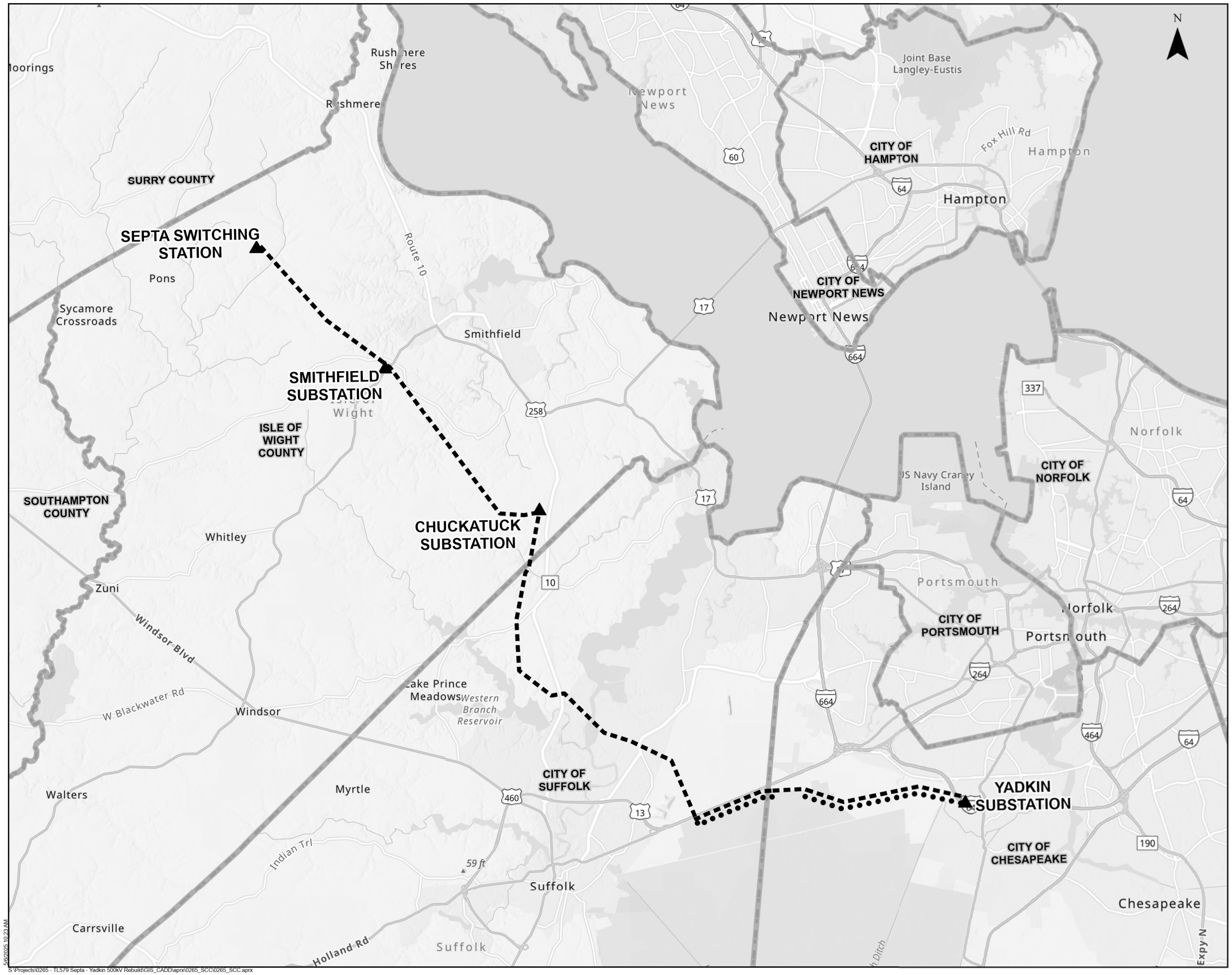
Response: Dominion Energy Virginia's proposed Rebuild Project includes the rebuild of approximately 33.1 miles of the existing Septa-Yadkin Line #579 (the Line #579 Rebuild) and the partial rebuild of approximately 7.7 miles of the existing Suffolk-Thrasher Line #2110 (the Line #2110 Partial Rebuild) all within existing varying width right-of-way. A map is provided in Attachment V.A that shows the route of the proposed Rebuild Project, as well as the location of the related substations and switching stations. A written description of the route is as follows:

The route for the Line #579 Rebuild begins at the Septa Switching Station in Isle of Wight County, Virginia, located off of Mill Swamp Road, approximately 1.4 miles southeast from the intersection with Burwells Bay Road. The route exits the Septa Switching Station within the existing right-of-way corridor. The route then crosses Route 626 (Mill Swamp Road) and continues generally southeast crossing Stallings Creek, Stallings Creek Drive, Emmanuel Church Road, Magnet Drive, and Foursquare Road before passing north of the Smithfield Substation. The route continues to head in a general southeasterly direction, crossing Route 258 (Courthouse Highway), Carroll Bridge Road, Champion Swamp, Bowling Green Road, Arabian Trail/Private Stock Lane, and Longview Drive before passing south of the Chuckatuck Substation.

At this point the route heads south crossing Oliver Drive, Meadow Drive, and Chuckatuck Creek before crossing into the City of Suffolk. The route continues in a general southerly direction, crossing Shady Pine Lane, Audubon Road, Everett Road, Moore Farm Lane, Five Mile Road, Route 10 (Godwin Boulevard), the Nansemond River, Route 337 (Nansemond Parkway), the Norfolk Southern Railroad, Route 13 (Portsmouth Boulevard), and the CSX Railroad. At this point, Line #579 joins with Line #2110 in the Great Dismal National Wildlife Refuge and turns northeast paralleling the southside of the CSX Railroad corridor. The route continues east, enters the City of Chesapeake and crosses East Ditch, Truitt Road, and Peach Road before existing the Great Dismal Swamp National Wildlife Refuge. Continuing east, the route crosses Biernol Avenue, West Colony Manor, Galberry Road, Interstate 64, Yadkin Road, and the Norfolk Southern Railroad before terminating at the existing Yadkin Substation located east of Interstate 64, south of Yadkin Road, and west of George Washington Highway.

The existing structures will be replaced primarily with dulled galvanized steel lattice structures, except south of Highway 13 where the existing structures will be replaced primarily with H-frame structures to support the rebuilt Line #579 and Line #2110. The proposed structures supporting the rebuilt Line #579 and Line #2110 will be constructed entirely within the existing corridor, which is cleared and maintained at a variable width ranging from 130 feet to 350 feet, or within the

Company's existing property rights. The structures will have a minimum structure height of approximately 92 feet, a maximum structure height of approximately 180 feet, and an average structure height of approximately 138 feet, based on preliminary conceptual design, including foundation reveal and subject to change based on final engineering design.



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ATTACHMENT V.A.
PROJECT OVERVIEW MAP

Septa - Yadkin 500 kV Line #579 Rebuild and
Suffolk - Thrasher 230 kV Line #2110 Partial Rebuild

City of Chesapeake, Isle of Wight County and
City of Suffolk, Virginia

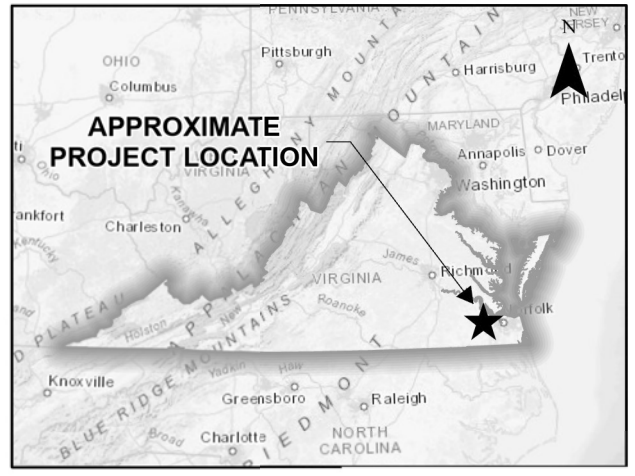
Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0265	KAS	5/6/2025

SITE DATA

- Line #579 Rebuild
- Line #2110 Partial Rebuild
- Existing Substation/Switching Station
- County Boundary

Notes:
1. Basemap from ESRI World Topographic Map
2. Project right-of-way provided by Dominion Energy Virginia



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SHEET 1 OF 1

V. NOTICE

B. List Applicant offices where members of the public may inspect the application. If applicable, provide a link to website(s) where the application may be found.

Response: Shortly after filing, the Application will be made available electronically for public inspection at: www.dominionenergy.com/septa-yadkin.

V. NOTICE

C. List all federal, state, and local agencies and/or officials that may reasonably be expected to have an interest in the proposed construction and to whom the Applicant has furnished or will furnish a copy of the application.

Response:

Ms. Bettina Rayfield
Virginia Department of Environmental Quality
Office of Environmental Impact Review
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Michelle Henicheck
Virginia Department of Environmental Quality
Office of Wetlands and Streams
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Rene Hypes
Virginia Department of Conservation and Recreation
Division of Natural Heritage
600 East Main Street, 24th Floor
Richmond, Virginia 23219

Environmental Reviewer
Virginia Department of Conservation and Recreation
Planning & Recreation Bureau
600 East Main Street, 17th Floor
Richmond, Virginia 23219

Ms. Hannah Schul
Virginia Department of Wildlife Resources
Wildlife Information and Environmental Services
7870 Villa Park, Suite 400
Henrico, Virginia 23228

Mr. Keith Tignor
Virginia Department of Agriculture and Consumer Services
Office of Plant Industry Services
102 Governor Street
Richmond, Virginia 23219

Mr. Clint Folks
Virginia Department of Forestry
Forestland Conservation Division
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

Scoping at VMRC
Virginia Marine Resources Commission
Habitat Management Division
Building 96, 380 Fenwick Road
Ft. Monroe, Virginia 23651

Mr. Troy Andersen
U.S. Fish and Wildlife Service
Virginia Field Office, Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Ms. Regena Bronson
U.S. Army Corps of Engineers
Fredericksburg Field Office
10300 Spotsylvania Parkway, Suite 230
Fredericksburg, VA 22408

Ms. Arlene Fields Warren
Virginia Department of Health
Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, Virginia 23219

Mr. Scott Denny
Virginia Department of Aviation
Airport Services Division
5702 Gulfstream Road
Richmond, Virginia 23250

Virginia Outdoors Foundation
39 Garrett Street, Suite 200
Warrenton, Virginia 20186

Mr. Christopher G. Hall, P.E
Hampton Roads District Engineer
Virginia Department of Transportation
7511 Burbage Drive
Suffolk, Virginia 23435

Mr. Scott A. Smith
Manager of Engineering
Community Electric Cooperative
52 West Windsor Blvd
Windsor, Virginia 23487-0268

Mr. Christopher M. Price
City of Chesapeake, City Manager
306 Cedar Road, 6th Floor
Chesapeake, Virginia 23322

Mr. Albert S. Moor II
Suffolk City Manager
PO Box 1858
Suffolk, Virginia 23439

Mr. Donald T. Robertson
County Administrator
P.O. Box 80
17090 Monument Circle
Isle of Wight, Virginia 23397

V. NOTICE

D. If the application is for a transmission line with a voltage of 138 kV or greater, provide a statement and any associated correspondence indicating that prior to the filing of the application with the SCC the Applicant has notified the chief administrative officer of every locality in which it plans to undertake construction of the proposed line of its intention to file such an application, and that the Applicant gave the locality a reasonable opportunity for consultation about the proposed line (similar to the requirements of § 15.2-2202 of the Code for electric transmission lines of 150 kV or more).

Response: In accordance with Va. Code §15.2-2202 E, letters dated April 22, 2025, were delivered to Mr. Christopher M. Price, City Manager for the City of Chesapeake, Mr. Albert S. Moor II, City Manager for the City of Suffolk, and Mr. Donald T. Robertson, County Administrator for Isle of Wight County, where the Rebuild Project is located. These letters stated the Company's intention to file this Application and invited the Cities and County to consult with the Company about the Rebuild Project. The letters to the City of Chesapeake, City of Suffolk, and Isle of Wight County officials are included as Attachments V.D.1, V.D.2, and V.D.3, respectively.

Dominion Energy Services, Inc.
5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

Mr. Christopher M. Price
City of Chesapeake – City Manager
306 Cedar Road, 6th Floor
Chesapeake, Virginia 23322

April 22, 2025

RE: Dominion Energy Virginia's 500 kV Septa-Yadkin Line #579 Rebuild and 230 kV Suffolk-Thrasher Line # 2110 Partial Rebuild

Notice Pursuant to Va. Code § 15.2-2202 E

Mr. Price,

Dominion Energy Virginia (the "Company") is proposing to rebuild within existing right-of-way the Company's existing approximately 33.1-mile overhead 500 kilovolt ("kV") Septa-Yadkin Line #579 between the Company's Septa Switching Station and Yadkin Substation (the "Line #579 Rebuild"). The Company is also proposing to rebuild within existing right-of-way approximately 7.7 miles of the Company's existing overhead 230 kV Suffolk-Thrasher Line #2110 (the "Line #2110 Partial Rebuild") where that 230 kV line is on shared structures with Line #579. The Line #579 Rebuild and the Line #2110 Partial Rebuild are collectively referred to as the "Rebuild Project." The Rebuild Project is located in the Cities of Chesapeake and Suffolk and the Isle of Wight County, Virginia.

The Rebuild Project is necessary to replace an existing aging transmission line (*i.e.*, Septa-Yadkin Line #579), which is approaching the end of its service life, with a newly rebuilt line. The rebuild of Line #579 will necessitate the partial rebuild of Line #2110 where the two lines are on collocated structures, consistent with sound engineering judgment. The Company regularly replaces infrastructure approaching the end of its service life to maintain the reliability of the transmission system and to comply with the requirements and standards set by the North American Electric Reliability Corporation ("NERC").

The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") with the State Corporation Commission (the "Commission"). Pursuant to § 15.2-2202 E of the Code of Virginia, the Company is writing to notify the City of Chesapeake of the proposed Rebuild Project in advance of filing the CPCN application and

Dominion Energy Services, Inc.
5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

respectfully requests that you submit any comments or additional information you feel would have bearing on the Rebuild Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the route for the Rebuild Project and its general location. Once filed, all final materials, including the CPCN application and supporting materials, will be available for review on the Company's website at the following location: www.dominionenergy.com/septa-yadkin.

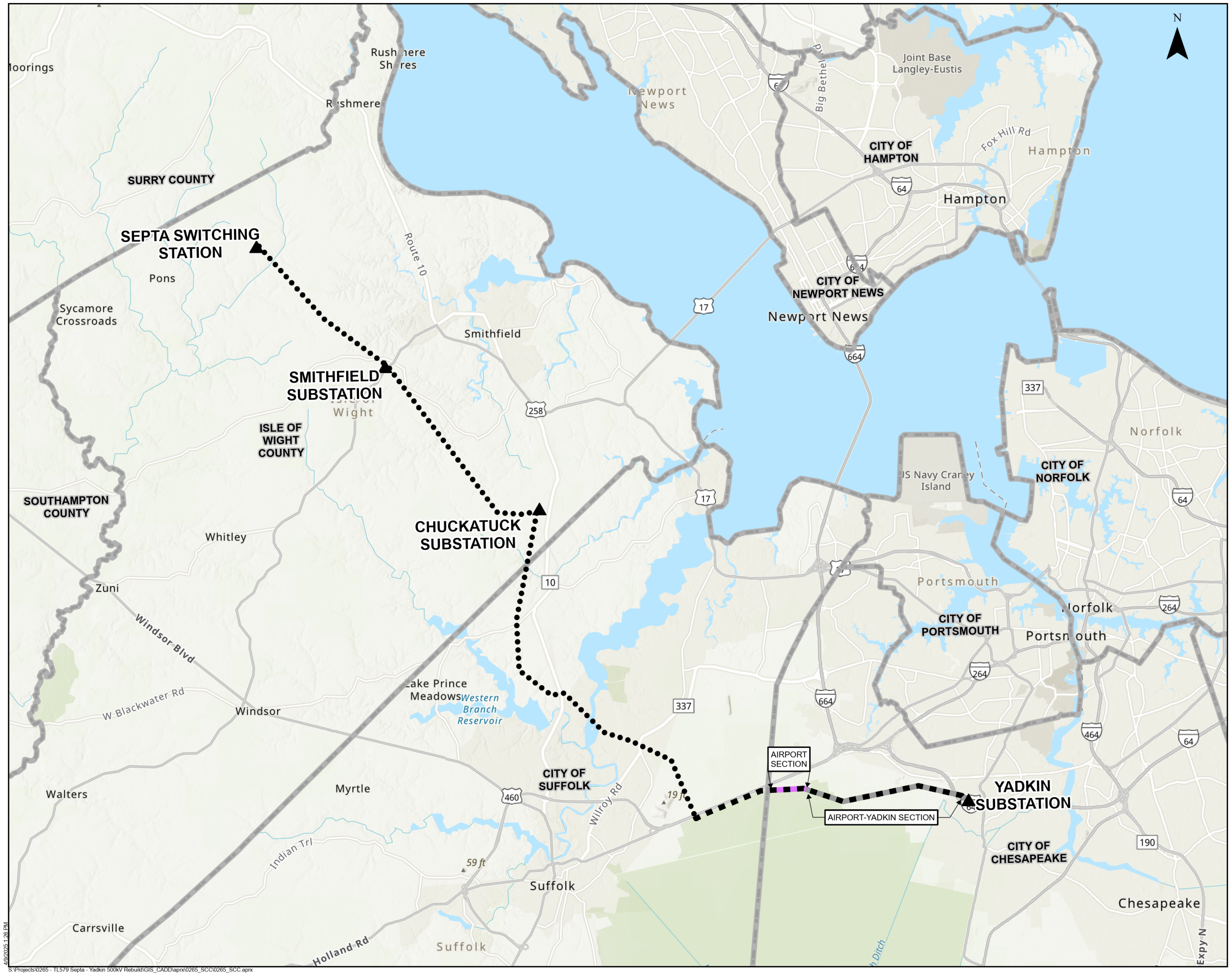
If you would like to receive a GIS shapefile of the Rebuild Project route to assist in your review, or if there are any questions, please do not hesitate to contact me at 434-532-7579 or Nancy.R.Reid@dominionenergy.com.

Dominion Energy Virginia appreciates your assistance with the review of this Rebuild Project and looks forward to any additional information you may have to offer.

Regards,

Nancy R. Reid
Senior Siting and Permitting Specialist

Enclosure: Project Overview Map
c/o: Kristy Edwards, External Affairs Rep ~ Eastern Virginia



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PROJECT OVERVIEW MAP

Septa - Yadkin 500 kV Line #579 Rebuild and
Suffolk - Thrasher 230 kV Line #2110 Partial Rebuild

City of Chesapeake, Isle of Wight County and
City of Suffolk, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0265	KAS	4/9/2025

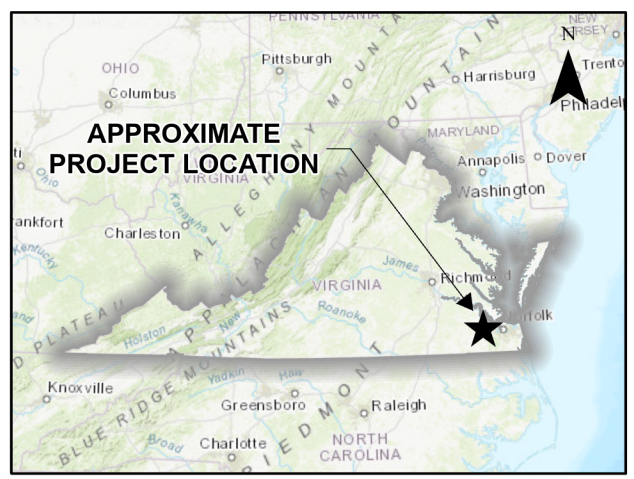
0 1.5 3 6 Miles

Scale is 1 IN = 3 MI when printed at original size of 11x17

SITE DATA

- Line #579 Single Circuit Segment
- Lines #579/2210 Double Circuit Segment
- Airport Section
- Airport-Yadkin Section
- Existing Substation/Switching Station
- County Boundary

Notes:
1. Basemap from ESRI World Topographic Map
2. Project right-of-way provided by Dominion Energy Virginia



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Glen Allen, VA 23060
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Mr. Albert S. Moor II
City of Suffolk – City Manager
PO Box 1858
Suffolk, VA 23439

April 22, 2025

RE: Dominion Energy Virginia's 500 kV Septa-Yadkin Line #579 Rebuild and 230 kV Suffolk-Thrasher Line # 2110 Partial Rebuild

Notice Pursuant to Va. Code § 15.2-2202 E

Mr. Moor,

Dominion Energy Virginia (the "Company") is proposing to rebuild within existing right-of-way the Company's existing approximately 33.1-mile overhead 500 kilovolt ("kV") Septa-Yadkin Line #579 between the Company's Septa Switching Station and Yadkin Substation (the "Line #579 Rebuild"). The Company is also proposing to rebuild within existing right-of-way approximately 7.7 miles of the Company's existing overhead 230 kV Suffolk-Thrasher Line #2110 (the "Line #2110 Partial Rebuild") where that 230 kV line is on shared structures with Line #579. The Line #579 Rebuild and the Line #2110 Partial Rebuild are collectively referred to as the "Rebuild Project." The Rebuild Project is located in the Cities of Chesapeake and Suffolk and the Isle of Wight County, Virginia.

The Rebuild Project is necessary to replace an existing aging transmission line (*i.e.*, Septa-Yadkin Line #579), which is approaching the end of its service life, with a newly rebuilt line. The rebuild of Line #579 will necessitate the partial rebuild of Line #2110 where the two lines are on collocated structures, consistent with sound engineering judgment. The Company regularly replaces infrastructure approaching the end of its service life to maintain the reliability of the transmission system and to comply with the requirements and standards set by the North American Electric Reliability Corporation ("NERC").

The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") with the State Corporation Commission (the "Commission"). Pursuant to § 15.2-2202 E of the Code of Virginia, the Company is writing to notify the City of Suffolk of the proposed Rebuild Project in advance of filing the CPCN application and

Dominion Energy Services, Inc.
5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

respectfully requests that you submit any comments or additional information you feel would have bearing on the Rebuild Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the route for the Rebuild Project and its general location. Once filed, all final materials, including the CPCN application and supporting materials, will be available for review on the Company's website at the following location: www.dominionenergy.com/septa-yadkin.

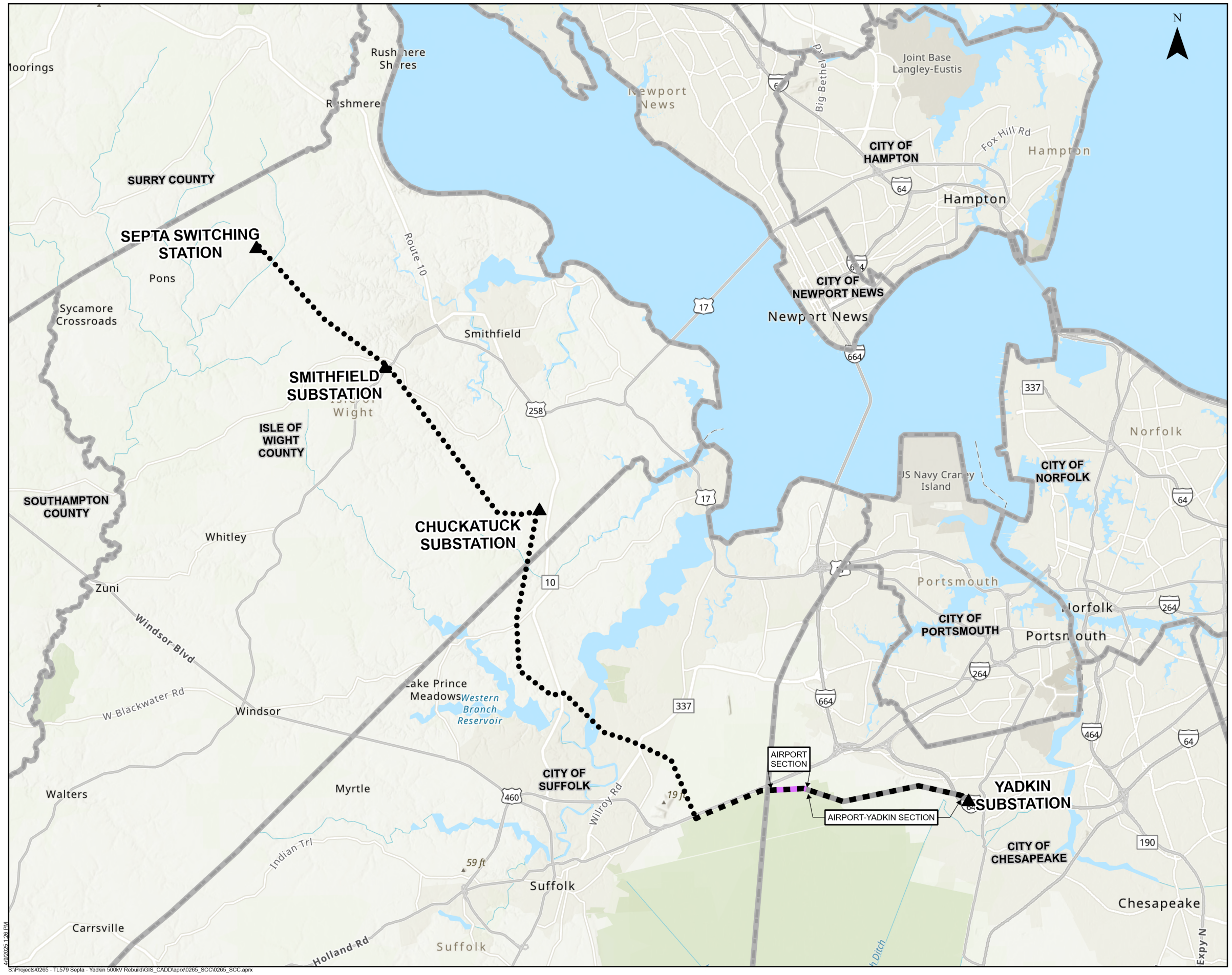
If you would like to receive a GIS shapefile of the Rebuild Project route to assist in your review, or if there are any questions, please do not hesitate to contact me at 434-532-7579 or Nancy.R.Reid@dominionenergy.com.

Dominion Energy Virginia appreciates your assistance with the review of this Rebuild Project and looks forward to any additional information you may have to offer.

Regards,

Nancy R. Reid
Senior Siting and Permitting Specialist

Enclosure: Project Overview Map
c/o: Kristy Edwards, External Affairs Rep ~ Eastern Virginia



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PROJECT OVERVIEW MAP

Septa - Yadkin 500 kV Line #579 Rebuild and
Suffolk - Thrasher 230 kV Line #2110 Partial Rebuild

City of Chesapeake, Isle of Wight County and
City of Suffolk, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0265	KAS	4/9/2025

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Scale is 1 IN = 3 MI when printed at original size of 11x17

SITE DATA

- Line #579 Single Circuit Segment
- Lines #579/2210 Double Circuit Segment
- Airport Section
- Airport-Yadkin Section
- Existing Substation/Switching Station
- County Boundary

Notes:
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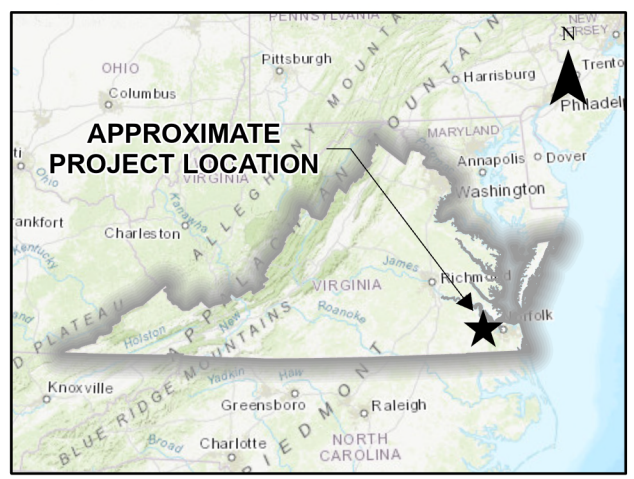

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5000 Dominion Boulevard, 3rd Floor
Glen Allen, VA 23060
DominionEnergy.com

Mr. Donald T. Robertson
Isle of Wight – County Administrator
PO Box 17090
Isle of Wight, VA 23397

April 22, 2025

RE: Dominion Energy Virginia's 500 kV Septa-Yadkin Line #579 Rebuild and 230 kV Suffolk-Thrasher Line # 2110 Partial Rebuild

Notice Pursuant to Va. Code § 15.2-2202 E

Mr. Robertson,

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The Rebuild Project is necessary to replace an existing aging transmission line (*i.e.*, Septa-Yadkin Line #579), which is approaching the end of its service life, with a newly rebuilt line. The rebuild of Line #579 will necessitate the partial rebuild of Line #2110 where the two lines are on collocated structures, consistent with sound engineering judgment. The Company regularly replaces infrastructure approaching the end of its service life to maintain the reliability of the transmission system and to comply with the requirements and standards set by the North American Electric Reliability Corporation ("NERC").

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Nancy R. Reid
Senior Siting and Permitting Specialist

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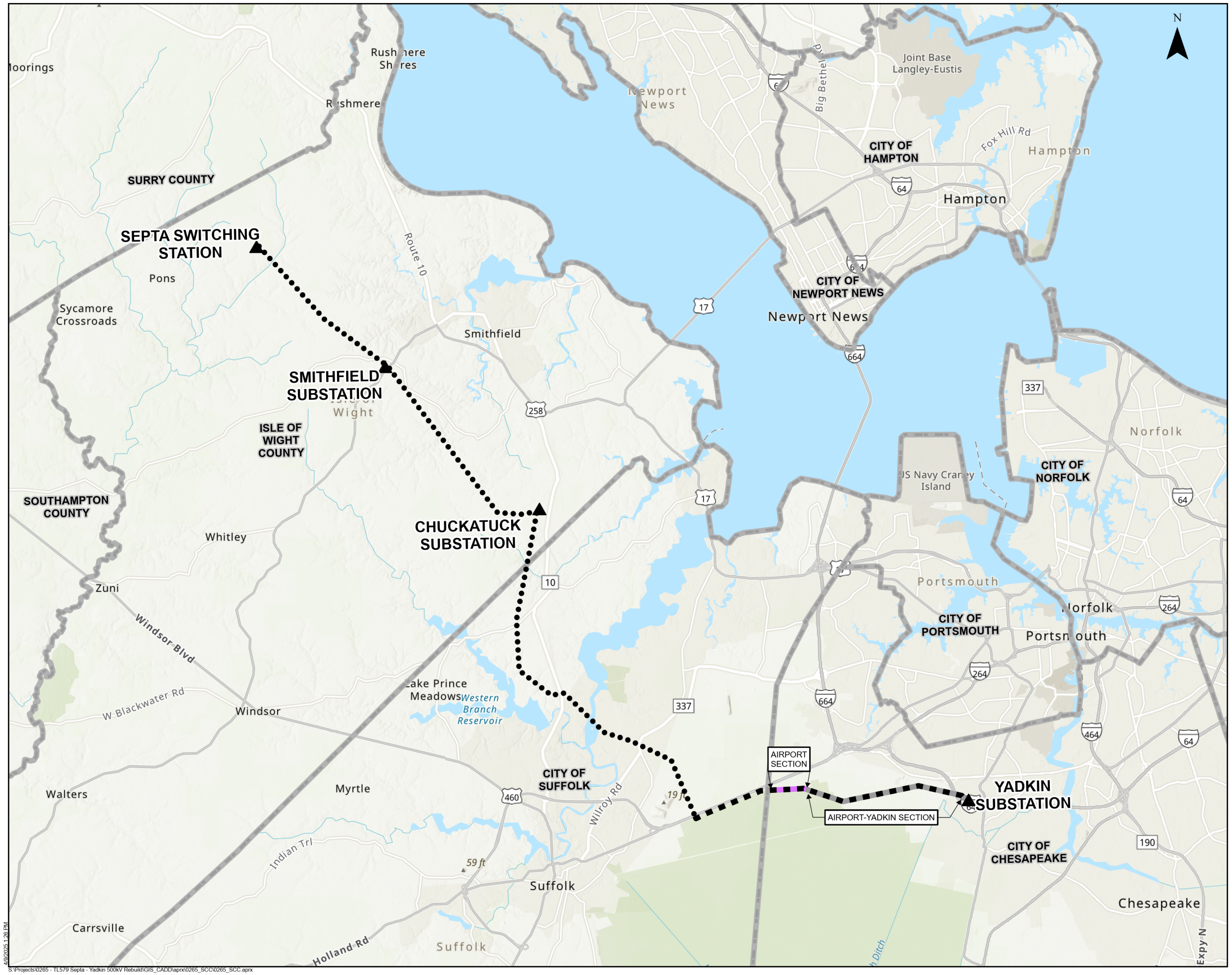
c/o: Kristy Edwards, External Affairs Rep ~ Eastern Virginia



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PROJECT OVERVIEW MAP

Septa - Yadkin 500 kV Line #579 Rebuild and
Suffolk - Thrasher 230 kV Line #2110 Partial Rebuild

City of Chesapeake, Isle of Wight County and
City of Suffolk, Virginia

Client:
Dominion Energy Virginia

C2 Env Project:	Prepared By:	Date:
0265	KAS	4/9/2025

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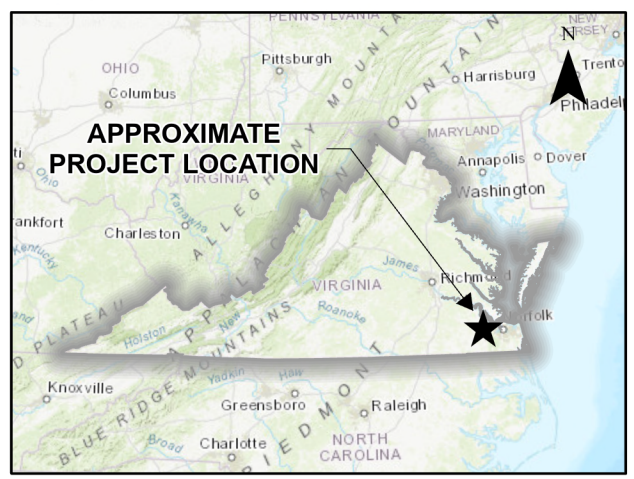

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SHEET 1 OF 1

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2025-00104
	)	
For approval and certification of electric	)	
transmission facilities: 500 kV Septa-Yadkin	)	
Line #579 Rebuild and 230 kV Suffolk-Thrasher	)	
Line #2110 Partial Rebuild	)	

IDENTIFICATION, SUMMARIES AND TESTIMONY OF DIRECT WITNESSES OF VIRGINIA ELECTRIC AND POWER COMPANY

Samuel L. Carter

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Reed A. Jennings

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Mohammad M. Othman

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Nancy R. Reid

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Samuel L. Carter

Title: Area Planning Engineer – Electric Transmission Planning

Summary:

Company Witness Samuel L. Carter sponsors those portions of the Appendix describing the Company's transmission system and need for, and benefits of, the proposed Rebuild Project, as follows:

- Section I.B: This section details the engineering justifications for the proposed project.
- Section I.C: This section describes the present system and details how the proposed project will effectively satisfy present and projected future load demand requirements.
- Section I.D: This section describes critical contingencies and associated violations due to the inadequacy of the existing system.
- Section I.E: This section explains feasible project alternatives.
- Section I.G: This section provides a system map of the affected area.
- Section I.H: This section provides the desired in-service date of the proposed project and the estimated construction time.
- Section I.J: This section provides information about the project if approved by the RTO.
- Section I.K: This section when applicable provides outage history and maintenance history for existing transmission lines if the proposed project is a rebuild and is due in part to reliability issues.
- Section I.M: This section when applicable contains information for transmission lines interconnecting a non-utility generator.
- Section I.N: This section when applicable provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed project.
- Section II.A.10: This section provides details of the construction plans for the proposed project, including requested and approved line outage schedules.

Additionally, Company Witness Carter co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Reed A. Jennings and Nancy R. Reid): This section details the primary justifications for the proposed project.
- Section I.F (co-sponsored with Company Witness Reed A. Jennings): This section describes any lines or facilities that will be removed, replaced or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.
- Section II.A.3 (co-sponsored with Company Witness Nancy R. Reid): This section provides color maps of existing or proposed rights-of-way in the vicinity of the project.

A statement of Mr. Carter's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
SAMUEL L. CARTER
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2025-00104

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Samuel L. Carter, and I am an Area Planning Engineer in the Electric Transmission Planning Department for the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for planning the Company's electric transmission system for voltages of 69 kilovolt ("kV") through 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to maintain structural integrity and reliability of its transmission system in compliance with the Company's mandatory electric transmission planning criteria ("Planning Criteria"), Dominion Energy Virginia proposes the following rebuild project located within existing right-of-way or within the Company's existing property rights in the Cities of Chesapeake and Suffolk and in Isle of Wight County, Virginia:

- Rebuild the Company's existing approximately 33.1-mile overhead 500 kV Septa-Yadkin Line #579 to address the condition of Line #579, which is approaching its end of service life. Beginning at the existing Septa Switching Station, approximately 24.6 miles of Line #579 currently is supported by single circuit 500 kV COR-TEN® lattice structures, which will be replaced primarily with single circuit 500 kV dulled galvanized steel lattice structures (the "Line #579

Single Circuit Segment" or the "Single Circuit Segment"). The remaining approximately 8.5 miles of Line #579 to the existing Yadkin Substation currently is supported primarily by double circuit 500 kV / 230 kV ("5/2") COR-TEN® lattice structures shared with the overhead single circuit 230 kV Suffolk-Thrasher Line #2110, which will be replaced primarily with double circuit 5/2 dulled galvanized steel H-frame structures (the "Line #579/#2110 Double Circuit Segment" or the "Double Circuit Segment"). Additionally, the Company proposes to replace the existing three-phase twin-bundled 2500 Aluminum Conductor Alloy Reinforced ("ACAR") conductor with three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductor with a summer transfer capability of 4,357 MVA for the entire 33.1 miles. The entirety of the approximately 33.1-mile Line #579 will be rebuilt within the Company's existing right-of-way, which varies in width between 130 and 350 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #579 Rebuild."

- Within the 8.5-mile Double Circuit Segment, rebuild approximately 7.7 miles of overhead single circuit 230 kV Suffolk-Thrasher Line #2110 from Structure #579/132 / #2110/36 through Structure #579/147 / #2110/51 and from Structure #579/154 / #2110/67 through Structure #579/183 / #2110/96. Additionally, the Company proposes to replace the existing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength 285 ("ACSS/TW/HS285") type conductor with three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA for the same 7.7-mile segment. The rebuild of the 7.7-mile segment of Line #2110 will be within the Company's existing right-of-way, which varies in width between 130 and 265 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #2110 Partial Rebuild."

- Perform station-related work at the Company's existing Septa Switching Station and Yadkin Substation.

The purpose of my testimony is to describe the Company's transmission system and the need for, and benefits of, the proposed Rebuild Project. I am sponsoring Sections I.B, I.C, I.D, I.E, I.G, I.H, I.J, I.K, I.M, I.N, and II.A.10 of the Appendix. Additionally, I co-sponsor the Executive Summary with Company Witnesses Reed A. Jennings, Mohammad O. Othman, and Nancy R. Reid; Section I.A of the Appendix with Company Witnesses Reed A. Jennings and Nancy R. Reid; Section I.F of the Appendix with Company Reed A. Jennings; and Section II.A.3 of the Appendix with Company Nancy R.

Reid.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
SAMUEL L. CARTER

Samuel L. Carter received a Bachelor of Science degree in Electrical Engineering from Virginia Polytechnic Institute and State University in 1979. He is licensed as a Professional Engineer in the Commonwealth of Virginia. Before rejoining Dominion Energy Virginia as a contractor in 2020, Mr. Carter worked for Westinghouse as a transformer design engineer from 1979 to 1988 and for Dominion Energy from 1988 to 2019 in various positions including Distribution Standards Engineer, East Richmond District Operations Supervisor, Distribution Planning Engineer and Transmission Planning Engineer (2008-2019).

Mr. Carter has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Reed A. Jennings

Title: Staff Civil Engineer

Summary:

Company Witness Reed A. Jennings sponsors those portions of the Appendix providing an overview of the design characteristics of the transmission facilities for the proposed Rebuild Project, and discussing electric and magnetic field levels, as follows:

- Section I.L: This section provides photographs illustrating the deterioration of structures and associated equipment as applicable.

- Section II.A.5: This section provides drawings of the right-of-way cross section showing typical transmission lines structure placements.

- Sections II.B.1 to II.B.3: These sections provide the line design and operational features of the proposed project.

- Section II.B.4: This section when applicable normally provides the line design and operational features of a proposed project.

- Section IV: This section provides analysis on the health aspects of electric and magnetic field levels.

Additionally, Company Witness Jennings co-sponsors the following portions of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Samuel L. Carter and Nancy R. Reid): This section details the primary justifications for the proposed project.

- Section I.F (co-sponsored with Company Witness Samuel L. Carter): This section describes any lines or facilities that will be removed, replaced or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.

- Section I.I (co-sponsored with Company Witness Mohammad M. Othman): This section provides the estimated total cost of the proposed project.

- Section II.B.5 (co-sponsored with Company Witness Nancy R. Reid): This section provides the mapping and structure heights for the existing overhead structures.

- Section V.A (co-sponsored with Company Witness Nancy R. Reid): This section provides information related to public notice of the proposed project.

A statement of Mr. Jennings's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
REED A. JENNINGS
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2025-00104

Q. Please state your name, position and place of employment, and business address.

A. My name is Reed A. Jennings, and I am a Staff Civil Engineer in the Transmission & Distribution Services Department at Burns & McDonnell. My business address is 110 Franklin Road SE, Suite 700, Roanoke, Virginia 24042. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your responsibilities as a Staff Civil Engineer at Burns & McDonnell?

A. I am responsible for evaluation of the transmission project requirements, feasibility studies, transmission design, construction package development, scope development, preliminary engineering and cost estimating for high voltage transmission and distribution substations.

Q. What is the purpose of your testimony in this proceeding?

A. In order to maintain structural integrity and reliability of its transmission system in compliance with the Company's mandatory electric transmission planning criteria ("Planning Criteria"), Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes the following rebuild project located within existing right-of-way or within the Company's existing property rights in the Cities of Chesapeake and Suffolk and in Isle of Wight County, Virginia:

- Rebuild the Company's existing approximately 33.1-mile overhead 500 kilovolt ("kV") Septa-Yadkin Line #579 to address the condition of Line #579, which is approaching its end of service life. Beginning at the existing Septa Switching Station, approximately 24.6 miles of Line #579 currently is supported by single circuit 500 kV COR-TEN® lattice structures, which will be replaced primarily with single circuit 500 kV dulled galvanized steel lattice structures (the "Line #579 Single Circuit Segment" or the "Single Circuit Segment"). The remaining approximately 8.5 miles of Line #579 to the existing Yadkin Substation currently is supported primarily by double circuit 500 kV / 230 kV ("5/2") COR-TEN® lattice structures shared with the overhead single circuit 230 kV Suffolk-Thrasher Line #2110, which will be replaced primarily with double circuit 5/2 dulled galvanized steel H-frame structures (the "Line #579/#2110 Double Circuit Segment" or the "Double Circuit Segment"). Additionally, the Company proposes to replace the existing three-phase twin-bundled 2500 Aluminum Conductor Alloy Reinforced ("ACAR") conductor with three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductor with a summer transfer capability of 4,357 MVA for the entire 33.1 miles. The entirety of the approximately 33.1-mile Line #579 will be rebuilt within the Company's existing right-of-way, which varies in width between 130 and 350 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #579 Rebuild."

- Within the 8.5-mile Double Circuit Segment, rebuild approximately 7.7 miles of overhead single circuit 230 kV Suffolk-Thrasher Line #2110 from Structure #579/132 / #2110/36 through Structure #579/147 / #2110/51 and from Structure #579/154 / #2110/67 through Structure #579/183 / #2110/96. Additionally, the Company proposes to replace the existing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength 285 ("ACSS/TW/HS285") type conductor with three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA for the same 7.7-mile segment. The rebuild of the 7.7-mile segment of Line #2110 will be within the Company's existing right-of-way, which varies in width between 130 and 265 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #2110 Partial Rebuild."

- Perform station-related work at the Company's existing Septa Switching Station and Yadkin Substation.

The purpose of my testimony is to describe the design characteristics of the transmission facilities for the proposed Rebuild Project, and also to discuss electric and magnetic field levels. I sponsor Sections I.L, II.A.5, II.B.1 to II.B.4, and IV of the Appendix. I also co-sponsor the Executive Summary with Company Witnesses Samuel L. Carter, Mohammad

M. Othman, and Nancy R. Reid; Sections I.A of the Appendix with Company Witnesses Samuel L. Carter and Nancy R. Reid; and Section I.F of the Appendix with Company Witness Samuel L. Carter; Section I.I of the Appendix with Company Witness Mohammad M. Othman; and Sections II.B.5 and V.A with Company Witness Nancy R. Reid.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS OF REED A. JENNINGS

Reed A. Jennings received a Bachelor of Science degree in Civil Engineering from Iowa State University in 2018. He currently possesses a Professional Engineering License in Virginia, North Carolina and Missouri. He has worked as a contractor for Dominion Energy Virginia for over six years (since January 2019) supporting the Overhead Electric Transmission Line Design team.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Mohammad M. Othman

Title: Consulting Engineer – Substation Engineering

Summary:

Company Witness Mohammad M. Othman sponsors or co-sponsors the following portions of the Appendix describing the work to be performed at an existing substation for the proposed Rebuild Project, as follows:

- Section I.I (co-sponsored with Company Witness Reed A. Jennings): This section provides the estimated total cost of the proposed project.

- Section II.C: This section describes and furnishes a one-line diagram of the substation(s) associated with the proposed project.

A statement of Mr. Othman's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
MOHAMMAD M. OTHMAN
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2025-00104

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Mohammad M. Othman. I am a Consulting Engineer in the Substation Engineering section of the Electric Transmission group with the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your area of responsibility on behalf of the Company.

A. I am responsible for the substation project requirements, feasibility studies, conceptual physical design, scope development, preliminary engineering, and cost estimating for high voltage transmission and distribution substations.

Q. What is the purpose of your testimony in this proceeding?

A. In order to maintain structural integrity and reliability of its transmission system in compliance with the Company's mandatory electric transmission planning criteria ("Planning Criteria"), Dominion Energy Virginia proposes the following rebuild project located within existing right-of-way or within the Company's existing property rights in the Cities of Chesapeake and Suffolk and in Isle of Wight County, Virginia:

- Rebuild the Company's existing approximately 33.1-mile overhead 500 kilovolt ("kV") Septa-Yadkin Line #579 to address the condition of Line #579, which is approaching its end of service life. Beginning at the existing Septa Switching Station, approximately 24.6 miles of Line #579 currently is supported by single

circuit 500 kV COR-TEN® lattice structures, which will be replaced primarily with single circuit 500 kV dulled galvanized steel lattice structures (the "Line #579 Single Circuit Segment" or the "Single Circuit Segment"). The remaining approximately 8.5 miles of Line #579 to the existing Yadkin Substation currently is supported primarily by double circuit 500 kV / 230 kV ("5/2") COR-TEN® lattice structures shared with the overhead single circuit 230 kV Suffolk-Thrasher Line #2110, which will be replaced primarily with double circuit 5/2 dulled galvanized steel H-frame structures (the "Line #579/#2110 Double Circuit Segment" or the "Double Circuit Segment"). Additionally, the Company proposes to replace the existing three-phase twin-bundled 2500 Aluminum Conductor Alloy Reinforced ("ACAR") conductor with three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductor with a summer transfer capability of 4,357 MVA for the entire 33.1 miles. The entirety of the approximately 33.1-mile Line #579 will be rebuilt within the Company's existing right-of-way, which varies in width between 130 and 350 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #579 Rebuild."

- Within the 8.5-mile Double Circuit Segment, rebuild approximately 7.7 miles of overhead single circuit 230 kV Suffolk-Thrasher Line #2110 from Structure #579/132 / #2110/36 through Structure #579/147 / #2110/51 and from Structure #579/154 / #2110/67 through Structure #579/183 / #2110/96. Additionally, the Company proposes to replace the existing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength 285 ("ACSS/TW/HS285") type conductor with three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA for the same 7.7-mile segment. The rebuild of the 7.7-mile segment of Line #2110 will be within the Company's existing right-of-way, which varies in width between 130 and 265 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #2110 Partial Rebuild."

- Perform station-related work at the Company's existing Septa Switching Station and Yadkin Substation.

The purpose of my testimony is to describe the work to be performed at the Septa Switching Station and the Yadkin Substation. I sponsor Section II.C of the Appendix and co-sponsor the Executive Summary with Company Witnesses Samuel L. Carter, Reed A. Jennings, and Nancy R. Reid, and Section I.I of the Appendix with Company Witness Reed A. Jennings, specifically, as those sections pertain to substation work.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
MOHAMMAD M. OTHMAN

Mohammad M. Othman received a Bachelor of Science degree in Electrical Engineering from Virginia Commonwealth University in 2008. Mr. Othman's responsibilities include the evaluation of the substation project requirements, development of scope documents and schedules, preparation of estimates and proposals, preparation of specifications and bid documents, material procurement, design substation physical layout, development of detailed physical drawings, bill of materials, electrical schematics and wiring diagrams. Mr. Othman joined the Dominion Energy Virginia Substation Engineering department in 2010 as an Engineer II and was later promoted to a Consulting Engineer, the title he currently holds.

Mr. Othman has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Nancy R. Reid

Title: Senior Siting and Permitting Specialist

Summary:

Company Witness Nancy R. Reid sponsors those portions of the Appendix providing an overview of the design of the route for the proposed Rebuild Project, and related permitting, as follows:

- Section II.A.1: This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2: This section provides a map showing the route of the proposed project in relation to notable points close to the proposed project.
- Section II.A.4: This section explains why the existing right-of-way is not adequate to serve the need, to the extent applicable.
- Sections II.A.6 to II.A.8: These sections provide detail regarding the right-of-way for the proposed project.
- Section II.A.9: This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11: This section details how the construction of the proposed project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Section II.A.12: This section identifies the counties and localities through which the proposed project will pass and provides General Highway Maps for these localities.
- Section II.B.6: This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III: This section details the impact of the proposed project on scenic, environmental, and historic features.
- Sections V.B-D: These sections provide information related to public notice of the proposed project.

Additionally, Ms. Reid co-sponsors the following portions of the Appendix:

- Section II.A.3 (co-sponsored with Company Witness Samuel L. Carter): This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed project.
- Section II.B.5 (co-sponsored with Company Witness Reed A. Jennings): This section provides the mapping and structure heights for the existing overhead structures.
- Section V.A (co-sponsored with Company Witness Reed A. Jennings): This section provides information related to public notice of the proposed project.

Finally, Ms. Reid sponsors the DEQ Supplement filed with the Application.

A statement of Ms. Reid's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
NANCY R. REID
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2025-00104

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Nancy R. Reid, and I serve as a Senior Siting and Permitting Specialist in the Siting and Permitting Group for the Company. My business address is 5000 Dominion Boulevard, 3rd Floor, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for identifying appropriate routes for transmission lines and obtaining necessary federal, state, and local approvals and environmental permits for those facilities. In this position, I work closely with government officials, permitting agencies, property owners, and other interested parties, as well as with other Company personnel, to develop facilities needed by the public so as to reasonably minimize environmental and other impacts on the public in a reliable, cost-effective manner.

Q. What is the purpose of your testimony in this proceeding?

A. In order to maintain structural integrity and reliability of its transmission system in compliance with the Company's mandatory electric transmission planning criteria ("Planning Criteria"), Dominion Energy Virginia proposes the following rebuild project located within existing right-of-way or within the Company's existing property rights in

the Cities of Chesapeake and Suffolk and in Isle of Wight County, Virginia:

- Rebuild the Company's existing approximately 33.1-mile overhead 500 kilovolt ("kV") Septa-Yadkin Line #579 to address the condition of Line #579, which is approaching its end of service life. Beginning at the existing Septa Switching Station, approximately 24.6 miles of Line #579 currently is supported by single circuit 500 kV COR-TEN® lattice structures, which will be replaced primarily with single circuit 500 kV dulled galvanized steel lattice structures (the "Line #579 Single Circuit Segment" or the "Single Circuit Segment"). The remaining approximately 8.5 miles of Line #579 to the existing Yadkin Substation currently is supported primarily by double circuit 500 kV / 230 kV ("5/2") COR-TEN® lattice structures shared with the overhead single circuit 230 kV Suffolk-Thrasher Line #2110, which will be replaced primarily with double circuit 5/2 dulled galvanized steel H-frame structures (the "Line #579/#2110 Double Circuit Segment" or the "Double Circuit Segment"). Additionally, the Company proposes to replace the existing three-phase twin-bundled 2500 Aluminum Conductor Alloy Reinforced ("ACAR") conductor with three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductor with a summer transfer capability of 4,357 MVA for the entire 33.1 miles. The entirety of the approximately 33.1-mile Line #579 will be rebuilt within the Company's existing right-of-way, which varies in width between 130 and 350 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #579 Rebuild."

- Within the 8.5-mile Double Circuit Segment, rebuild approximately 7.7 miles of overhead single circuit 230 kV Suffolk-Thrasher Line #2110 from Structure #579/132 / #2110/36 through Structure #579/147 / #2110/51 and from Structure #579/154 / #2110/67 through Structure #579/183 / #2110/96. Additionally, the Company proposes to replace the existing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength 285 ("ACSS/TW/HS285") type conductor with three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA for the same 7.7-mile segment. The rebuild of the 7.7-mile segment of Line #2110 will be within the Company's existing right-of-way, which varies in width between 130 and 265 feet, or within the Company's existing property rights. Collectively, this work is referred to as the "Line #2110 Partial Rebuild."

- Perform station-related work at the Company's existing Septa Switching Station and Yadkin Substation.

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Rebuild Project. As it pertains to routing and permitting, I sponsor Sections II.A.1, II.A.2, II.A.4, II.A.6, II.A.7, II.A.8, II.A.9, II.A.11, II.A.12, II.B.6, III, and V.B-D of the Appendix. I also sponsor the DEQ Supplement filed with the Application, and co-

sponsor the Executive Summary with Company Witnesses Samuel L. Carter, Reed A. Jennings, and Mohammad M. Othman; Section II.A.3 with Company Witness Samuel L. Carter; and Sections II.B.5 and V.A of the Appendix with Company Witness Reed A. Jennings.

Q. Has the Company complied with Va. Code § 15.2-2202 E?

A. Yes. In accordance with Va. Code § 15.2-2202 E, letters dated April 22, 2025, were delivered to Mr. Christopher M. Price, City Manager for the City of Chesapeake, Mr. Albert S. Moor II, City Manager for the City of Suffolk, and Mr. Donald T. Robertson, County Administrator for Isle of Wight County, where the Rebuild Project is located. These letters stated the Company's intention to file this Application and invited the Cities and County to consult with the Company about the Rebuild Project. Copies of the letters are included as Appendix Attachments V.D.1, V.D.2, and V.D.3, respectively.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
NANCY R. REID

Nancy R. Reid earned her Bachelor's degree from Christopher Newport University in environmental biology with a minor in chemistry and her Master's degree in Safety and Environmental Management from Columbia Southern University. Her past work experience includes working for the City of Franklin and Southampton County as the Environmental Specialist where she developed the areas stormwater management and permitting programs. Ms. Reid joined Dominion Energy in 2017 as an Environmental Compliance Coordinator where she assisted in developing the environmental program for the most efficient combined-cycle gas plant in the country and is now a Senior Sitting and Permitting Specialist for Electric Transmission.

Ms. Reid has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.