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

The Siting Study and the VDEQ Supplement included in Volume 2 of this Application address scenic, environmental, and historic features associated with the Project. Detailed GIS constraints mapping that illustrates the various resources and sensitive features relative to the Project is included as **Exhibit 2** in Volume 1. Furthermore, the Siting Study includes additional Project maps describing the route development process.

A. Describe the character of the area that will be traversed by this line, including land use, wetlands, etc. Provide the number of dwellings within 500 feet, 250 feet and 100 feet of the centerline, and within the ROW for each route considered. Provide the estimated amount of farmland and forestland within the ROW that the proposed project would impact.

Response:

The Project will rebuild approximately 4.4 miles of a section of the Big Island – Reusens 69-kV Transmission Line between the Company's Abert Substation in Amherst County and its Reusens Substation in the City of Lynchburg. The Project Study Area encompasses an approximately one-mile buffer of the transmission line section to be rebuilt. The Study Area is characterized predominantly by forested and open lands, in which single-family residential areas have emerged in Amherst and Bedford Counties and the City of Lynchburg.

The Proposed Route for the Project is within or near the existing 100-foot-wide ROW, which has been in-service since the 1960s, and includes three minor diversions from the existing centerline to minimize constructability impacts and avoid constraints. Approximately 3.9 miles of the approximately 4.4-mile-long Proposed Route will be rebuilt in the existing ROW of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations.

Between the Abert Substation and existing structure 432-20 (located north of Ruth Drive in Amherst County), the existing transmission line is generally parallel to a natural gas pipeline and is surrounded by forested and developed lands with residential areas; this section of the Proposed Route follows the existing centerline for about 0.4 miles and diverts south of and parallel to the existing centerline for about 0.8 miles to minimize impacts on a pipeline. Between existing structure 432-20 and the Reusens Substation, the Project area consists of forested, developed, and open lands with residential areas; this section of the Proposed Route is mostly within the existing ROW for about 3.2 miles, which includes the James River crossing, and diverts from the existing centerline twice (totaling about 0.7 miles) to minimize impacts on a historic property and a stream (Judith Creek).

Land use and land cover crossed by the Proposed Route is depicted in Attachment B, Map 6 of the Siting Study. The estimates provided of the farmland, cropland, and forest for the Proposed Route are based on the proposed centerline within a 100-foot-wide

ROW and consider 2024 Chesapeake Bay ("CB") Land Use/Land Cover data.[1] Approximately 26.2 acres of either prime and unique farmland or farmland of statewide importance are located within the 100-foot-wide ROW of the Proposed Route based on U.S. Department of Agriculture ("USDA") Natural Resources Conservation Service Soil Survey Geographic Database. There are approximately 2.2 acres of pasture/rangeland or cropland within the ROW of the Proposed Route, according to the 2024 CB Land Use/Land Cover data. Minimal tree clearing will be required as the transmission line is proposed to be rebuilt in or near the existing ROW.

Impacts on wetlands and streams are expected to be minimal and can be spanned. The Project crosses the James River, a Section 10 navigable waterway. A desktop wetland and stream delineation report was prepared to identify potential non-tidal wetlands and waterbodies crossed by the Project (see Attachment 2.D.1 of the VDEQ Supplement). All wetlands crossed by the ROW of the Proposed Route are palustrine emergent wetlands (about 1.6 acres) as the Project is in or near the existing maintained ROW. The Project crosses five National Hydrography Dataset-mapped waterbodies: the James River, two unnamed tributaries to the James River, Salt Creek, and Judith Creek.

Along the Project, single-family dwellings are located along secondary roads such as Monacan Park Road and Burgess Road in Amherst County, and local roads such as Fox Hill Road (Bedford County) and Old Trents Ferry Road (City of Lynchburg). There are 34 dwellings located within 500 feet, seven dwellings within 250 feet, and two dwellings within 100 feet of the Proposed Route centerline. There are no dwellings within the ROW of the Proposed Route.

B. Describe any public meetings the Applicant has had with neighborhood associations and/or officials of local, state or federal governments that would have an interest or responsibility with respect to the affected area or areas.

Response:

As described in the Siting Study, the Siting Team obtained information from or coordinated with various federal, state, and local agencies and/or officials to inform them of the Project and request input for the route development process. The Company met with local officials from Amherst and Bedford Counties and the City of Lynchburg on August 12, 2025, to introduce the Project and obtain information to aid in the route planning process. Input from these local officials supported rebuilding the Project in or near the existing ROW and confirmed that no active development plans were in place in the Project area. Letters and maps regarding the Project were sent to 42 federal and state agencies and/or officials on July 30, 2025, and 11 responses were received from this coordination effort. A full list of agencies receiving a letter and map and the responses received are included in Attachment D of the Siting Study in Volume 2 of the Application. The Company will continue coordination with all applicable federal, state,

[1] Developed through a collaboration between the Chesapeake Conservancy, the U.S. Geological Survey ("USGS"), University of Vermont Spatial Analysis Lab, USEPA, and the Chesapeake Bay Program.

and local agencies and organizations during the Project's environmental studies.

The Project was publicly announced with a news release and launch of a Project-specific website in July 2025. On July 24 and 28, 2025, mailings, including a postcard, letter, fact sheet, and comment card with a prepaid postage return envelope, were sent to 125 landowner addresses to announce the Project, request feedback from the public, and invite landowners to attend an in-person open house. The Company hosted one in-person open house to gather feedback on August 12, 2025, at the Lynchburg Regional Business Alliance in the City of Lynchburg. A total of 22 people attended the in-person open house, and 18 comments were returned to the Company via comment cards, emails, or phone calls. All comments were reviewed by the Siting Team and entered into the Project database. The comments generally related to how the rebuilt transmission line would differ from the existing line and the timing of construction. The public involvement process is described in Section 4.0 of the Siting Study located in Volume 2 of the Application.

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:

Two non-residential outbuildings appear to have encroached on the existing ROW near existing structures 432-18 and 432-15. The Company will coordinate with these landowners during ROW negotiations and once final engineering is complete. These building locations are identified in **Maps 3** and **4** of **Exhibit 2** located in Volume 1 of the Application.

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 existing transmission line ROW has been in-service since the 1960s. Approximately 89% of the total length of the Proposed Route (or 3.9 miles) will be rebuilt in the existing ROW.

In areas of new ROW, approximately 0.5 miles of the Proposed Route will be rebuilt near (or parallel to) the existing ROW on properties already crossed by the existing transmission line to minimize constructability impacts and avoid constraints. The existing 69-kV transmission line is parallel to an existing Columbia Gas pipeline near the Abert Substation. At this location, the Proposed Route diverts south of the existing 69-kV centerline for approximately 0.8 miles, mostly on new ROW, away from the pipeline to minimize constructability constraints. The Project does not parallel any other physical facilities such as roads, highway, or railroad corridors.

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 Company considers potential impacts on existing and future land uses when routing transmission line facilities. The Project is mostly located in Amherst County (about 3.1 miles), and crosses Bedford County (about 0.8 miles) and the City of Lynchburg (about 0.5 miles). The Siting Team considered the various comprehensive planning documents (e.g., land use plans) adopted in each of those localities. According to Amherst County's 2007–2027 Comprehensive Plan, the majority of the Project crosses agricultural and forestal land uses away from designated growth areas. According to Bedford County's 2035 Comprehensive Plan, approximately 0.8 miles of the Proposed Route crosses future residential uses where small-scale neighborhood and commercial uses are supported. While the City of Lynchburg is actively updating its Comprehensive Plan for 2040, the Siting Team reviewed the 2013–2030 Comprehensive Plan and noted approximately 0.5 miles of the Proposed Route crosses residential land uses away from designated growth areas. The Project will be rebuilt in or near the existing ROW, which has been in use for over 50 years.

The Siting Team also reviewed planned development and zoning cases from the local planning websites to determine any impact on proposed developments. No known active planned developments are crossed or in proximity to the Project.

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.

Response:

The Siting Team's review of available planning documents and input from local officials determined the ROW of the Proposed Route does not cross any designated important farmlands in Amherst and Bedford Counties or the City of Lynchburg, as determined by § 3.2-205 B of the Code. The Project is not expected to adversely impact farmland given that the Project will be rebuilt in or near the existing ROW, which has been in use since the 1960s.

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:

Not applicable.

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

Per the "Guidelines for Assessing Impacts of Proposed Electric Facilities on Historic Resources in the Commonwealth of Virginia" (2008) (the "Guidelines"), issued by the Virginia Department of Historic Resources ("VDHR"), the Company retained ERM to complete a Pre-Application Analysis for the Project (see Attachment 2.I.1 to the VDEQ Supplement in Volume 2 of this Application).

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;

Response:

No National Historic Landmark resources are located within 1.5 miles of the Proposed Route.

One National Register of Historic Places ("NRHP")-listed resource, the Bowling Eldridge House (VDHR# 009-5283), is crossed by the Project. Although visible from the public road ROW, the Project would not be visible from the historic dwelling itself. The Project is anticipated to have no more than a minimal impact on this resource.

The following three NRHP-listed resources are within 1.0-miles of the Project: Hope Dawn (VDHR#: 009-0043), Virginia Episcopal School (VDHR#: 118-0224), and Presbyterian Orphans Home (VDHR# 118-5240). The Project is not visible from these NRHP-listed resources and is anticipated to have no impact on these resources.

The NRHP-listed resources are further discussed in the Pre-Application Analysis in the VDEQ Supplement located in Volume 2.

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;

Response:

Two NRHP-eligible resources are located within 0.5 miles of the Project: Reusens Dam (VDHR# 118-0218) and CSX Railroad (VDHR# 118-5546). The Project is not visible to

these resources due to intervening distance and vegetation and is anticipated to have no impact on these resources.

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

Response:

None.

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;

Response:

None.

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

Response:

None.

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

Response:

None.

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

Response:

None.

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

Response:

None.

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);

Response:

No conservation or open space easements qualifying under §§ 10.1-1009 – 1016 or §§ 10.1-1700 – 1705, of the Code (or a comparable prior or subsequent provision of the Code) are crossed or near the Proposed Route based on input and available data.

10. Any state scenic river;

Response:

None. The Project crosses the James River within the existing ROW; however, this section of the river is not a state-designated scenic river (as discussed in Section 5.5 of the Siting Study located in Volume 2 of the Application).

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

Response:

None.

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:

None.

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:

ERM reviewed the Federal Aviation Administration's ("FAA") website to identify public-use airports, airports operated by a federal agency or the U.S. Department of Defense, airports or heliports with at least one FAA-approved instrument approach procedure, and public-use or military airports under construction within 10 nautical miles ("nm") of the Proposed Route. Four airports (two public-use and two private-use) are located within 10 nm of the Proposed Route.

The Project is not anticipated to impact the two private facilities located within 10 nm (L G Hospital Heliport and Timberdoodle Airport). Based on a review of the public-use

airports, Falwell Airport and Lynchburg Regional Airport are located 6.0 nm and 8.2 nm, respectively, from the Proposed Route; however, no portion of the Project overlaps these airport's imaginary civil or notification surfaces.

Based on preliminary engineering, the Company anticipates filing Form 7460 for 24 proposed structure locations and continuing coordination with the FAA and the Virginia Department of Aviation for the duration of the Project.

I. Advise of any scenic byways that are in 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:

No scenic byways as designated by the Federal Highway Administration or VDOT are crossed by the Proposed Route.

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

Response:

The Company coordinated with various federal, state, and local agencies and/or officials early in the route development process to inform them of the Project and receive feedback. A list of the agencies contacted, the letter and map provided, and associated responses for the Project are included as Attachment D to the Siting Study in Volume 2 of the Application.

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

Response:

Coordination with known non-governmental organizations and/or private citizen groups was made early and throughout the route development process to inform them of the Project and receive feedback. The Company solicited input from landowners and invited the general public to review the Project information and submit comments as part of the open house. The input received on the Project was used in the route planning process and is summarized in the Siting Study in Volume 2 of the Application.

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

Response:

The following is a list of environmental permits or special permissions that are anticipated to be needed for the Project:

- A general Virginia Pollutant Discharge Elimination System Permit for Discharges of Stormwater from Construction Activities from VDEQ.
- A Joint Permit Application will be submitted to the U.S. Army Corps of Engineers ("USACE") to cross the James River.
- Surveys and coordination with the United States Fish and Wildlife Service and the Virginia Department of Wildlife Resources will be conducted for potential occurrence of state- and federally-protected species.
- The USACE Section 10 Permit in compliance with Section 404 of the Clean Water Act will apply to the Project.
- If impacts on cultural resources occur, compliance with Section 106 of the National Historic Preservation Act of 1966 and coordination with VDHR will be required.
- A general Land Use Permit for work within designated ROW from VDOT, Amherst County, Bedford County, and/or the City of Lynchburg.
- License agreement for work within railroad ROW from CSX Railroad.
- Airspace obstruction evaluation with Form 7460-1 from the FAA.

SECTION IV. HEALTH ASPECTS OF EMF

A. State the calculated maximum electric and magnetic field ("EMF") levels that are expected to occur at the edge of the right-of-way. If the new transmission line is to be constructed on an existing electric transmission line right-of-way, provide the present EMF levels as well as the maximum levels calculated at the edge of right-of-way after the new line is operational.

Response:

EMF levels were computed at the ROW edges of the existing and proposed line configuration at the point of minimum ground clearance, where EMF is the highest. Lower EMF levels are expected beyond the ROW edges, as levels decline with distance.

Factors that affect EMF include the ROW width, operating voltage, current flow and direction, electrical imbalance, line configuration, conductor height above ground, and other nearby objects. Nominal voltages and balanced conditions are assumed, with maximum current levels and directions expected during normal system operation. No trees, shrubs, buildings, or other objects that can block EMF are assumed in proximity to the existing and proposed rebuilt line.

Normal maximum loading levels, representing peak load conditions, were assumed in the analysis to estimate EMF levels associated with the transmission line to be rebuilt conservatively. These loading levels are based on projected system conditions from the 2028 winter RTEP power flow case.

For the existing conditions, the maximum current used in the EMF modeling was 252.2 amperes ("A") under the base operating case and 495.1 A under the contingency operating case. For the proposed conditions, the maximum current used in the EMF modeling was 228.0 A under the base operating case and 488.7 A under the contingency operating case. These loading levels represent conservative peak system conditions intended to maximize calculated EMF. Actual daily and hourly operating currents will fluctuate and are expected to be lower than these maximum values for most operating periods.

All calculations were obtained at the height of 3.28 feet (i.e., one meter) above ground using the Bonneville Power Administration's Corona and Field Effects ("CAFE") program.[1] Based on the foregoing, the maximum EMF levels expected to occur at the ROW edge of the proposed rebuilt line are approximately 0.067 kilovolts per meter ("kV/m") for the electric field and 6.65 milligauss ("mG") for the magnetic field. The existing EMF levels expected to occur at the ROW edge are approximately 0.058 kV/m and 7.36 mG.

Section IV.A Reference:

[1] Bonneville Power Administration (BPA). 1993. "CAFE – Corona and Field Effects Program for Transmission Lines". BPA Transmission Engineering Division, Portland, Oregon.

B. If Company 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:

EMF occurs naturally in the environment. An electric field is present between the earth and its atmosphere and can discharge as lightning during thunderstorms. The earth also has a magnetic field, which provides an operating basis for the magnetic compass. EMF exists wherever there is a flow of electricity, including electrical appliances and power equipment.

Electric fields are produced by voltage or electric charge. A lamp cord that is plugged in produces an electric field even if the lamp is turned off. These fields commonly are measured in kV/m; the higher the voltage, the greater the electric field. Magnetic fields are created by the flow of current in a wire. As current increases, the magnetic field strength also increases; these fields are measured in units known as gauss or mG.

EMF associated with power lines and household appliances oscillate at the power frequency (60 Hz in the U.S.). When people are exposed to these fields, small electric currents are produced in their bodies. These currents are weaker than natural electric currents in the heart and nervous system.

Possible health effects from exposure to EMF have been studied for several decades. Initial research, focused on electric fields, found no evidence of biological changes that could lead to adverse health effects. Subsequently, a large number of epidemiologic studies examined the possible role of magnetic fields in the development of cancer and other diseases in adults and children. While some studies have suggested an association between magnetic fields and certain types of cancer, researchers have been unable to consistently replicate those results in other studies. Similarly, inconclusive or inconsistent results have been reported in laboratory studies of animals exposed to magnetic fields that are representative of common human exposures. A summary of such exposures, found in residential settings, is provided in **Table IV-1**.

Appliance Type	Number of Devices	Magnetic Field (mG)		
		1.2" (0.1 feet)	12" (1.0 feet)	User Distance
AC Adapters	3	1.4 – 863	0 - 7.5	0 - 0.8
Blood Pressure Monitors	4	4.2 - 39.6	0 - 0.3	0 – 0.2
Bluetooth Headsets	3	0	0	0
Coffee Grinders	3	60.9 – 779	0.3 – 6.5	0.8 - 40.9
Compact Fluorescent Bulbs	15	0 – 32.8	0 - 0.1	0 - 0.6
Compact Fluorescent Bulb Ballast	1	8.5 – 23.5[1]	0 – 0.1[1]	0 - 0.1[1]
Computers, Desktop	3	3.8 – 68.9	0 -1.1	0.1 – 0.5
Computers, Laptop	4	0 – 5.1	0	0 – 0.1
Digital Cameras	3	0	0	0
Digital Photo Frames	5	0	0	0
Digital Video Recorders	4	0 – 29.6	0 – 0.2	0
Dimmer Switches	4	11.5 – 32.1	0 – 0.8	0 – 0.8
DVD Players	5	0 – 28.9	0 – 0.5	0
Electric Lawn Mower	1	1939	156	14.1
Electric Leaf Blowers	4	272 – 4642	17.1 – 155	28.3 – 61.5
Electric Toothbrushes	5	3.6 - 742	0 – 4.8	3.6 – 742
Electric Toothbrush Chargers	5	0 – 4.2	0	0
External Hard Drives	4	0.6 – 1.7	0	0
Gaming Consoles	10	0 – 215	0 – 0.5	0 – 0.6
GPS, Handheld	5	0 – 0.1	0	0
Hobby Tools	2	126 – 438	1.4 – 2.4	1.4 - 438
Hot Glue Guns	3	0 – 0.9	0	0
LCD Computer Monitors	4	0 – 4.5	0	0
LCD Televisions	4	1.1 – 3.9	0 – 2.5	0 – 0.6
Massagers/Massage Chairs	3	81.9 – 500	0.6 – 2.3	214 - 500
MP3 Players	5	0	0	0
Noise Cancellation Headphones	1	0	0	0
Paper Shredders	4	11.0 – 4841	0.5 – 102	0.5 – 33.4
Plasma Televisions	2	45.1 – 73.6	1.4 – 2.2	0 – 0.1
Power Tools – Corded	3	784 – 982	8.8 – 31.3	46.8 - 123
Power Tools – Cordless	6	9.0 – 227	0 – 2.2	0 – 13.7
Printers	5	0.1 – 6.2	0 – 0.3	0 – 0.3
Scanners	3	0.6 – 6.7	0 – 0.3	0
Security System Panels	3	0 – 0.3	0	0
Tankless Hot Water Heater	1	10.1 – 21.9[2]	1.2	0.2
Track Lighting	5	0.2 – 4.0	0 – 0.3	0
Vacuum Cleaners, Personal/Car	3	75.5 – 2226	0.6 – 23.3	0.1 – 23.1
Wireless Game Controllers	11	0	0	0
Wireless Routers	4	0 – 0.5	0	0-0.3

Table IV-1
Magnetic Fields from Household Electrical Appliances and Devices

Source: Electric Power Research Institute (EPRI) [1]

As part of the Energy Policy Act of 1992, the U.S. Congress enacted the Electric and Magnetic Fields Research and Public Information Dissemination program. The National Institute of Environmental Health Sciences ("NIEHS") was charged with overseeing the health research and conducting an EMF risk evaluation. In its final report to Congress,

issued in 1999, NIEHS concluded that power-frequency "EMF exposure cannot be recognized at this time as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard." Nonetheless, the report stated that "this finding is insufficient to warrant aggressive regulatory concern."[2]

In 2001, the Standing Committee on Epidemiology of International Commission on Non-Ionizing Radiation Protection ("ICNIRP") wrote in its review of the epidemiologic literature on EMF and health that "given the methodological uncertainties and in many cases inconsistencies of the existing epidemiologic literature, there is no chronic disease outcome for which an etiological [causal] relation to EMF exposure can be regarded as established."[3]

First published in 2001, International Agency for Research on Cancer ("IARC") published the results of an EMF health risk evaluation conducted by an expert scientific working group, which concluded that power-frequency "magnetic fields are 'possibly carcinogenic to humans,' based on consistent statistical associations of high level residential magnetic fields with a doubling of risk of childhood leukemia."[4] More recently, a hazard assessment was performed by IARC "using available scientific evidence published before March 2015 with inclusion of new research findings from the Advanced Research on Interaction Mechanisms of electric and magnetic exposures with Organisms for Risk Assessment (ARIMMORA) project."[4] IARC assigns its "possibly carcinogenic to humans" classification (Group 2B) if there is "limited evidence" of carcinogenicity in both humans and experimental animals, or if there is "sufficient evidence" in animals, but "inadequate evidence" in humans. Group 2B includes some 322 "agents" such as coffee, pickled vegetables, carpentry, textile manufacturing, and gasoline, among others (last update: April 2, 2025).

A comprehensive assessment of the EMF health risks was published by the World Health Organization ("WHO") in 2007. In its assessment, WHO wrote: "Scientific evidence suggesting that every day, chronic, low-intensity (above 0.3-0.4 mT) [3-4 mG] power-frequency magnetic field exposure poses a possible health risk is based on epidemiological studies demonstrating a consistent pattern of increased risk for childhood leukemia."[5] It added, however, that "virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between low-level extremely low frequency ('ELF') magnetic fields and changes in biological function or disease status. Thus, on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern."

Regarding acute effects, the WHO noted, "Acute biological effects have been established for exposure to ELF electric and magnetic fields in the frequency range up to 100 kilohertz ('kHz') that may have adverse consequences on health. Therefore, exposure limits are needed. International guidelines exist that have addressed this issue. Compliance with these guidelines provides adequate protection for acute effects."[5]

In summary, some studies have reported an association between long-term magnetic field exposure and particular types of health effects, while other studies have not. The nature

of the reported association remains uncertain as no known mechanism or laboratory animal data exists to support the cause-and-effect relationship.

In view of the scientific evidence, the Institute of Electrical and Electronics Engineers ("IEEE") and other organizations have established guidelines limiting EMF exposure for workers in a controlled environment and for the general public. These guidelines focus on prevention of acute neural stimulation. No limits have been established to address potential long-term EMF effects, as the guideline organizations consider the scientific evidence insufficient to form the basis for such action. For power-frequency EMF, IEEE Standard C95.1TM-2019[6] recommends the following limits:

	General Public	Controlled Environment
Electric Field Limit (kV/m)	5.0	20.0*
Magnetic Field Limit (mG)	9,040	27,100

*10.0 kV/m within power line ROW

To address public concerns about EMF, the Government of Canada in 2012 and 2022 updated its website with the latest knowledge on the subject. It contains the following statements on the EMF health-related risks: "The potential health effects of extremely low frequency EMF has been studied extensively. While some people are concerned that long term exposure to extremely low frequency EMF may cause cancer, the scientific evidence does not support such claims."[7]

Similarly, in 2016, the updated website of the WHO concluded: "To date there is no evidence to conclude that exposure to low-level electromagnetic fields is harmful to human health."[8]

Most recently, in its May 2024 report, the Scientific Committee on Health, Environmental, and Emerging Risks ("SCHEER"), an independent advisory body to the European Commission on Public Health, issued the following opinion: "The SCHEER could not identify recent (post 2015) systematic reviews or meta-analyses on low frequency EMF exposure and self-reported symptoms to update the previous SCENIHR assessment in the current opinion. It is noted that in the SCENIHR Opinion (2015) it was concluded there was no convincing evidence for a causal relationship between ELF-EMF exposure and self-reported symptoms."[9]

AEP has been following the EMF scientific developments worldwide, participating in and sponsoring EMF studies, and communicating with customers and employees on the subject. Also, AEP is a member of EPRI, an independent, non-profit organization sponsoring and coordinating EMF epidemiology, laboratory, and exposure studies.

The transmission line to be rebuilt as proposed for this Project will be compliant with the EMF limits specified in IEEE Standard C95.1TM-2019.

C. Describe any research studies the Company 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 previously been reported and/or provide substantial additional insight into previous findings; and

3. Have been subjected to peer review.

Response:

In its report to the Virginia General Assembly, issued on October 31, 2000, the Virginia Department of Health stated: "The Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency electro and magnetic fields emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans."[10]

Key publications on the subject which became available after that report are included below as references to the discussion contained in **Sections IV.B** and **C** of this Response to Guidelines.

Sections IV.B and C References:

[1] "Magnetic Fields from Electrical Appliances and Devices," EPRI, Product ID 1021221, September 28, 2010.

[2] "NIEHS Report on Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields," National Institute of Environmental Health Sciences, National Institutes of Health, NIH Publication No. 99-4493, May 4, 1999. (https://www.niehs.nih.gov/sites/default/files/health/assets/docs_p_z/report_powerline_electric_mg_predates_508.pdf).

[3] "Review of the Epidemiologic Literature on EMF and Health," International Commission for Non-Ionizing Radiation Protection (ICNIRP) Standing Committee on Epidemiology, Environmental Health Perspectives, Volume 109, Supplement 6, December 2001. (https://www.icnirp.org/cms/upload/publications/ICNIRPepireview2001.pdf).

[4] "Extremely low-frequency magnetic fields and risk of childhood leukemia: A risk assessment by the ARIMMORA consortium." International Agency for Research on Cancer, Wiley Periodicals, Inc.2016. (https://www.iarc.who.int/reference/extremely-low-frequency-magnetic-fields-and-risk-of-childhood-leukemia-a-risk-assessment-by-the-arimmora-consortium/).

[5] "Extremely Low Frequency Fields (Environmental Health Criteria 238)," World Health Organization, June 1, 2007. (https://www.icnirp.org/cms/upload/publications/EHC238ELF.pdf).

[6] "C95.1TM IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0Hz to 300 GHz," IEEE Standards Coordinating Committee 39, October 4, 2019.

[7] "Power lines and electrical products: Extremely low frequency electric and magnetic fields." Healthy Canadians, November 1, 2022. (http://www.healthycanadians.gc.ca/environment-environnement/home-maison/emf-cem-eng.php).

[8] "What are Electromagnetic Fields? Summary of Health Effects," World Health Organization, 2016. (http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html).

[9] "Potential Health Effects of Exposure to Electromagnetic Fields (EMF): Update with Regard to Frequencies Between 1 Hz and 100 kHz", Scientific Committee on Health, Environmental and Emerging Risks, SCHEER, May 17, 2024. (https://health.ec.europa.eu/system/files/2023-11/scheer_o_063.pdf).

[10] "Monitoring of Ongoing Research on the Health Effects of High Voltage Transmission Lines (Final Report)," Virginia Department of Health, October 31, 2000. (http://www.vdh.state.va.us/Epidemiology/DEE/publichealthtoxicology/documents/pdf/highfinal.PDF).

SECTION 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 proposes to be noticed, provide minimum, maximum and average structure heights.

Response:

A description of the Proposed Route is provided as follows, and the requested public notice map is included as **Exhibit 12**.

The Proposed Route begins at the Company's existing Abert Substation (245 Nikonha Lane) in Amherst County, north of the James River. The Proposed Route exits the substation and continues east within or parallel to the existing ROW for about 1.0 miles, crossing Salt Creek Road. The Proposed Route continues south for about 2.1 miles within the existing ROW through southeastern Amherst County, crossing Ruth Drive, Monacan Park Road, and Burgess Road. The Proposed Route then crosses the James River within the existing ROW. The route traverses northeastern Bedford County for about 0.8 miles, which includes a slight diversion of the existing centerline to the east at Fox Hill Road. The Proposed Route crosses Judith Creek within or near the existing ROW and then traverses the northeastern extents of the City of Lynchburg for about 0.5 miles within the existing ROW to the Company's existing Reusens Substation (200 Old Trents Ferry Road), west of the James River.

The proposed structure types are steel single-circuit H-frame, three-pole, and monopole structures. The average heights of the proposed structures range between 65 and 86 feet, with an average structure height of 72 feet.

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:

This Application and all exhibits, tables, and maps made a part hereof will be available for inspection at the following locations:

Madison Heights Public Library
200 River James Shopping Center
Madison Heights, Virginia 24572

Forest Library
15583 Forest Road
Forest, Virginia 24551

Lynchburg Library
216 12th Street
Lynchburg, Virginia 24504

This Application, exhibits, and maps are also digitally available on the Project website: www.AppalachianPower.com/AbertReusens.

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:

Federal
U.S. Army Corps of Engineers, Norfolk District
U.S. Environmental Protection Agency, Region 3
U.S. Fish and Wildlife Service, Virginia Field Office
U.S. Department of Transportation Federal Aviation Administration, Flight Standards District Office
U.S. House of Representatives, 5th District (John McGuire)**

State
Virginia Department of Environmental Quality**
Virginia Department of Agriculture and Consumer Services
Virginia Department of Aviation
Virginia Department of Conservation and Recreation, Division of Natural Heritage
Virginia Department of Conservation and Recreation, Karst Protection Program
Virginia Department of Conservation and Recreation, Planning and Recreation
Virginia Department of Historic Resources, Division of Review and Compliance
Virginia Department of Forestry
Virginia Department of Wildlife Resources, Environmental Services Section
Virginia Department of Health
Virginia Department of Mines, Minerals, and Energy
Virginia Department of Transportation (Central Office - Richmond)
Virginia Department of Transportation (Local District Office – Lynchburg District)
Virginia Department of Transportation (Local District Office – Salem District)
Virginia Department of Health, Lexington Field Office
Virginia Marine Resources Commission
Virginia Outdoors Foundation
Senate of Virginia, 8th District (Mark J. Peake)**
Senate of Virginia, 11th District (R. Creigh Deeds)**
Virginia House of Delegates, 53rd District (Timothy P. Griffin)**
Virginia House of Delegates, 52nd District (Wendell S. Walker)**
Central Virginia Planning District Commission (Alex Brebner)

Local
Amherst County, Administrator (Jeremy Bryant)*
Amherst County, Attorney (W. Lyle Carver)
Amherst County, Planning and Zoning (Tyler Creasey)
Amherst County, Board of Supervisors (Chris Adams, District 3 Supervisor)
Bedford County, Administrator (Robert Hiss)*

Bedford County, Attorney (Patrick Skelley)
Bedford County, Planning and Zoning (Jordan Mitchell)
Bedford County, Board of Supervisors (Tommy Scott, District 5 Supervisor)
City of Lynchburg, City Manager (Wynter Benda)*
City of Lynchburg, Attorney (Bethany A.S. Harrison)
City of Lynchburg, Community Development Planner (Tom Martin)
City of Lynchburg, City Council (Jacqueline Timmer, Ward I Councilmember)

* The Company will distribute a hard copy of the Application and related materials to these officials.
** The Company will provide access to an electronic copy of the Application and related materials to these officials or agencies.

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:

As detailed in **Section III.B**, representatives of Appalachian met with local officials from Amherst and Bedford Counties and the City of Lynchburg on August 12, 2025, to introduce the Project and obtain information to aid the route planning process. During these meetings, officials were advised that the Company plans to file an application with the SCC for approval of the Project**.**