APPALACHIAN POWER COMPANY
BEFORE THE
VIRGINIA STATE CORPORATION COMMISSION
CASE NO. PUR-2026-00047

APPLICATION FOR APPROVAL AND CERTIFICATION OF ELECTRICAL TRANSMISSION LINE

Abert – Reusens Transmission Improvements Project

VOLUME 1 OF 3

Application, Testimony, Response to Guidelines, and Exhibits

May 2026

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CONFIDENTIAL EXHIBITS

Exhibit 9-C: Abert Substation One Line Diagram

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A	ampere
ACS	American Community Survey
ACSR	aluminum conductor steel-reinforced
AEP	American Electric Power Company, Inc.
AEPSC	American Electric Power Service Corporation
APCo	Appalachian Power Company (a unit of AEP)
Appalachian	Appalachian Power Company (a unit of AEP)
BMP	best management practice
BPA	Bonneville Power Administration
C1	Outstanding
C2	Very High
C3	High
C4	Moderate
C5	General
CAFE	Corona and Field Effects [program]
CB	Chesapeake Bay
CBG	Census Block Group
CCB	Center for Conservation Biology
CCVT	coupling capacitor voltage transformer
CIMC	Cleanups in My Community [database]
Company	Appalachian Power Company (a unit of AEP)
CPCN	Certificate of Public Convenience and Necessity
CS	Conservation Site
CWA	Clean Water Act
DCR	[Virginia] Department of Conservation and Recreation
DKey	Determination Key
DNH	[Virginia] Division of Natural Heritage
DOAV	[Virginia] Department of Aviation
EDM	Environmental Data Mapper
EJ	Environmental Justice
ELF	extremely low frequency
EMF	electric and magnetic field
EMF RAPID	Electric and Magnetic Fields Research and Public Information Dissemination [program]
EPA	U.S. Environmental Protection Agency
ERM	Environmental Resources Management
ESRI	Environmental Systems Research Institute
FAA	Federal Aviation Administration
FCV	Forest Conservation Value
FE	Federally listed as endangered
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission

FHWA	Federal Highway Administration
FPE	Federally proposed as endangered
FPT	Federally proposed as threatened
FT	Federally listed as threatened
FUDS	Formerly Used Defense Sites
G	gauss
GIS	Geographic Information System
HUC	Hydrologic Unit Code
Hz	Hertz
IARC	International Agency for Research on Cancer
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
IPaC	Information for Planning and Consultation
JPA	Joint Permit Application
KOP	key observation point
kV	kilovolt
kV/m	Kilovolts per meter
LULC	Land Use / Land Cover [database]
mG	milligauss
MOAB	motor-operated air break
MVA	megavolt ampere
MW	megawatts
NA	not applicable
NAIP	National Agriculture Imagery Program
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NHD	National Hydrography Dataset
NHDE	Natural Heritage Data Explorer
NHL	National Historic Landmark
NHP	National Heritage Program
NHPA	National Historic Preservation Act
NHR	National Heritage Resources
NIEHS	National Institute of Environmental Health Sciences
NLEB	Northern long-eared bat
nm	nautical mile
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NUG	non-utility generator
NWI	National Wetlands Inventory

OPGW	optical ground wire
PEM	Palustrine Emergent
PFO	Palustrine Forested
PJM	PJM Interconnection LLC
PREP	Pollution Response Program
PSS	Palustrine Scrub-Shrub
PUB	Palustrine Unconsolidated Bottom
QF	qualifying facility
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
RTEP	Regional Transmission Expansion Plan
RTO	regional transmission organization
SCC	[Virginia] State Corporation Commission
SCENIHR	Scientific Committee on Emerging and Newly Identified Health Risks
SCS	Stream Conservation Site
SE	State-listed as endangered
SN/SE/WN/WE	Summer Normal / Summer Emergency / Winter Normal / Winter Emergency
SQG	small quantity generator
SSURGO	Soil Survey Geographic Database
ST	State-listed as threatened
T&E	threatened and endangered
TCB	tricolored bat
TOYRs	time-of-year restrictions
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VaFWIS	Virginia Fish and Wildlife Information Service
VBMP	Virginia Base Mapping Program
VCRIS	Virginia Cultural Resources Information System
VDACS	Virginia Department of Agriculture and Consumer Services
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDH	Virginia Department of Health
VDHR	Virginia Department of Historic Resources
VDOF	Virginia Department of Forestry
VDOT	Virginia Department of Transportation
VDWR	Virginia Department of Wildlife Resources
VEJA	Virginia Environmental Justice Act

VGIN	Virginia Geographic Information Network
VMRC	Virginia Marine Resources Commission
VOF	Virginia Outdoors Foundation
VPDES	Virginia Pollution Discharge Elimination System
VRP	Voluntary Remediation Program
VSQG	very small quantity generator
WERMS	Wildlife Environmental Review Map Service
WHO	World Health Organization

Appalachian Power Company ("Appalachian" or "Company"), a unit of American Electric Power Company, Inc. ("AEP"), seeks approval and certification of the Abert – Reusens Transmission Improvements Project ("Project"), which is located in Amherst and Bedford Counties and the City of Lynchburg, Virginia. The Project generally involves (a) rebuilding approximately 4.4 miles of Appalachian's Big Island – Reusens 69-kilovolt ("kV") Transmission Line, and (b) upgrading the Company's Abert Substation by replacing two 69-kV motor-operated air break switches and the 69-kV circuit switcher.

The Project will address thermal violations of AEP's transmission reliability criteria identified on the Big Island – Reusens 69-kV Transmission Line, between Appalachian's Abert and Reusens Substations, using the 2028 summer case developed by AEP's Regional Transmission Organization, PJM Interconnection LLC ("PJM"), in the 2023 Regional Transmission Expansion Plan. PJM has approved the Project and classified the transmission line rebuild component as a baseline project, and it is anticipated that PJM will classify the substation upgrade component as a supplemental project.

The proposed route of the Project is approximately 4.4 miles long between the Abert Substation in Amherst County and the Reusens Substation in the City of Lynchburg. The transmission line rebuild component of the Project will be completed in or near the existing 100-foot-wide right-of-way ("ROW"), with three minor diversions from the existing centerline to minimize constructability challenges or avoid constraints. To accommodate these diversions, Appalachian will need to acquire roughly 7.2 acres of new ROW. The Company intends to obtain new or supplemental easements for the new ROW. The substation upgrade component of the Project will be completed on Appalachian's property.

Based on preliminary engineering, Appalachian anticipates removing the existing single-circuit wood H-frame and three-pole structures for the transmission line rebuild component of the Project and replacing them with single-circuit steel H-frame, three-pole, and monopole structures. The average heights of the proposed structures range between 65 and 86 feet above ground. The proposed structures average approximately 20 feet taller than the existing structures due to the larger conductor and compliance with modern clearance standards.

The desired in-service date for the Project is June 1, 2029. Upon the Commission's approval of the Project, Appalachian estimates that it will need approximately two years for engineering, design, ROW acquisition, permitting, material procurement, and construction to place the Project in service. The estimated functional total cost of the Project is approximately $19.7 million, which includes approximately $3.9 million for substation-related work and $15.8 million for transmission-related work.

Appalachian retained Environmental Resources Management ("ERM") to evaluate the existing Big Island – Reusens 69-kV Transmission Line and to conduct a siting study for the section to be rebuilt between the Company's Abert and Reusens Substations. ERM used a traditional siting methodology that identified constraints and opportunities, evaluated the feasibility of rebuilding the transmission line mostly within the existing ROW, gathered and incorporated feedback from stakeholders and landowners, and conducted field interviews to select the proposed route for the rebuild. Appalachian supports ERM's selection of the proposed route because it maximizes the use of the existing ROW.

In addition to engaging ERM to develop the proposed route, Appalachian considered feedback from federal, state, and local agencies or officials and undertook public outreach efforts to promote meaningful engagement from each community affected by the Project. The Project is not anticipated to have a disproportionately high or adverse impact on environmental justice or fenceline communities. The Company is currently unaware of any opposition to the Project, but it will continue to engage with all affected landowners as the design is completed.

See **Exhibit 1** for a map of the Project area.

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF

APPALACHIAN POWER COMPANY **CASE NO. PUR-2026-00047**

for Approval and Certification of the Abert – Reusens Transmission Improvements Project under Title 56 of the Code of Virginia

Pursuant to Virginia Code § 56-46.1 and the Utility Facilities Act, Virginia Code § 56-265.1 *et seq.*, Appalachian Power Company ("Appalachian" or "Company"), by counsel, submits this Application for approval and certification of the Abert – Reusens Transmission Improvements Project ("Project"). In support of this Application, Appalachian represents as follows:

1. Appalachian is a public service corporation duly organized and existing under the laws of the Commonwealth of Virginia that provides electric service in Virginia with a mailing address of P.O. Box 2021, Roanoke, Virginia 24022.

2. Appalachian proposes to construct, own, operate, and maintain the Project, which generally involves (a) rebuilding approximately 4.4 miles of the Company's Big Island – Reusens 69-kilovolt ("kV") Transmission Line between its Abert and Reusens Substations, and (b) upgrading the Abert Substation by replacing two 69-kV motor-operated air break switches and the 69-kV circuit switcher on the capacitor bank. (All the various improvements and additions comprising the Project are more fully described in Section I of the Company's Response to Guidelines filed with this Application.) The Project is located in Amherst and Bedford Counties and the City of Lynchburg, Virginia.

3. Appalachian follows the transmission reliability criteria defined in American Electric Power Company's FERC Form 715 filing ("AEP Criteria"), which include the contingency categories defined in NERC Reliability Standard TPL-001-4. Using the 2028 summer case developed by its Regional Transmission Organization, PJM Interconnection L.L.C. ("PJM"), in the 2023 Regional Transmission Expansion Plan, the Company identified thermal violations of the AEP Criteria on the section of the Big Island – Reusens 69-kV Transmission Line, between the Abert and Reusens Substations, under certain N-1-1 contingencies in the Abert Load Area, which includes portions of Amherst and Bedford Counties and the City of Lynchburg.

4. The Project is necessary to address the violations of the AEP Criteria and to ensure reliable electric service and accommodate future growth in the Abert Load Area. PJM has approved the Project and classified the transmission line rebuild component as a baseline project, and it is anticipated that PJM will classify the substation upgrade component as a supplemental project.

5. The proposed route of the Project is approximately 4.4 miles long between the Abert Substation in Amherst County and the Reusens Substation in the City of Lynchburg. The transmission line rebuild component of the Project will be completed in or near the existing 100-foot-wide right-of-way ("ROW"), with three minor diversions from the existing centerline to minimize constructability challenges or avoid constraints. To accommodate these diversions, the Company will need to acquire roughly 7.2 acres of new ROW. No new properties are crossed within that area.

6. The substation upgrade component of the Project will be completed on the Company's property. Accordingly, the Company will not need to acquire additional property for that component.

7. In support of this Application, Appalachian is filing the testimony of the following witnesses:

(a) Jasmine L. Moore, P.E., with regard to the need for the Project;

(b) J. Scott Woody, P.E., with regard to the transmission line and substation engineering components of the Project;

(c) Amanda M. Hurst, with regard to ROW;

(d) Ebrahim Rezaei, with regard to health aspects of electric and magnetic fields; and

(e) Roya P. Smith, with regard to the route development and environmental analysis aspects of the Project.

8. Appalachian is also filing: (a) Response to Guidelines; (b) the Abert – Reusens Transmission Improvements Project Rebuild Siting Study ("Siting Study") and a Virginia Department of Environmental Quality ("VDEQ") Supplement prepared by the Company's siting and environmental consultant, Environmental Resources Management; and (c) related tables, exhibits, attachments, and maps (including a digital Geographic Information System ("GIS") constraints map and GIS shapefiles of the Project via electronic filing).

9. Appalachian's testimony, Response to Guidelines, Siting Study, VDEQ Supplement, and related tables, exhibits, attachments, and maps filed with this Application establish the following:

(a) The Project is needed and the public convenience and necessity require the construction of the Project by the Company;

(b) The proposed route for the Project reasonably minimizes adverse impact on the scenic assets, historic districts, and environment of the areas in which the Project will be located; and

(c) The Project will address the identified violations of the AEP Criteria and ensure reliable electric service as well as accommodate future growth within Amherst and Bedford Counties and the City of Lynchburg.

10. The proposed in-service date for the Project is June 1, 2029. If the Commission approves the Project, Appalachian estimates that it will need approximately two years after entry of the Commission's final order for engineering, design, ROW acquisition, permitting, material procurement, and construction to place the Project in service. Accordingly, the Company asks that the Commission expedite its consideration of this Application to the extent permitted under applicable law.

Appalachian therefore requests:

(a) That this Application be filed and docketed;

(b) That the Commission cause notice of this Application to be given as required by Virginia Code § 56-46.1 and the Utility Facilities Act;

(c) That the Commission Staff undertake an investigation of this Application and report its findings to the Commission;

(d) That the Commission determine, as required by Virginia Code §§ 56-46.1 and 265.2, (1) that the Project is needed and that the public convenience and necessity require the construction of the Project by the Company; and (2) that the proposed route

for the Project reasonably minimizes adverse impact on the scenic assets, historic districts, and environment of the area concerned;

(e) That the Commission approve the construction of the Project pursuant to Virginia Code § 56-46.1 and any other applicable law; and

(f) That the Commission grant the Company a certificate of public convenience and necessity under the Utility Facilities Act and grant such other relief as may be necessary for the construction and operation of the Project.

Respectfully submitted,

APPALACHIAN POWER COMPANY

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APCo Exhibit No. ____
Witness: JLM

DIRECT TESTIMONY OF
JASMINE L. MOORE, P.E.
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

APCo Exhibit No. ____
Witness: JLM

SUMMARY OF DIRECT TESTIMONY OF JASMINE L. MOORE, P.E.

My direct testimony supports Appalachian Power Company's ("Appalachian" or "Company") Application and Response to Guidelines for the Abert – Reusens Transmission Improvements Project ("Project"). I am sponsoring Section I (Necessity for the Project), including the associated figures and tables, and Exhibit 1. This Project consists of rebuilding approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations; and upgrades at the existing Abert Substation such as the replacement of two 69-kV motor-operated air break ("MOAB") switches and the 69-kV circuit switcher on the capacitor bank. The Project is needed to address thermal overload violations that will result under certain contingency scenarios as identified using the 2028 summer case developed by PJM in the 2023 RTEP. The Project also is needed to address the identified need to replace certain transmission assets due to their deteriorating condition.

The Project Alternative included a solution to reconductor the section of the Company's existing Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations instead of rebuilding it. While the Project Alternative could address the identified reliability criteria violations on the transmission system serving the Abert Load Area, it was determined to be infeasible because the Project's capacity requirements necessitate the installation of a conductor larger than the existing conductor size. In addition, reconductoring would not address the replacement of aging wooden structures from the 1960s in which open structural conditions are present along the line. About 41% of the total structures on the section of the line between the Abert and Reusens Substations have at least one open structural condition. The transmission line component of the Project is a PJM baseline project (PJM project number b3786.1). The upgrades at the Company's existing Abert Substation are supplemental work and were presented to PJM on November 14, 2025.

DIRECT TESTIMONY OF
JASMINE L. MOORE, P.E.
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Q: PLEASE STATE YOUR NAME, ADDRESS, AND PRESENT POSITION.

A: My name is Jasmine L. Moore. My business address is 8500 Smiths Mill Road, New Albany, Ohio 43054. I am employed by American Electric Power Service Corporation, a subsidiary of American Electric Power ("AEP"). My title is Transmission Planning Manager.

Q: PLEASE REVIEW YOUR EDUCATIONAL BACKGROUND AND YOUR WORK EXPERIENCE.

A: I received a Bachelor of Science in Electrical Engineering from Ohio Northern University in Ada, Ohio. In 2002, I joined AEP as a Protection and Controls Engineer in the Station Projects Engineering Group. I received my Professional Engineering license in the state of Ohio in 2006 (license number 71494). In 2007, I transitioned to the Planning group where I was initially a Planning Engineer, then in 2016, I became the Planning Customer Connections Supervisor. In 2017, I became the Transmission Planning Manager for the Ohio Region and transitioned to the Appalachian and Kentucky Region Transmission Planning Manager in 2018.

Q: WHAT ARE YOUR RESPONSIBILITIES AS TRANSMISSION PLANNING MANAGER?

A: My responsibilities include organizing and managing activities related to assessing the adequacy of AEP's transmission network to meet the needs of its customers in a reliable, safe, cost effective, and environmentally compatible manner. I participate in planning

activities with Appalachian to address overall system performance.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: The purpose of my testimony is to explain and support Appalachian's need for, and proposed solution to, identified reliability deficiencies in the Abert Load Area, which includes portions of Amherst and Bedford Counties and the City of Lynchburg, Virginia. My testimony describes the reliability violations found using PJM's 2028 summer RTEP case and AEP's assessments (including applicable AEP Criteria and NERC TPL-001-4 contingency categories), details the thermal overload on the Company's Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations under certain N-1-1 contingencies and the customer load areas affected, presents the proposed Abert – Reusens Transmission Improvements Project ("Project") as the preferred mitigation in showing how it restores compliance, summarizes alternatives considered and the rationale for the selected alternative, and provides scope, cost, and schedule to the Commission for approval to construct and place the Project in service.

Q: FOR WHAT SPECIFIC PROPOSED WORK IS THE COMPANY SEEKING COMMISSION APPROVAL AND CERTIFICATION?

A: The Company requests Commission approval and certification to rebuild approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations. This is the Abert – Reusens section of the Reusens – Skimmer 69-kV Circuit. The baseline improvements include rebuilding approximately 4.4 miles of the line section with a higher-capacity conductor and replacing structures from the 1960s. Supplemental work includes replacement of two 69-kV MOAB switches and the 69-kV circuit switcher on the capacitor bank at the

Company's Abert Substation.

Q: WHICH OF THE SPECIFIC MATERIALS INCLUDED IN THE RESPONSE TO GUIDELINES ARE YOU SPONSORING?

A: I am responsible for Section I of the Response to Guidelines (Necessity of the Project) and Exhibit 1.

Q: WERE THE PORTIONS OF APPALACHIAN'S FILING WHICH YOU ARE SPONSORING PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A: Yes.

Q: PLEASE SUMMARIZE THE NEED FOR THE PROJECT.

A: PJM's 2028 summer RTEP case (used by AEP's assessments) identified thermal overloads on a section of the Big Island – Reusens 69-kV Transmission Line under certain N-1-1 contingencies that radialize the Abert Load Area. The Abert Load Area (approximately 55 megawatts ["MW"] historical summer peak and approximately 67 MW historical winter peak) can lose two of three sources (the Reusens 138-kV, South Lynchburg 138-kV, and Skimmer 115-kV Substations), leaving flow concentrated on the undersized conductor and causing thermal violations of the AEP Criteria. Rebuilding the section of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations increases capacity and eliminates the identified reliability violations, thus restoring compliance under projected future conditions.

Q: PLEASE DESCRIBE THE RESULTS OF THE PJM IMPACT STUDY AND THE INDENTIFIED CRITICAL CONTIGENCIES.

A: Using the PJM 2028 summer RTEP case developed in the 2023 RTEP, AEP identified

thermal violations on the Abert – Reusens 69-kV Transmission Line between the Abert and Reusens Substations under two critical N-1-1 contingency scenarios. The explicitly described scenario is a loss of the Skimmer – South Lynchburg 69-kV Circuit combined with a loss of the 115/69-kV transformers at the Skimmer Substation, which forces the Abert and Skimmer loads to be served from the Reusens Substation via the Abert – Reusens 69-kV section and results in a thermal overload on that section (as presented to PJM).

Q: WAS A FEASIBLE PROJECT ALTERNATIVE IDENTIFIED BY PJM?

A: The Project Alternative included reconductoring approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the existing Abert and Reusens Substations instead of rebuilding it. The Project Alternative is infeasible because the Project requires the installation of a heavier conductor size, thus compromising the ability to meet clearance requirements due to conductor sag and structural issues. Reconductoring the existing line will not address the replacement of aging wooden structures from the 1960s in which open structural conditions are present along the line. There are 11 existing structures with at least one open structural condition, or about 41% of the total structures on the section of the Big Island – Reusens 69-kV Transmission Line at issue. The proposed rebuild was selected as the preferred baseline solution. This portion of the Project is a PJM baseline project (PJM project number b3786.1).

Q: DOES THE PROJECT IMPACT FUTURE PROJECTS IN THE AREA?

A: The rebuild portion of the Project is a PJM baseline solution that resolves the identified reliability violations; no new substations or switching stations are proposed. The rebuild is intended to meet projected needs and does not adversely affect future projects—it

supports continued compliance and reliability in the area.

Q: IS THERE ANY SUPPLEMENTAL WORK PROPOSED FOR THE PROJECT?

A: Yes. The upgrades at the Company's existing Abert Substation are supplemental work. The supplemental work was presented to PJM on November 14, 2025.

Q: WHAT IS THE IN-SERVICE DATE FOR THE PROJECT?

A: The Project is anticipated to be in service June 1, 2029. See Section II.B.10 of the Response to Guidelines for a more detailed description of the construction sequence.

Q: WHAT IS THE TOTAL ESTIMATED COST OF THE PROJECT?

A: The total functional estimated cost of the Project is approximately $19.7 million.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.

APCo Exhibit No. ____
Witness: JSW

DIRECT TESTIMONY OF
J. SCOTT WOODY, P.E.
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

APCo Exhibit No. ____
Witness: JSW

SUMMARY OF DIRECT TESTIMONY OF J. SCOTT WOODY, P.E.

My direct testimony supports the transmission line and substation engineering aspects of Appalachian Power Company's ("Appalachian" or "Company") Application and Response to Guidelines in connection with the Abert – Reusens Transmission Improvements Project ("Project"). Specifically, I sponsor:

- The description of the proposed rebuilt transmission line and substation upgrades as part of the Project in Section II (but not Sections II.A.2, 3, and 9) of the Response to Guidelines;

- Exhibits 3 through 8: Existing and Proposed Transmission Line Structures;

- Exhibit 9 and Confidential Exhibit 9-C: Abert Substation Layout, Map, and Views and One Line Diagram;

- Confidential Exhibit 10-C: Digital copies of the Virginia Department of Transportation General Highway Maps for Amherst and Bedford Counties and the City of Lynchburg, Virginia, showing the Project in lieu of providing three hard copies; and

- Geographic Information System ("GIS") shapefiles of the Project to be submitted electronically to the Commission with the Application.

DIRECT TESTIMONY OF
J. SCOTT WOODY, P.E.
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Q: PLEASE STATE YOUR NAME, PRESENT POSITION, AND BUSINESS ADDRESS.

A: My name is Jeffrey Scott Woody. I am a Manager for Transmission Line Engineering for American Electric Power Service Corporation ("AEPSC"). AEPSC is a subsidiary of American Electric Power Company, Inc. ("AEP") that provides corporate support services to the operating subsidiaries of AEP, including Appalachian. My business address is 40 Franklin Road SW, Roanoke, Virginia 24011.

Q: PLEASE REVIEW YOUR EDUCATIONAL BACKGROUND AND YOUR WORK EXPERIENCE.

A: I graduated from Virginia Polytechnic Institute and State University with a Bachelor of Science in Civil and Environmental Engineering in 2012. I am a licensed Professional Engineer in the Commonwealth of Virginia. I worked for two years in a civil site development firm and then was hired by AEP in 2014 as a full-time employee in the Transmission Line Engineering group. I was promoted to the position of Supervisor within the Transmission Engineering group in 2023. In 2024, I was promoted to my current position of Manager, Transmission Line Engineering.

I am responsible for coordinating and directing engineering for the AEP transmission line system, including transmission lines operating at voltages from 34.5-kV through 765-kV in Virginia, West Virginia, Tennessee, and Kentucky.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: The purpose of my testimony is to support the transmission line and substation components of Appalachian's Application to this Commission for approval and certification of the Project. Specifically, the Company proposes to:

- Rebuild approximately 4.4 miles of the existing Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations; and
- Upgrade the existing Abert Substation, which includes the replacement of two 69-kV motor-operated air break switches and the 69-kV circuit switcher on the capacitor bank.

I am sponsoring the transmission line and substation components of the Project as detailed in various sections of the Response to Guidelines filed by the Company together with the Application in response to the Commission Staff's "Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia." See the testimony of Company Witness Moore for additional details concerning the necessity of the Project.

Q: WHAT ARE YOUR RESPONSIBILITIES AS A MANAGER OF TRANSMISSION LINE ENGINEERING?

A: As a Manager of Transmission Line Engineering, my primary duties involve oversight of the engineering, design, material procurement, and other technical requirements associated with the construction of transmission lines associated with this Project and other transmission line engineering projects.

Q: WHICH SPECIFIC MATERIALS INCLUDED IN THE RESPONSE TO GUIDELINES ARE YOU SPONSORING?

A: I am sponsoring:

- The description of the proposed rebuilt transmission line and substation upgrades as part of the Project in Section II (but not Sections II.A.2, 3, and 9) of the Response to Guidelines;
- Exhibits 3 through 8: Existing and Proposed Transmission Line Structures;
- Exhibit 9 and Confidential Exhibit 9-C: Abert Substation Layout, Map, and Views and One Line Diagram;
- Confidential Exhibit 10-C: Digital copies of the Virginia Department of Transportation General Highway Maps for Amherst and Bedford Counties and the City of Lynchburg showing the Project in lieu of providing three hard copies; and
- GIS shapefiles of the Project to be submitted electronically to the Commission with the Application.

Q: WERE THE PORTIONS OF APPALACHIAN'S FILING THAT YOU ARE SPONSORING PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A: Yes.

Q: PLEASE DESCRIBE TRANSMISSION LINE ENGINEERING'S ROLE IN THE ROUTE REVIEW PROCESS.

A: The Company's transmission line engineers were part of the Siting Team and were involved throughout the route review process. Specifically, the transmission line engineers conducted desktop and field reviews of the Proposed Route to validate the feasibility of rebuilding the transmission line in or near the existing 100-foot-wide transmission line right-of-way ("ROW") from an engineering and constructability standpoint. For more information on the route review process, see the testimony of Company Witness Smith.

Q: PLEASE DESCRIBE THE PROPOSED TRANSMISSION LINE WORK.

A: With the load growth in the area, there is a thermal violation on the section of the Company's Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations. This will require rebuilding approximately 4.4 miles of the existing single-circuit 69-kV line between the Abert and Reusens Substations with higher capacity structures and conductors. Approximately 3.9 miles of the Proposed Route will be rebuilt within 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 and environmental constraints. The proposed configuration for the transmission line section to be rebuilt will be a single-circuit 69-kV line supported by steel H-Frame and three-pole, direct embed structures with guys, along with steel monopole dead-end structures on drilled pier foundations as needed. Wires for the rebuild consist of three (3) 795,000 circular mil aluminum conductor steel-reinforced "Drake" conductors with 26/7 stranding, one (1) optical ground wire shield wire, and one (1) 7#10 Alumoweld shield wire.

Q: WHAT STRUCTURE TYPES WILL BE USED FOR THE PROJECT?

A: The Project requires multiple types of transmission line structures as described in Section II.B of the Response to Guidelines. Proposed structures will be composed of dulled galvanized steel. Final structure types will be determined during final engineering, which includes ground survey and geotechnical studies. Nevertheless, based on preliminary engineering, the Company anticipates primarily using single-circuit steel H-frames, monopoles, and three-pole structures for the proposed single-circuit 69-kV transmission lines. The proposed structures are described in detail in Exhibits 6 to 8.

Q: HOW DO THE HEIGHTS OF THE EXISTING AND PROPOSED STRUCTURES COMPARE TO EACH OTHER?

The existing structures, which date back to the 1960s, were built under the then existing standards and average about 52 feet above ground. The average height of the proposed structures will be approximately 72 feet above ground and thus will be approximately 20 feet taller. Additional height is required to accommodate the larger conductor due to the increased ampacity and to meet current electrical clearance requirements.

Q: WHY DID THE COMPANY CHOOSE STEEL H-FRAMES, THREE-POLES AND MONOPOLES FOR THE PROPOSED STRUCTURES?

A: Galvanized steel structures are a proven, durable, reliable, cost effective, and efficient structure in this area and avoid woodpecker damage, which is common with wood pole structures. The proposed steel H-frame, three-pole, and monopole structures are well-suited to support long conductor spans with fewer structures, increase conductor sizes, and minimize the structure height with wires that are horizontally configured. The existing structures on the line are primarily wooden H-Frame and three-pole structures.

Q: WILL THE COMPANY EMPLOY LOW-COST AND EFFECTIVE MEANS TO IMPROVE THE AESTHETICS OF THE REBUILT TRANSMISSION LINE?

A: The proposed structures are to be located in or near the existing ROW, similar in character to the existing structures; therefore, aesthetic impacts are expected to be minimal. The Company chose dulled galvanized steel for the proposed structures due to its durability and proven reliability in this region.

Q: WHAT IS THE COMPANY'S OPINION ON THE PROPOSED ROUTE?

A: The Company supports the Siting Team's conclusion that the Proposed Route for the Project – which mainly uses the existing ROW – is the most suitable and reasonably avoids or minimizes adverse impacts on landowners, historic resources, and the environment of the area. See Section II.A.9 and Section V of the Response to Guidelines and the testimony of Company Witness Smith for a detailed description of the Proposed Route. The Company reasonably expects that it will be able to efficiently and effectively engineer, build, operate, and maintain the transmission line with minimal adverse impacts on the environment.

Q: HOW WIDE OF A ROW DOES THE COMPANY TYPICALLY NEED FOR THE PROPOSED PROJECT?

A: The ROW for the Project will generally be 100 feet wide in areas of new, supplemental, or existing easements.

Q: IS THERE ANY PART OF THE PROJECT THAT MAY REQUIRE MORE THAN A 100-FOOT-WIDE ROW?

A: Additional width could be required between proposed structures 432-10A and 432-11A for conductor sway on long spans; however, detailed engineering will determine final ROW widths.

Q: DESCRIBE THE CONSTRUCTION ACTIVITIES FOR THE TRANSMISSION LINE COMPONENT OF THE PROJECT.

A: Project construction activities include the installation and maintenance of soil erosion and sedimentation control measures; access road construction; removal of the existing transmission line wire, structures, and foundations; installation of foundations, structures,

and wire; and the subsequent rehabilitation of all areas disturbed during construction. All required environmental compliance permits and studies will be completed, and a stormwater pollution prevention plan will be developed and implemented under the state's General Permit for Discharges of Stormwater from Construction Activities. Additionally, portions of the line that are located in new ROW will be constructed prior to beginning the circuit outage in each section. Further details of each step of the construction activities can be found in Section II.A.10.

Q: PLEASE DESCRIBE ANY OTHER WORK RELATED TO THE CONSTRUCTION OF THE PROJECT.

A: Temporary material laydown yards and access roads for structure erection and conductor stringing will be necessary. The final location and extent of required laydown yards and access roads cannot be determined until after completion of final line design, environmental studies, and subsequent field reconnaissance by the Company's construction representatives and land agents.

Q: PLEASE DESCRIBE THE SUBSTATION COMPONENT OF THE PROJECT?

A: The proposed upgrades at the Abert Substation are described in Section II.C of the Response to Guidelines. The upgrades include the following:

- Install new adder box bay structure to replace the phase-over-phase switch.
- Install new line switches and Coupling Capacitor Voltage Transformer ("CCVT") for the Reusens and Skimmer 69-kV circuits.
- Install one three-phase bus CCVT to the box bay structure.
- Relocate capacitor bank to box bay structure and remove legacy walk bus.
- Install new mobile transformer disconnect switch to box bay structure.
- Install two new control cabinets and direct bury control cabling.

- Remove one legacy distribution pole and one turn pole.
- Expand the station fence approximately five feet to the south and approximately 10 feet to the east, entirely on Company-owned property, to support new and relocated station equipment.

Q: WILL ALL THE STATION WORK BE DONE ON THE EXISTING COMPANY PROPERTY?

A: Yes.

Q: IS PLACING ALL OR PART OF THE TRANSMISSION LINE UNDERGROUND A REASONABLE OPTION?

A: No. The additional cost, reliability risks, and environmental impacts associated with locating a line, in whole or in part, underground is not appropriate for this Project. Additionally, the Proposed Route reasonably avoids or minimizes adverse impacts on people and the scenic assets, historic resources, and environment of the area concerned.

Q: DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A: Yes.

APCo Exhibit No. ____
Witness: AMH

DIRECT TESTIMONY OF
AMANDA M. HURST
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

APCo Exhibit No. ____
Witness: AMH

SUMMARY OF DIRECT TESTIMONY OF AMANDA M. HURST

My direct testimony supports the right-of-way ("ROW") aspects of Appalachian Power Company's ("Appalachian" or "Company") Application and Response to Guidelines for the Abert – Reusens Transmission Improvements Project ("Project"). Specifically, I am co-sponsoring Sections II.A.6 and 8 of the Response to Guidelines.

The existing ROW easements for the Company's existing Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations generally were obtained prior to the 1960s and, if a ROW width is specified, the width is typically 100 feet. These easements generally allow the Company to construct, operate, and maintain the transmission line, including the right to rebuild the line; however, some of the agreements contain special provisions, such as those limiting the location, number, or type of structures permitted. If needed, the Company plans to supplement existing easements or obtain new easements depending on the language of the easement document and whether the proposed route of the ROW on the parcel is in question.

The Company's ROW agents met during fall 2025 and winter 2026 with landowners of the parcels to be crossed by the Proposed Route in areas of new ROW. The results of the meetings have been positive, and the landowners appear willing to work with the Company regarding the Project.

There are no dwellings located within the ROW of the Proposed Route of the Project. There are two privately-owned nonresidential outbuildings that appear to have encroached in the ROW. At these locations, the Proposed Route is within the existing 100-foot-wide ROW. The Company's ROW agents are communicating with the affected landowners to discuss the Project. Subject to final engineering and ROW negotiations, the Company will determine whether these outbuildings will need to be removed or relocated from the ROW.

DIRECT TESTIMONY OF
AMANDA M. HURST
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Q: PLEASE STATE YOUR NAME, PRESENT POSITION, AND BUSINESS ADDRESS.

A: My name is Amanda M. Hurst. I am a Transmission Right-of-Way ("ROW") Agent – Staff for American Electric Power Service Corporation ("AEPSC"). AEPSC is a subsidiary of American Electric Power Company, Inc. ("AEP") that provides corporate support services to the operating subsidiaries of AEP, including Appalachian. My business address is 40 Franklin Road SW, Roanoke, Virginia, 24011.

Q: PLEASE REVIEW YOUR EDUCATIONAL BACKGROUND AND YOUR WORK EXPERIENCE.

A: I received a Bachelor of Science in Electrical Engineering from Virginia Polytechnic Institute and State University. I have over 20 years of experience working in 35 different states across the United States for various utilities or their subcontractors in the acquisitions of various property interests, such as ROWs for transmission lines and natural gas pipelines. I have over 12 years of experience holding supervisory positions in project management for utilities or their subcontractors on transmission, distribution, and pipeline projects. I am a licensed real estate broker in the state of Colorado, and I am a Registered Landman with the American Association of Professional Landmen.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: The purpose of my testimony is to support the ROW-related aspects of the Project as part of the Company's Application to the Commission.

Q: WHAT ARE YOUR RESPONSIBILITIES AS RELATED TO A TYPICAL TRANSMISSION LINE PROJECT?

A: As a ROW Agent – Staff, my primary duties include supervision of ROW staff, management of the ROW subcontractors employed by AEP on the Project, interaction with landowners regarding ROW questions, coordination with the project manager to keep the project on schedule, and to assist as needed in the procurement of permits and easements.

Q: WHICH SPECIFIC MATERIALS ARE YOU SPONSORING?

A: I am co-sponsoring Sections II.A.6, 7, and 8 of the Response to Guidelines.

Q: WERE THE PORTIONS OF APPALACHIAN'S FILING THAT YOU ARE SPONSORING PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A: Yes.

Q: PLEASE DESCRIBE THE EXISTING ROW EASEMENTS FOR THE BIG ISLAND – REUSENS 69-KV TRANSMISSION LINE.

A: The existing ROW easements for the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations generally were obtained prior to the 1960s and, if a ROW width is specified, the width is typically 100 feet. The existing easements generally allow the Company to construct, operate, and maintain the transmission line, including the right to rebuild the line; however, some of the agreements contain special provisions, such as those limiting the location, number, or type of structures permitted.

Q: DOES THE COMPANY PLAN TO SECURE NEW EASEMENTS FOR THE PROJECT?

A: Most of the Proposed Route is on the centerline of the existing ROW. There are three diversions along the Proposed Route in which approximately 7.2 acres of new ROW is required. At these locations, the new ROW is overlapping, parallel to, or near the existing ROW. The testimony of Company Witness Smith describes the diversions along the Proposed Route. The Company plans to supplement the existing easements or obtain new easements unless the existing easements allow for the relocation of the transmission line, or supplemental easements are otherwise not necessary.

Q: HAS THE COMPANY MET WITH THE LANDOWNERS WHERE NEW ROW WILL BE NEEDED?

A: Yes. In addition to the public open house meeting held in August 2025, the Company's ROW agents met in fall 2025 and winter 2026 with landowners of the parcels to be crossed by the Proposed Route where it diverts from the existing ROW. The results of the meetings have been positive, and the landowners appear willing to work with the Company regarding the Project.

Q. ARE THERE ANY BUILDINGS LOCATED WITHIN THE ROW OF THE PROPOSED ROUTE?

A: There are no dwellings within the ROW of the Proposed Route; however, there are two non-residential outbuildings that appear to have encroached into the ROW of the existing line. The Company will continue to coordinate with the affected landowners. Subject to completion of final engineering design and ROW negotiations with the affected

landowners, the Company will determine whether these two outbuildings will need to be removed or relocated to accommodate the rebuilt transmission line.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.

Exhibit No. ___
Witness: ER

DIRECT TESTIMONY OF
EBRAHIM REZAEI
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Exhibit No. ___
Witness: ER

SUMMARY OF DIRECT TESTIMONY OF EBRAHIM REZAEI

My direct testimony supports Appalachian Power Company's ("Appalachian" or "Company") Application and Response to Guidelines. I am sponsoring Section IV of the Response to Guidelines.

The proposed Abert – Reusens Transmission Improvements Project ("Project") involves the rebuild of approximately 4.4 miles of an existing single-circuit 69-kilovolt ("kV") transmission line and upgrades to an existing substation. The Proposed Route for the Project will be rebuilt in or near the existing 100-foot-wide right-of-way ("ROW"). My testimony summarizes the maximum electric and magnetic field ("EMF") levels expected to occur at the existing and proposed ROW edge of the Project's 69-kV transmission line.

As described in my testimony, 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.

The maximum EMF levels, as detailed in Section IV of the Response to Guidelines, for the rebuilt transmission line are typical and expected results for such transmission lines and well within the limits specified in the Institute of Electrical and Electronics Engineers' ("IEEE") Standard C95.1™-2019, which sets the safety levels with respect to human exposure to EMF.

The Company considered the presence and proximity of dwellings, schools, hospitals, and other community facilities as features to avoid wherever practical during its route selection process to minimize EMF exposure. The Project will primarily use the existing ROW, which has been in service since the 1960s. No significant adverse health effects will result from the construction and operation of the Project. Section IV of the Response to Guidelines provides further documentation and detail regarding the absence of adverse health effects from the construction and operation of the Project.

DIRECT TESTIMONY OF
EBRAHIM REZAEI
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Q: PLEASE STATE YOUR NAME, PRESENT POSITION, AND BUSINESS ADDRESS.

A: My name is Ebrahim Rezaei. I am a Manager of System Performance Analysis for American Electric Power Service Corporation ("AEPSC"). AEPSC is a subsidiary of American Electric Power Company, Inc. ("AEP") that provides corporate support services to the operating subsidiaries of AEP, including Appalachian. My business address is 8500 Smiths Mill Road, New Albany, Ohio 43054.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A: I received both a Bachelor of Science and a Master of Science in Electrical Engineering from The University of Tehran. I received a Doctor of Philosophy in Electrical Engineering from Washington State University. My current position with AEPSC is a Manager of System Performance Analysis. I joined AEPSC in 2017 as an Intern. In 2019, I became an Engineer and then in 2023, I became a Senior Engineer. A year later, in 2024, I was promoted to Supervisor. In 2025, I was promoted to my current position.

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: The purpose of my testimony is to support certain aspects of Appalachian's Application for approval and certification of the Project, which involves the rebuild of approximately 4.4 miles of an existing single-circuit 69-kV transmission line and upgrades to an existing substation. The Proposed Route for the Project will be rebuilt in or near the existing 100-

foot-wide ROW. My testimony summarizes the maximum EMF levels expected to occur at the existing and proposed ROW edge of the Project's 69-kV transmission line.

Q: WHICH SPECIFIC MATERIALS INCLUDED IN THE APPLICATION ARE YOU SPONSORING?

A: I am sponsoring Section IV (Health Aspects of EMF) of the Response to Guidelines filed by the Company in response to the Commission Staff's "Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia."

Q: WERE THE PORTIONS OF THE FILING THAT YOU ARE SPONSORING PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A: Yes.

Q: WHAT IS EMF?

A: EMF is an acronym for electric and magnetic fields, which exist wherever there is a flow of electricity. Electric transmission and distribution lines, electrical wiring in homes, and electric appliances all have electric and magnetic fields associated with their use. Electric fields are produced by the voltage gradient between a power line and ground; their strength is dependent upon the voltage difference of the energized line to ground, the physical characteristics of the line, and the distance from the line to the observation point at which the field strength is measured. The electric field strength is commonly measured in kV/m. Magnetic fields are created by the flow of electric current in a conductor. The magnetic field density generated by a transmission line varies with the load current of the line, the physical characteristics of the line, and the distance from the line to the observation point at which the magnetic field density is measured. The magnetic field density is measured in units known as gauss, or milligauss ("mG"). The EMF associated

with power lines and electric appliances in the United States have a frequency of 60 Hz, or 60 cycles per second.

Q: PLEASE DETAIL FOR THE COMMISSION YOUR EXPERIENCE IN CALCULATING AND ANALYZING EMF.

A: I have close to eight years of experience conducting and managing the calculation and analysis of a variety of issues in the power system industry for safe, reliable, economic, and environmentally-compatible operation of power equipment and transmission lines, for high-voltage grid development, for system voltage coordination, for power flow and stability analysis, for power quality, and for development and implementation of advanced technologies. Prior to my roles in AEPSC, I was a research assistant at Washington State University for four years, focused on power system data analytics while pursuing my PhD. I am now leading one of the System Performance Analysis teams, which is a team of experts who perform EMF calculations and analysis, at AEP.

Q: PROVIDE THE PRESENT EMF LEVELS AND THE MAXIMUM LEVELS CALCULATED AT THE EDGE OF THE ROW AFTER THE REBUILT LINE IS OPERATIONAL.

A: As provided in Section IV.A of the Response to Guidelines, the maximum EMF levels expected to occur at the ROW edge of the proposed rebuilt line are approximately 0.067 kV/m for the electric field and 6.65 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. All calculations were obtained at the height of 3.28 feet (one meter) above ground using the Bonneville Power Administration's Corona and Field Effects program. These values

are based on conservative steady-state loading assumptions and consideration of both base-case and contingency operating conditions.

Q: ARE THE CALCULATED MAXIMUM EMF LEVELS FOR THE PROPOSED REBUILT TRANSMISSION LINE EXTRAORDINARY?

A: No. They are typical and expected results for such transmission lines. Both electric and magnetic field levels drop sharply from the centerline to the edge of the ROW and will continue to drop with distance from the ROW edge. These field levels are well within the limits specified in IEEE Standard C95.1™-2019, which sets the safety levels with respect to human exposure to EMF.

Q: IS THE PROPOSED LINE CONFIGURATION FOR THE PROJECT A PRUDENT CHOICE TO REDUCE EMF LEVELS?

A: Yes. From an EMF perspective, the Company's proposed configuration is a prudent choice and consistent with the intent of both the Virginia Department of Health and World Health Organization, which promote public safety relative to EMF. In particular, the proposed line configuration will largely be rebuilt in the existing 100-foot-wide ROW, which has been in place since the 1960s.

Q: WERE PRUDENT AVOIDANCE MEASURES UTILIZED DURING THE ROUTE SELECTION PROCESS IN ORDER TO MINIMIZE EMF EXPOSURE?

A: Yes. The presence and proximity of dwellings, schools, hospitals, and other community facilities were considered throughout the route selection process as features to avoid, to the extent practical, as described in the direct testimony of Company Witness Smith.

Q: DOES THE COMPANY HAVE AN OPINION ON WHETHER ANY SIGNIFICANT ADVERSE HEALTH EFFECTS WILL RESULT FROM THE CONSTRUCTION AND OPERATION OF THE PROJECT?

A: Based upon the Company's ongoing review of the scientific literature on EMF, the Company's experience with its existing transmission system, and the fact that the calculated maximum EMF levels at the edges of the ROW for the proposed rebuilt line are well within the limits specified in IEEE Standard C95.1™-2019, the Company is of the opinion that no significant adverse health effects will result from the construction and operation of the Project. This position is consistent with the conclusions expressed in the final report to the Virginia General Assembly, dated October 31, 2000, by Vickie L. O'Dell and Khizar Wasti, Ph.D., of the Virginia Department of Health, in association with this Commission, entitled "Monitoring of Ongoing Research on the Health Effects of High Voltage Transmission Lines (Final Report)" and subsequent assessments as listed in Section IV of the Response to Guidelines.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.

APCo Exhibit No. ____
Witness: RPS

DIRECT TESTIMONY OF
ROYA P. SMITH
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

APCo Exhibit No. ____
Witness: RPS

SUMMARY OF DIRECT TESTIMONY OF ROYA P. SMITH

My direct testimony supports the route development and environmental analysis aspects of Appalachian Power Company's ("Appalachian" or "Company") Application and Response to Guidelines for the Abert – Reusens Transmission Improvements Project ("Project"). Specifically, I sponsor:

- Sections II.A.2, 3, and 9, Section III, and Section V of the Response to Guidelines;
- Exhibit 2: Geographic Information System ("GIS") Constraints Map;
- Exhibit 11: Photo Simulations;
- Exhibit 12: Public Notice Map;
- Rebuild Siting Study for the Abert – Reusens Transmission Improvements Project ("Siting Study"); and
- Virginia Department of Environmental Quality Supplement ("VDEQ Supplement").

The Company retained Environmental Resources Management ("ERM") to evaluate the section of the existing Big Island – Reusens 69-kilovolt ("kV") Transmission Line and conduct a siting study for the transmission line to be rebuilt in Amherst and Bedford Counties and the City of Lynchburg, Virginia. My testimony describes the process followed by the Siting Team, a multi-disciplinary team consisting of representatives from the Company and ERM, to identify the Proposed Route for the Project. Additionally, my testimony describes the rebuild of approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations that will occur in or near the existing 100-foot-wide right-of-way ("ROW").

The Siting Team used a traditional siting methodology that identified constraints and opportunities, evaluated the feasibility of rebuilding the transmission line within the existing ROW, gathered and incorporated feedback from stakeholders and landowners, conducted field reviews and analysis of alternative routes, and selected a Proposed Route. The Siting Study shows that the Proposed Route for the Project is the most suitable and avoids or minimizes adverse impacts on the human and natural environments by rebuilding within or near the existing transmission line ROW.

The Company considered feedback from federal, state, and local agencies and/or officials and undertook public outreach efforts to promote meaningful engagement from each community affected by the Project. The Project is not anticipated to have a

disproportionately high or adverse impact on environmental justice or fenceline communities, and the Company will continue to engage with all affected landowners.

Finally, I describe the Proposed Route, the potential impacts on scenic, environmental, and historic features, and the corridor within which the Company proposes to engineer, construct, operate, and maintain the Project.

DIRECT TESTIMONY OF
ROYA P. SMITH
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA SCC CASE NO. PUR-2026-00047

Q: PLEASE STATE YOUR NAME, EMPLOYER, POSITION, AND BUSINESS ADDRESS.

A: My name is Roya P. Smith. I am employed as a Principal Consultant with ERM. My business address is 919 E. Main Street, Richmond, Virginia 23219.

Q: DOES ERM HAVE PROFESSIONAL EXPERIENCE IN ENVIRONMENTAL ANALYSIS AND ROUTING TRANSMISSION LINES?

A: Yes. ERM has extensive experience in the routing, feasibility assessments, and permitting of energy infrastructure projects. It has assisted its clients in the identification, evaluation, and development of linear energy facilities for the past 30 years. During this time, ERM has developed a consistent approach for linear facility routing and route selection based on the identification, mapping, and comparative evaluation of routing constraints and opportunities within defined study areas. ERM uses data-intensive GIS spatial and dimensional analysis and the most current and refined data layers and aerial photography resources available for the identification, evaluation, and selection of transmission line routes.

In addition to Appalachian, ERM's clients include some of the largest energy companies in the United States, Canada, and the world, including Dominion Energy, NextEra Energy, Phillips Kinder Morgan, British Petroleum, Enbridge Energy, and others. ERM also routinely assists the staff of the Federal Energy Regulatory Commission, United States Army Corps of Engineers, and the U.S. Forest Service in the identification and/or

evaluation of linear energy routes to support federal National Environmental Policy Act evaluations. ERM works on both small and large energy projects and has assisted in or conducted the routing and route evaluation of some of the largest electric transmission line and pipeline facilities in North America.

Q: PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A: I earned a Bachelor of Science from Virginia Polytechnic Institute and State University in 2015 and a Master of Business Administration from Virginia Commonwealth University in 2018. I have approximately 11 years of experience supporting land use permitting, zoning, and the siting and regulatory permitting of utility-scale energy facilities, including electric transmission lines, throughout the eastern United States. During this time, I have been employed by a local government and an engineering and environmental consulting firm, and most recently, four years with ERM, a privately-owned consulting company specializing in the siting, licensing, and environmental construction compliance of large, multi-state energy facilities.

Q: HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A: Yes, I have previously testified as a witness before the Commission for the route development process and environmental analysis for the following utility applications:

- Appalachian's Fieldale to Ridgeway 138-kV Rebuild Project (SCC Case No. PUR-2021-00219);
- Appalachian's Reusens to New London 138-kV Rebuild Project (SCC Case No. PUR-2021-00049);
- Dominion Energy Virginia's Duval-Midlothian 230-kV Lines and Duval Substation in Chesterfield County (Case No. PUR-2025-00073);

- Dominion Energy Virginia's Apollo-Twin Creeks Electric Transmission Project in Loudoun County (Case No. PUR-2024-00044); and
- Dominion Energy Virginia's Daves Store 230-kV Line Extension in Prince William County (Case No. PUR 2024-00021).

Additionally, although I did not offer direct testimony, I previously supported the route development of three of Appalachian's previous filings to the Commission, which include: the Stuart Area 138-kV Transmission Improvements Project (Case No. PUR-2023-00024), the Central Virginia Transmission Reliability Project (Case No. PUR-2021-00001), and the Glendale Area Improvements 138-kV Transmission Project (Case No. PUR-2018-00096).

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A: The purpose of my testimony is to support the route development process and environmental analysis completed for the Project as part of the Company's Application to the Commission.

Q: WHICH SPECIFIC MATERIALS ARE YOU SPONSORING?

A: In the Company's Application, I am sponsoring:

- Sections II.A.2, 3, and 9, Section III, and Section V of the Response to Guidelines;
- Exhibit 2: GIS Constraints Map;
- Exhibit 11: Photo Simulations;
- Exhibit 12: Public Notice Map;
- Siting Study (in Volume 2); and
- VDEQ Supplement (in Volume 2).

Q: WERE THE PORTIONS OF ERM'S FILING THAT YOU ARE SPONSORING PREPARED BY YOU OR UNDER YOUR SUPERVISION AND DIRECTION?

A: Yes.

Q: SPECIFICALLY, HOW IS YOUR PRIOR EXPERIENCE APPLICABLE TO THE CURRENT PROJECT?

A: My professional experience related to electric transmission line projects includes the direct management of impact assessments and agency consultations associated with the routing and siting of multiple transmission line projects as well as the management of the routing of these facilities. My work on these projects included conducting studies to identify and delineate routing constraints and opportunities; identification and evaluation of route alternatives (where applicable); public and stakeholder engagement; and analysis of route alternatives. I have managed and supported the siting and evaluation of over 100 miles of high-voltage transmission line route alternatives in the Commonwealth for Dominion Energy Virginia and Appalachian. I have applied this experience to the Project, which crosses both developed and forested areas in Amherst and Bedford Counties and the City of Lynchburg, Virginia.

Q: PLEASE DESCRIBE YOUR PRIMARY DUTIES AS RELATED TO THE PROJECT.

A: The Company retained ERM to evaluate the existing Big Island – Reusens 69-kV Transmission Line ROW between the Company's Abert and Reusens Substations, complete a siting study, and evaluate the Proposed Route for the transmission line to be rebuilt. As ERM's Project Manager, I led the Siting Team by planning and overseeing the following general activities:

- Define a geographic study area based on the Company's electric transmission needs for the Project.
- Identification and mapping of environmental and built features within the study area.
- Incorporate feedback received from stakeholders and landowners within the Project area.
- Conduct field reviews and comparative analysis of a rebuild route.
- Select a proposed route that reasonably avoids or minimizes adverse impacts on the community, historic and visual resources, and natural environment in the Project area, and is consistent with general routing guidelines, technical criteria, and the Company's operational outage restrictions.
- Document the routing efforts into a siting study.

Q: WHO WAS ON THE SITING TEAM?

A: The Siting Team for the Project consisted of a multi-disciplinary team, including employees from the Company, ERM, and other consultants retained by or on behalf of the Company, who supported the route development and public involvement process. Members of the Siting Team represented transmission line, substation, and distribution engineering, ROW, public outreach, environmental, outage planning, and construction management. The Siting Team members have extensive experience in transmission line siting and impact assessment for natural resources, scenic resources, cultural and historic resources, land uses, and constructability.

Q: PLEASE DESCRIBE FOR THE COMMISSION THE PURPOSE OF THE SITING STUDY FOR THE PROJECT.

A: The primary purpose of the Siting Study is to identify the Proposed Route for the transmission line to be rebuilt that will enable the Company to engineer, construct,

operate, and maintain the line, while minimizing overall impacts on environmental and land use resources to the extent practical. The Siting Study identifies the Project study area, summarizes the siting methodology used to evaluate constraints and opportunities within the study area, documents public engagement activities undertaken by the Siting Team, and provides a quantitative and qualitative analysis of the transmission line to be rebuilt. Finally, the Siting Study identifies and evaluates the Proposed Route for the Project. The Siting Study is included in Volume 2 of the Application.

Q: DID THE SITING TEAM CONSIDER ANY GENERAL OR TECHNICAL CRITERIA FOR THE EXISTING LINE TO BE REBUILT?

A: Yes. The Siting Team considered various siting and technical guidelines during the route development process for the transmission line to be rebuilt. Constructing transmission lines within the Company's existing ROWs is preferred and, where constraints are present, diversions from the existing ROW are reviewed and evaluated. As such, using or paralleling existing ROWs generally minimizes impacts on the natural and human environments and is consistent with §§ 56-46.1 and 56-259 of the Code, which provide that existing ROWs should be given priority when adding new transmission line facilities. Additionally, the Siting Team sought to avoid or reasonably minimize impacts on environmental justice ("EJ") communities, including communities of color and low-income communities, and to obtain meaningful involvement from the public.

The siting criteria considered by the Siting Team included maximizing the use of existing ROW and minimizing impacts on existing and future land uses, tree clearing and habitat fragmentation, pastureland and farmland of statewide importance, and constructability. As discussed in the testimony of Company Witness Woody, the Siting Team considered

the terrain and river crossing for the Project, which can impact structure and access road design, and considered safety with respect to construction, maintenance, and operation of the transmission line. The Siting Team considered these criteria in addition to stakeholder and landowner input received about the Project.

Q: PLEASE DESCRIBE THE SITING METHODOLOGY EMPLOYED FOR THE PROJECT.

A: The Siting Team developed a geographical study area for the Project, which encompasses the Project endpoints (the Abert and Reusens Substations). The Project Study Area encompasses an approximately one-mile buffer of the existing Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations in Amherst and Bedford Counties and the City of Lynchburg. The Siting Team gathered data from public databases and mapping to determine the constraints and opportunities within the Study Area.

Route development for a rebuild project starts with a review of the existing ROW. Three Focus Areas were identified for the Project where constraints were present: the Salt Creek, Fox Hill Road, and Judith Creek Focus Areas (see Section 3.0 in the Siting Study). Along the transmission line to be rebuilt, the Siting Team identified three Study Segments, which are off-centerline route alignments within or near the existing ROW, to avoid or minimize impacts on specific constraints in the Focus Areas.

Next, the Company engaged stakeholders, including federal, state, and local officials, and landowners in the communities crossed by the Project to gather feedback on the Study Segments (see Section 4.0 in the Siting Study). Based on the feedback received and field reconnaissance, the Siting Team refined the Study Segments and developed a Rebuild

Route (see Section 5.0 in the Siting Study). The Rebuild Route was evaluated using a qualitative and quantitative analysis to compare potential impacts on the natural and human environment, land use and local communities, constructability, and engineering considerations. Finally, abandoning the existing ROW for a new greenfield route, which would introduce new impacts, was determined to be neither practical nor necessary; therefore, alternative routes were not developed.

Q: PLEASE DESCRIBE THE OPPORTUNITIES AND CONSTRAINTS ANALYSIS USED BY THE SITING TEAM.

A: Using publicly available data and the Company's technical routing criteria, the Siting Team identified constraints and opportunities within the Study Area. Constraints are specific areas that should be avoided to the extent practical during the route development process, and opportunities are existing features of similar use that can be paralleled by potential route alignments. The primary constraints for the Project include residences near the existing ROW, a gas pipeline, historic resources, recreational resources, streams, and the James River. The primary opportunity for the Project is the existing transmission line ROW between the Abert and Reusens Substations, which has been in place since the 1960s.

Q: HOW DID THE SITING TEAM USE FIELD INVESTIGATIONS DURING THE ROUTE DEVELOPMENT PROCESS?

A: I reviewed the existing transmission line ROW with members of the Siting Team from publicly accessible locations. During this field review, the Siting Team confirmed the desktop constraint and opportunity data, evaluated potential locations for rebuild structures, and reviewed specific locations of interest identified by the public.

Q: WERE ANY CONSTRAINTS, SUCH AS BUILDINGS, FOUND TO BE LOCATED WITHIN THE EXISTING ROW BASED ON FIELD REVIEWS OR OTHER METHODS?

A: Yes. Two non-residential outbuildings appear to have encroached on the existing ROW near existing structures 432-18 and 432-15 based on field review. These locations are depicted on Maps 3 and 4 in Exhibit 2. The Company will coordinate with these landowners during ROW negotiations and once final engineering is complete. See the testimony of Company Witness Hurst.

Q: PLEASE DESCRIBE THE PUBLIC INVOLVEMENT ACTIVITIES THE COMPANY HAS COMPLETED TO INTRODUCE THE PROJECT AND SOLICIT FEEDBACK.

A: The Project was publicly announced with a news release and launch of a Project-specific website on July 28, 2025. Landowners within a 1,000-foot corridor (500 feet on either side of the Project centerline, including the three Study Segments) were notified of the Project and open house. Mailing addresses were obtained from publicly available parcel and ownership data in Amherst and Bedford Counties and the City of Lynchburg. Notifications included the following activities:

- A news release was distributed by the Company on July 28, 2025, to announce the Project and invite landowners to attend an open house.
- Two separate mailings were sent to 125 landowners with properties within 500 feet of the transmission line to be rebuilt, which included the three Study Segments. A packet was sent on July 24, 2025, which included a letter announcing the Project and open house, Project fact sheet, Project maps, and a

comment card with a prepaid postage return envelope. A postcard was later sent on July 28, 2025, to announce the Project and open house.

- Phone calls and emails were used to contact 214 landowners to announce the Project and open house. Landowners received an email on August 5, 2025, and phone calls on August 5 and 11, 2025.

The Company hosted one in-person open house on August 12, 2025, from 5:30 p.m. to 7:30 p.m. at the Lynchburg Regional Business Alliance, located at 300 Lucado Place in the City of Lynchburg. At the open house, Company representatives and the Siting Team provided information about the Project and were available to answer questions and collect comments. Additionally, various stations were set up at the open house that provided information related to engineering and design of structures, Project need, ROW, and construction. For the transmission line rebuild, three study segments were displayed on printed maps for the public to view and comments from the community were recorded directly on the maps or on comment cards that were made available at the open house. A total of 22 people attended the open house.

Additionally, the public was invited to review Project information and comment electronically through the Project website at www.AppalachianPower.com/AbertReusens. A virtual open house was posted to the Project website where landowners could engage with similar content to that of the in-person public open house. Information related to the Project need, engineering and design of the transmission line, and ROW and construction activities was presented in audio and visual formats. In addition to the comment cards collected at the open house, questions and comments were also accepted through the website.

Q: DESCRIBE THE THREE STUDY SEGMENTS PRESENTED AT THE IN-PERSON OPEN HOUSE.

A: In addition to the portions of the transmission line to be rebuilt within the existing ROW, the Company presented three Study Segments, as shown in detail on Attachment B, Maps 2 through 4 of the Siting Study located in Volume 2 of the Application.

Near the Abert Substation, Study Segment 1 runs parallel to a Colonial Gas pipeline and is south and parallel to the existing ROW for approximately one mile (Attachment B, Map 2). In Amherst County, Study Segment 1 minimizes constructability constraints with rebuilding the transmission line away from a Colonial Gas pipeline, which is located adjacent to the north side of the existing Big Island – Reusens 69-kV Transmission Line. A northern diversion is not practicable as it would introduce new crossings of the pipeline.

In Bedford County, Study Segment 2 is east and parallel to the existing ROW where it crosses a historic property and residential area along Fox Hill Road (Attachment B, Map 3). Study Segment 2 diverts east and is parallel to the existing ROW for about 0.2 miles to reduce the number of transmission structures on the historic property and minimize constructability constraints with the current pole locations at the road crossing location. A diversion to the western side of the existing ROW is not practicable due to the presence of a residence and the historic home.

North of the Reusens Substation, Study Segment 3 crosses Judith Creek within and near the existing ROW (Attachment B, Map 4). Study Segment 3 diverts north and south of the existing centerline (less than 50 feet) to minimize constructability constraints and

avoid new crossings of Judith Creek. A crossing of Judith Creek is unavoidable in order to reach the Company's Reusens Substation.

Q: DID THE COMPANY CONSIDER STAKEHOLDER AND PUBLIC INPUT DURING THE ROUTE DEVELOPMENT AND DATA COLLECTION PROCESS?

A: Yes. Stakeholder and public input are an important component of the route development process that the Company uses to gather information, develop and refine routes, and inform decisions.

Q: PLEASE DESCRIBE ANY STAKEHOLDER AND PUBLIC INPUT RECEIVED FOR THE PROJECT?

A. The Siting Team contacted and/or obtained information from various federal, state, and local agencies and/or officials to inform them of the Project and request input for the route development process.

On July 21, 2025, the Siting Team virtually met with local officials from Amherst and Bedford Counties and the City of Lynchburg to introduce the Project and review the existing transmission line to be rebuilt within or adjacent to the existing ROW. Also in July 2025, the Company announced the Project to the public and invited landowners to attend an in-person open house in August 2025 (as described previously). Following the in-person open house, the Company received 18 landowner comments mostly related to future construction and access of the transmission line to be rebuilt. The comment cards, emails, and phone call responses returned to the Company were entered into the Project GIS database and generally related to how the rebuilt transmission line would differ from the existing line and general Project information. Landowners also asked questions

regarding future construction and preference to utilize existing access roads where possible.

In a letter dated July 31, 2025, the Siting Team solicited input from 42 federal, state, and local agencies and/or officials regarding the Project and 11 responses were received. Copies of the agency letters, contact list, and correspondence are included in Attachment D to the Siting Study in Volume 2 of this Application.

Finally, the Company's ROW agents met with landowners in fall 2025 and winter 2026 to gather additional feedback, specifically where the Project diverts from the existing ROW.

Q: REGARDING THE VIRGINIA ENVIRONMENTAL JUSTICE ACT (§ 2.2-234 ET SEQ. OF THE CODE), DID THE SITING TEAM RESEARCH THE DEMOGRAPHICS OF THE COMMUNITIES SURROUNDING THE PROJECT?

A: Yes. The Siting Team reviewed demographic data from the American Community Survey ("ACS") from the United States Census Bureau ("USCB") and low-income community data from the Virginia EJScreen+ mapping program (2025). The Census Block Group ("CBG") data is the smallest geographic unit for which USCB demographic data is available and was used to review the Project. Per the ACS data, there are six CBGs located within one mile of the centerline of the Rebuild Route. These six CBGs are crossed by the Rebuild Route. Five of the six CBGs exceed the threshold of at least one "EJ community" as defined by the Act; however, the CBG with the greatest diversity of EJ Communities is not crossed by the Rebuild Route. Of these five CBGS that are crossed, two CBGs contain populations that identify as two or more races and one CBG contains a population of American Indian or Alaska Native. Two CBGs within one mile

of the centerline of the Rebuild Route contain populations that are considered low-income populations; however, only one is crossed by the Rebuild Route. The results of the dataset are further discussed in Section 5.3 and depicted in Attachment B, Map 7 of the Siting Study.

It is the Company's standard practice in its route development processes to avoid or reasonably minimize impacts on the human environment, which includes EJ and fenceline communities. The Proposed Route is mostly within the existing 100-foot-wide ROW in these communities. Relocating the Project from its current location would result in new impacts on other communities. The Project is not anticipated to have a disproportionately high or adverse impact on EJ communities, as defined in the Virginia Environmental Justice Act (§ 2.2-234 et seq. of the Code).

Q: HAS THE COMPANY ENGAGED, AND WILL IT CONTINUE TO ENGAGE, THE ENVIRONMENTAL JUSTICE COMMUNITIES AND OTHERS AFFECTED BY THE PROPOSED PROJECT IN A MANNER THAT ALLOWS THEM TO MEANINGFULLY PARTICIPATE IN THE PROJECT?

A: Yes. The Company undertook multiple activities to encourage the meaningful engagement of all communities affected by the Project, including EJ communities, as mentioned above. To continue providing the opportunity for meaningful involvement, the Company's ROW agents have begun contacting landowners crossed by the Proposed Route, and specifically for locations where new ROW is needed. The Company will continue to engage and communicate with community members affected by the Project throughout the duration of the Project.

Q: DESCRIBE THE REFINEMENTS MADE TO THE STUDY SEGMENTS AS A RESULT OF ANY PUBLIC FEEDBACK.

A: As a result of the in-person open house and meetings with affected landowners, the three Study Segments were refined to minimize impacts on properties, including a historic property, and incorporate constructability concerns. As discussed in the testimony of Company Witness Hurst, the Company's ROW agents also met with five landowners whose properties are crossed by the Proposed Route where new ROW is proposed (in total, approximately 7.2 acres of new ROW).

As a result of these meetings, conducted in fall 2025 and winter 2026, the three Study Segments were refined to utilize more of the existing ROW, which limit new tree clearing on the private properties and minimize impacts on nearby residences and a stream (Judith Creek).

Q: PLEASE DESCRIBE THE PROPOSED ROUTE.

A: The Proposed Route for the Project is approximately 4.4 miles long between the Company's Abert Substation in Amherst County and the Reusens Substation in the City of Lynchburg. The Proposed Route is further described in Section III of the Response to Guidelines and depicted in Exhibit 2.

Approximately 3.9 miles of the Proposed Route will be rebuilt on the existing ROW of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations (or about 89% of the total length of the Proposed Route). For approximately 1.5 miles, the Proposed Route includes three diversions from the existing centerline within or near the existing ROW in order to minimize impacts on a pipeline, historic property, and stream. In total, it is anticipated that approximately 7.2 acres of new ROW

will be required at these three locations. The first diversion occurs near the Abert Substation in which the Proposed Route diverts south of the existing centerline between proposed structures 432-23A and 342-20A to minimize impacts on a gas pipeline, totaling approximately 5.6 acres of new ROW. The second diversion occurs at Fox Hill Road between proposed structures 432-10A and 342-8A to minimize impacts on a historic property and construction challenges associated with the current pole locations, totaling approximately 0.2 acres of new ROW. The third diversion occurs near Judith Creek between proposed structures 432-6A and 432-3A to minimize constructability constraints and avoid new crossings of Judith Creek, totaling approximately 1.4 acres of new ROW.

Q: PLEASE DESCRIBE TO THE COMMISSION THE FILING CORRIDOR USED FOR THE PROPOSED ROUTE?

A: The approximately 100-foot-wide ROW of the Proposed Route will generally be sited within an approximately 200- to 300-foot-wide SCC filing corridor. Based on its preliminary engineering analysis to date, the Company believes that the Proposed Route is the most suitable centerline for the Project. However, the Company needs the flexibility to shift the centerline less than 50 feet in either direction in two locations where the Proposed Route diverts slightly from the existing centerline and 50 feet in either direction in one location where the Proposed Route is generally parallel to the existing transmission line on new ROW. The Filing Corridor for the Project is depicted in Exhibit 2.

The first corridor expansion occurs near the Abert Substation between proposed structures 432-23A and 432-20A in Amherst County (see Maps 1 to 3 in Exhibit 2). The

existing ROW is parallel to a Colonial Gas pipeline so the Filing Corridor encompasses an approximately 300-foot-wide area to allow for the flexibility to shift the proposed centerline 50 feet in either direction.

The second corridor expansion occurs at Fox Hill Road between proposed structures 432-10A and 432-8A in Bedford County (see Map 6 in Exhibit 2). The existing ROW crosses a National Register of Historic Places ("NRHP")-listed property, the Bowling Eldridge House (see Attachment 2.I.1 of the VDEQ Supplement in Volume 2 of the Application). The Filing Corridor encompasses an approximately 200-foot-wide area to allow for the flexibility to shift the proposed centerline no more than 50 feet in either direction in order to minimize the number of rebuilt structures on the historic property and minimize constructability constraints with the current pole locations.

The third corridor expansion is near Judith Creek between proposed structures 432-6A and 432-3A in Bedford County and the City of Lynchburg (see Maps 6 and 7 in Exhibit 2). The Filing Corridor encompasses an approximately 200-foot-wide area to allow for the flexibility to shift the proposed centerline no more than 50 feet in either direction in order to minimize constructability constraints around Judith Creek.

The final line route and structure locations will be determined after additional studies including, but not limited to, ground surveys, geotechnical and environmental studies, and additional interviews with landowners are completed.

Q: ARE THERE ANY CONSERVATION EASEMENTS OR LANDS CROSSED BY THE PROJECT?

A: No.

Q: ARE THERE ANY PUBLIC LANDS CROSSED BY THE PROJECT?

A: No.

Q: PLEASE DESCRIBE THE IMPACTS OF THE PROJECT TO CULTURAL AND HISTORIC RESOURCES.

A: In March 2026, ERM completed a Stage 1 Pre-Application Analysis ("Pre-App") for Cultural Resources in accordance with the Virginia Department of Historic Resources' ("VHDR") "Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia" (2008). A field reconnaissance was conducted in January 2026 for each previously recorded historic resource that meets the criteria in the Guidelines. A copy of the Pre-App is provided as Attachment 2.I.1 of the VDEQ Supplement, located in Volume 2 of the Application.

Eight aboveground historic resources fall within the VDHR study tiers for the Proposed Route. There are three NRHP-listed architectural sites within 1.0 miles of the Proposed Route: Hope Dawn (VDHR# 009-0043); Virginia Episcopal School (VDHR# 118-0224); and Presbyterian Orphans Home (VDHR# 118-5240). There are two NRHP-eligible architectural sites within 0.5 miles of the Proposed Route: Reusens Dam (VDHR# 118-0218) and CSX Railroad (VDHR# 118-5546). There is one NRHP-listed architectural site, the Bowling Eldridge House (VDHR# 009-5283), crossed by the Proposed Route. Lastly, there are two locally significant resources crossed by the Proposed Route, the Buckley House (VDHR# 118-5717) and Bethel/Salt Creek (VDHR# 005-5336). No archaeological resources were identified adjacent to or within the Proposed Route ROW. The Proposed Route would have no impact on five resources (009-0043, 118-0218, 118-

0224, 118-5240, and 118-5546) and no more than a minimal impact on three resources (005-5336, 009-5283, and 118-5717). Final assessments of Project impacts will be dependent on the completion of identification-phase archaeological and historic structure surveys along the route selected by the SCC followed by review of survey results by VDHR and other consulting parties.

Q. DESCRIBE THE POTENTIAL VISUAL IMPACTS OF THE PROJECT.

A. Between the existing Abert and Reusens Substations, the Big Island – Reusens 69-kV Transmission Line is comprised of a series of wooden, H-frame structures that are routed primarily through dense forest vegetation. The Project would replace the existing wooden structures with dulled galvanized steel structures. The form and lines of the proposed steel H-frame structures are expected to be similar to the existing structures. While there may be a slight change in color, the metallic gray of the proposed dulled galvanized steel structures would primarily be analogous to the matte, light brown color of the existing structures. Except in three locations, the Proposed Route will be constructed within the existing 100-foot-wide maintained ROW.

In general, the proposed single-circuit steel H-frames will replace single-circuit wood H-frames near the same location along the majority of the Proposed Route. As detailed in the testimony of Company Witness Woody, the proposed structures are on average approximately 20 feet taller than the existing structures. Overall, replacing the existing infrastructure with similar but new infrastructure primarily within the existing ROW would help decrease the potential for increased visibility and related changes in the visual characteristics along and in the vicinity of the route. Visual simulations of the Project at two key locations are provided in Exhibit 11 of the Application.

Q: IS IT ANTICIPATED THAT THE PROJECT WOULD AFFECT ANY FEDERALLY OR STATE PROTECTED SPECIES?

A: No. ERM prepared the VDEQ Supplement to facilitate review and analysis of the Project by the VDEQ and other relevant agencies. Section 2.K of the VDEQ Supplement addresses impacts on wildlife resources, including federally or state protected species. Based on the available data, it is anticipated that the Project will not result in significant impacts on any protected species given the Proposed Route is in or near the existing ROW.

Where applicable, habitat assessments and/or species-specific surveys will be conducted prior to construction of the Project to identify, avoid, and/or mitigate to the extent practical potential impacts on federally or state protected species. During detailed engineering, the Company will coordinate with applicable federal and state agencies to determine appropriate surveys.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes.

SECTION I. NECESSITY FOR THE PROPOSED PROJECT

A. State the primary justification for the proposed project (for example, the most critical contingency violation including the first year and season in which the violation occurs). In addition, identify each transmission planning standard(s) (of the Applicant, regional transmission organization ("RTO"), or North American Electric Reliability Corporation) projected to be violated absent construction of the facility.

Response:

Appalachian Power Company ("Appalachian" or "Company"), an affiliate of American Electric Power Company, Inc. ("AEP"), adheres to the transmission reliability criteria defined in AEP's Federal Energy Regulatory Commission ("FERC") Form 715 filing (the "AEP Criteria"), which include the contingency categories defined in North American Electric Reliability Corporation ("NERC") Reliability Standard TPL-001-4. AEP is a member of the RTO PJM Interconnection LLC ("PJM"). To ensure that the regional transmission system owned by its members can reliably meet the projected demand of the customers served by that system, PJM conducts an ongoing Regional Transmission Expansion Plan ("RTEP") study process. RTEP studies are conducted on a five-year-out, "top-down" basis and involve an exhaustive review of all PJM bulk electric system facilities (including AEP's transmission facilities of 138-kilovolt ["kV"] and greater) for compliance with applicable reliability criteria. AEP also conducts an exhaustive parallel, "bottom-up" assessment of its entire transmission system (including sub-138-kV facilities) using PJM's RTEP models to ensure that its system continues to comply with the AEP Criteria under projected future conditions.

The proposed Abert – Reusens Transmission Improvements Project is needed to support the Abert Load Area of Virginia, as shown on **Figure I-1**, in addition to other loads served from other substations in Amherst, Bedford, and Campbell Counties, Virginia. Today, the 69-kV network in the Abert Load Area is ultimately sourced from the Reusens and South Lynchburg 138-kV Substations and the Skimmer 115-kV Substation. Under certain contingency scenarios, the Company can lose two of these three sources to the area, which leaves the 69-kV network in a radial configuration, resulting in thermal overload violations.

Using the 2028 summer case developed by PJM in the 2023 RTEP, the Company's assessment identified a thermal violation of the AEP Criteria on a section of the Big Island – Reusens 69-kV Transmission Line, between the existing Abert and Reusens Substations, under certain N-1-1 contingencies in the Abert Load Area. The violations occur on facilities serving the Company's customers located in the Abert Load Area (approximately 55 megawatts ["MW"] historical summer peak and approximately 67 MW historical winter peak), which encompasses portions of Amherst and Bedford Counties and the City of Lynchburg.

Figure I-1
Abert Load Area
(Current System Configuration)

The N-1-1 contingency scenario involves the loss of the South Lynchburg – Skimmer 69-kV Circuit on the Big Island – South Lynchburg 69-kV Transmission Line and the 115/69-kV transformers at the Skimmer Substation, which causes a thermal violation on the section of the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations.

The foregoing contingency scenario and resulting violation of the AEP Criteria are described in more detail in **Section I.D**. To address the criteria violations and certain asset health needs, the Company is seeking approval for the following improvements (collectively, the "Project") from the Virginia State Corporation Commission ("SCC"):

- Rebuild approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the Company's existing Abert and Reusens Substations; and

- Upgrade the existing Abert Substation, which includes the replacement of two 69-kV motor-operated air break ("MOAB") switches and the 69-kV circuit switcher on the capacitor bank.

The Project is necessary to comply with the reliability standards as defined in the AEP Criteria, which include the contingency categories defined in NERC Reliability Standard TPL-001-4, and to maintain reliable service in the Abert Load Area. Refer to **Section I.J** for the baseline and supplemental components of the Project.

B. Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.). Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed. Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service. Provide a list of those facilities that are not yet in service.

Response:

The Project is required to address the reliability criteria violations as detailed in **Sections I.A** and **I.D** of this Response to Guidelines. Reliability criteria violations are identified through the PJM RTEP process, which is governed by PJM Manual 14b and AEP's transmission planning requirements, as defined in AEP's FERC Form 715 Part 4. The PJM manual describes the base case building procedure used to develop load flow models where the reliability criteria violations were identified. This procedure includes all known projects at the time of the base case build for the entire PJM region, including any such projects located in the Abert Load Area.

As of the filing date of this Application, there are no future projects in the Abert Load Area that need to be included in the base case used to identify the reliability criteria violations detailed in **Sections I.A** and **I.D** of this Response to Guidelines. The Project is located in the southeastern part of Appalachian's service territory and encompasses the Company's transmission facilities serving the Abert Load Area, which includes commercial and residential loads in portions of Amherst and Bedford Counties and the City of Lynchburg. The Project addresses the identified baseline need, which includes the need to increase the capacity of the Big Island – Reusens 69-kV Transmission Line between the existing Abert and Reusens Substations.

C. Describe the present system and detail how the proposed project will effectively satisfy present and projected future electrical load demand requirements. Provide pertinent growth data (at least five years of historical summer and winter peak demands and ten years of projected summer and winter peak loads where applicable). Provide all assumptions inherent within the projected data and describe why the existing system cannot adequately serve the needs of the Applicant (if that is the case). Indicate the date by which the existing system is projected to be inadequate.

Response:

The present-day transmission system within the Abert Load Area depends on the Abert 69-kV Substation and the Skimmer 115-kV Substation (partially fed through another utility interconnect). These substations are supported by two primary 138-kV sources at the Reusens and South Lynchburg Substations. The N-1-1 contingency scenarios result in losing the 115-kV transformers at the Skimmer Substation and the Skimmer – South Lynchburg 69-kV Circuit, which feeds into the Skimmer Substation. Under this contingency scenario, the load served out of the Skimmer and Abert Substations would be placed on a radial feed and forced to be served from the 69-kV network from the Reusens Substation. This causes a significant amount of power to flow from the Reusens 138/69-kV transformer through the 69-kV network in order to serve the load at the Abert and Skimmer Substations, thus resulting in a thermal violation on a section of the Big Island – Reusens 69-kV Transmission Line. Rebuilding the 69-kV line between the Company's existing Abert and Reusens Substations will increase the capacity and eliminate the reliability criteria violations for the facilities under the projected future load conditions (see **Figure I-2** for the section of the Big Island – Reusens 69-kV Transmission Line and **Confidential Exhibit 9-C** for the one-line diagram of the Abert Substation).

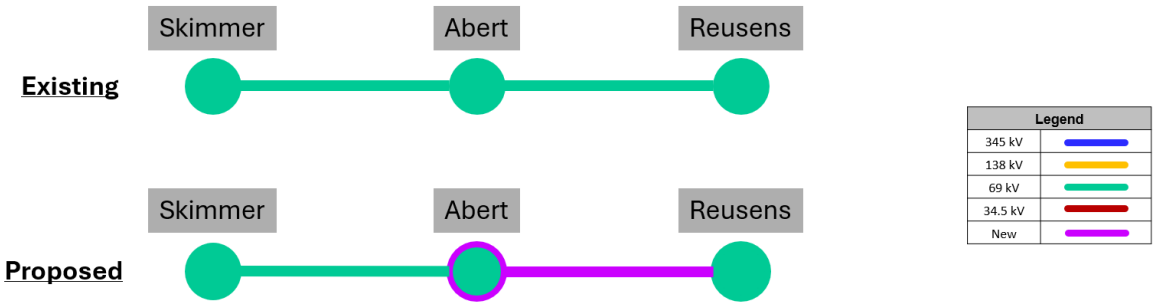


Figure I-2
Existing and Proposed Circuit Configurations
at the Abert, Reusens, and Skimmer Substations

AEP developed a load forecast for the Abert Load Area using an econometric model that forecasts peak demand. This model had explanatory variables for the real personal income per capita product for the Abert Statistical Area; the combined, minimum, and

maximum temperatures on the day of the peak; and binary variables. The Abert Load Area is winter peaking. The model used historical data from the winter of 2015/2016 through the summer of 2025. Real personal income and population forecast data were obtained from Moody's Analytics. AEP developed forecasts of maximum and minimum temperatures on the day of the peak from an average of historical temperatures.

Tables I-1 and **I-2** and **Figures I-3** and **I-4** show historical and projected summer and winter peak loads for the Abert Load Area. These figures show the actual summer and winter peak loads for the previous 10 years and the projected summer and winter peak loads for the next 10 years.

Abert Load Area

	Actual Peak Load (MW)										Projected Peak Load (MW)									
Summer	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Peak	54.9	53.9	53.8	54.3	54.7	53.4	53.3	53.5	52.2	53.5	54.3	54.4	54.5	54.6	54.7	54.8	54.9	55.0	55.1	55.2

Table I-1
Historical and Forecasted Summer Peak Load Data

Abert Load Area

	Actual Peak Load (MW)										Projected Peak Load (MW)									
Winter	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Peak	61.3	65.4	65.6	66.1	65.9	65.9	66.5	66.5	67.1	58.9	66.2	66.3	66.5	66.6	66.7	66.9	67.0	67.1	67.2	67.3

Table I-2
Historical and Forecasted Winter Peak Load Data

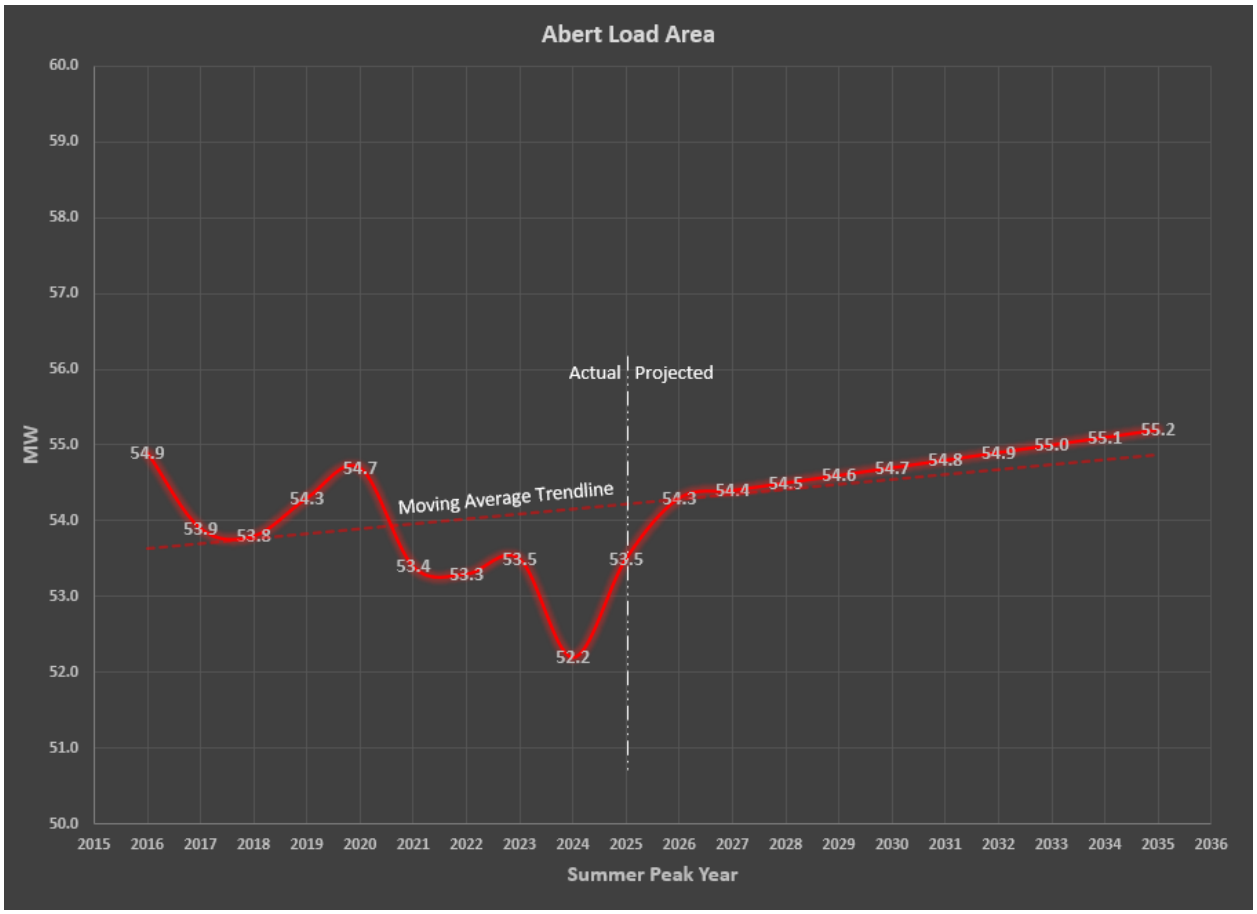


Figure I-3
Abert Load Area
Historical and Forecasted Summer Peak Load Data

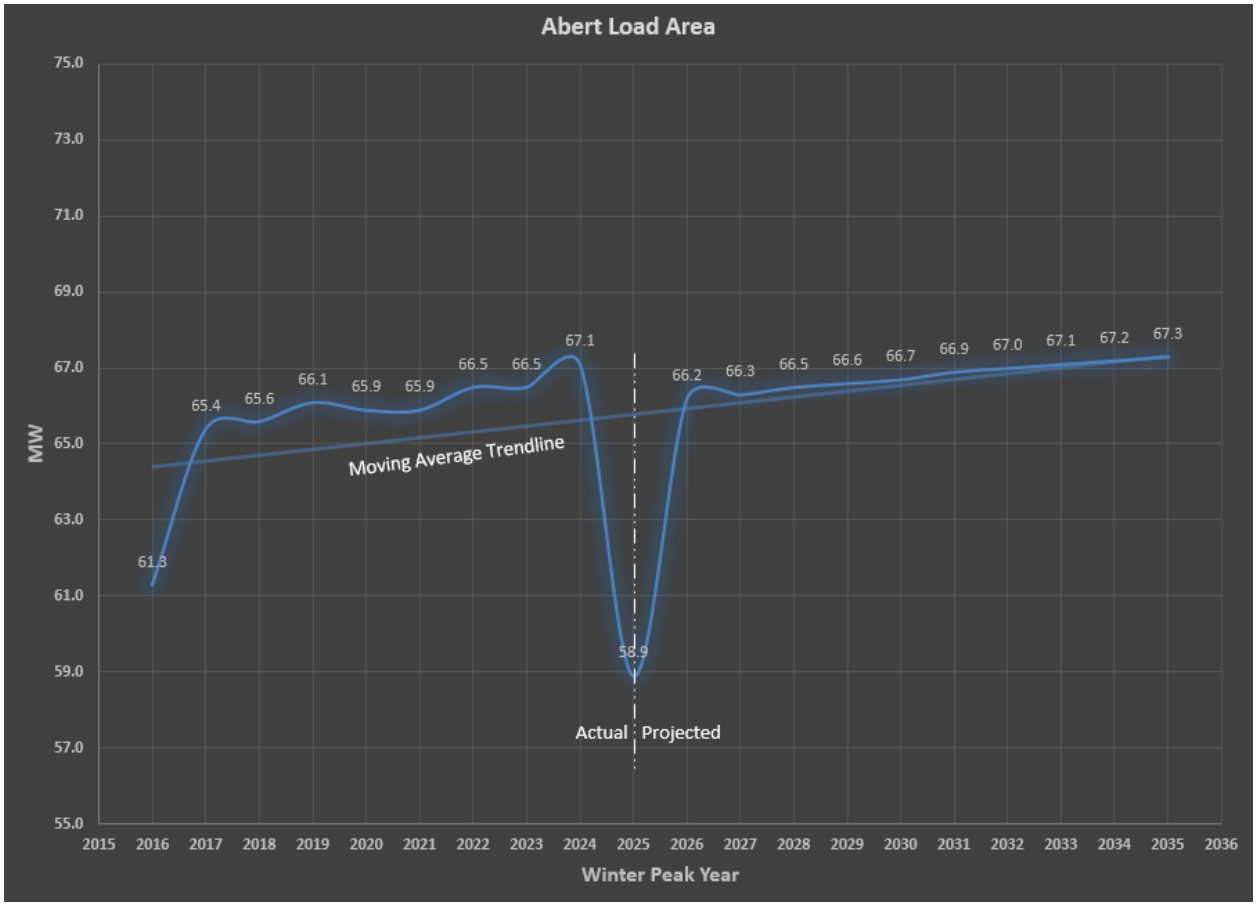


Figure I-4
Abert Load Area
Historical and Forecasted Winter Peak Load Data

Beginning in 2026, the Abert Load Area summer and winter peak demands are anticipated to grow at an average annual rate of approximately 1.4% and 1.0%, respectively, over the course of the next 10 years.

D. If power flow modeling indicates that the existing system is, or will at some future time be, inadequate under certain contingency situations, provide a list of all these contingencies and the associated violations. Describe the critical contingencies including the affected elements and the year and season when the violation(s) is first noted in the planning studies. Provide the applicable computer screenshots of single-line diagrams from power flow simulations depicting the circuits and substations experiencing thermal overloads and voltage violations during the critical contingencies described above.

Response:

Using the 2028 summer case developed by PJM in the 2023 RTEP, the Company's assessment identified thermal violations of the AEP Criteria on a section of the Big Island – Reusens 69-kV Transmission Line, as shown on **Figure I-1**. The N-1-1 contingency

scenario in the 2028 summer RTEP case involves the loss of the Skimmer – South Lynchburg 69-kV Circuit on the Big Island – South Lynchburg 69-kV Transmission Line and the 115/69-kV transformers at the Skimmer Substation, which causes a thermal violation on the section of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations.

E. Describe the feasible project alternatives, if any, considered for meeting the identified need including any associated studies conducted by the Applicant or analysis provided to the RTO. Explain why each alternative was rejected.

Response:

The Company identified an alternative solution to address the identified reliability criteria violations. The Project Alternative included reconductoring approximately 4.4 miles of the Big Island – Reusens 69-kV Transmission Line between the existing Abert and Reusens Substations instead of rebuilding it. The Project Alternative is infeasible because the Project requires the installation of a heavier conductor size, thus compromising the ability to meet clearance requirements due to conductor sag and structural issues (see **Section II.B.2**). Reconductoring the existing line would not address the replacement of aging wooden structures from the 1960s in which open structural conditions are present along the line. At the time of this filing, there are 11 existing structures with at least one open structural condition, or about 41% of the total structures on the section of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations. In total, there are 18 open structural conditions on 11 existing structures, which include rot top on crossarm and poles (7); woodpecker damage on poles (5); damaged crossarm and poles (3); split crossarm and poles (2); and corroded crossarm causes (1).

F. Describe 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.

Response:

The Project involves rebuilding (and replacing) an approximately 4.4-mile-long section of the Company's existing Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations. The proposed rebuild is composed of the Reusens – Skimmer 69-kV Circuit. After rebuilding the section of the Big Island – Reusens 69-kV Transmission Line, the resulting Summer Normal / Summer Emergency / Winter Normal / Winter Emergency ratings in megavolt ampere ("MVA") will be 82/90/107/113 MVA. There will be no lines removed as a result of the Project.

G. Provide a system map, in color and of suitable scale, showing the location and voltage of the Applicant's transmission lines, substations, generating facilities, etc., that would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly label on this map all points referenced in the necessity statement.

Response:

See **Exhibit 1**.

H. Provide the desired in-service date of the proposed project and the estimated construction time.

Response:

The desired in-service date of the proposed Project is June 1, 2029, with an estimated construction time of approximately one year. A detailed description of the construction sequence and duration is provided in **Section II.B.10** of this Response to Guidelines.

I. Provide the estimated total cost of the project as well as total transmission-related costs and total substation-related costs. Provide the total estimated cost for each feasible alternative considered. Identify and describe the cost classification (e.g., "conceptual cost," "detailed cost") for each cost provided.

Response:

Functional estimated substation-related cost is approximately $3.9 million.

Functional estimated transmission-related cost is approximately $15.8 million.

Estimated total cost of the Project is approximately $19.7 million.

J. If the proposed project has been approved by the RTO, provide the line number, regional transmission expansion plan number, cost responsibility assignments, and cost allocation methodology. State whether the proposed project is considered to be a baseline or supplemental project.

Response:

Rebuilding the section of the Big Island – Reusens 69-kV Transmission Line between the Abert and Reusens Substations is a baseline project and has been assigned PJM project number b3786.1. The upgrades at the Company's existing Abert Substation are supplemental work and were presented to PJM on November 14, 2025.

K. If the need for the proposed project is due in part to reliability issues and the proposed project is a rebuild of an existing transmission line(s), provide five years of outage history for the line(s), including for each outage the cause, duration and number of customers affected. Include a summary of the average annual number and duration of outages. Provide the average annual number and duration of

outages on all Applicant circuits of the same voltage, as well as the total number of such circuits. In addition to outage history, provide five years of maintenance history on the line(s) to be rebuilt including a description of the work performed as well as the cost to complete the maintenance. Describe any system work already undertaken to address this outage history.

Response:

The need for the Project is not driven by outage history, but rather by the need to address the overloading issues. See **Sections I.A** and **I.C**.

L. If the need for the proposed project is due in part to deterioration of structures and associated equipment, provide representative photographs and inspection records detailing their condition.

Response:

The Project proposes to rebuild a section of the Big Island – Reusens 69-kV Transmission Line to address the overloading issues and the open structural conditions. At the time of this filing, there are 11 existing structures with at least one open structural condition, or about 41% of the total structures on the section of the Big Island – Reusens 69-kV Transmission Line to be rebuilt. In total, there are 18 open structural conditions on the 11 existing structures, which include rot top on crossarm and poles (7); woodpecker damage on poles (5); damaged crossarm and poles (3); split crossarm and poles (2); and corroded crossarm causes (1).

See **Figures I-5** to **I-10** showing representative photographs depicting the condition of the existing 69-kV transmission line section to be rebuilt between Abert and Reusens Substations.

Figure I-5: Big Island-Reusens 69-kV Line Structure 432-16: Multiple Pole Cavities and Pole Splitting

Figure I-6: Big Island-Reusens 69-kV Line Structure 432-18: Multiple Pole Cavities and Pole Splitting

Figure I-7: Big Island-Reusens 69-kV Line Structure 432-18: Woodpecker Holes

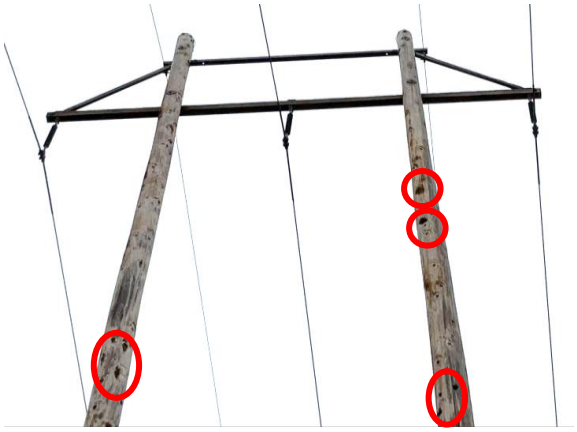


Figure I-8: Big Island-Reusens 69-kV Line Structure 432-12: Woodpecker Holes

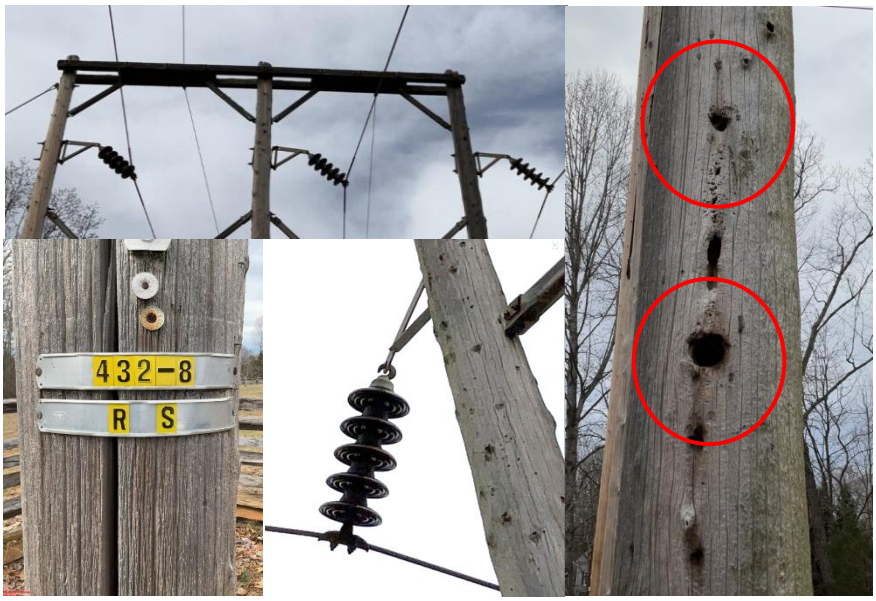


Figure I-9: Big Island-Reusens 69-kV Line Structure 432-8: Woodpecker damage on pole, signs of cracking, weathering on crossarm, inside arms are rotting, deterioration on insulators and hardware

Figure I-10: Big Island-Reusens 69-kV Line Structure 432-20:
Weathered and bowing crossarm, woodpecker and insect damage on poles, rot on crossarm, large crack on left pole from bolt hole to end of the arm, structure is weathered and cracked, aging crossarm and brace bolts, moderate deterioration on insulators and hardware

M. In addition to all other information required by these guidelines, applications for approval to construct facilities and transmission lines inter-connecting a Non-Utility Generator ("NUG") and a utility shall include the following information.

1. The full name of the NUG as it appears in its contract with the utility and the dates of the initial contract and any amendments;

2. A description of the arrangements for financing the facilities, including information on the allocation of costs between the utility and the NUG;

3. (a) For Qualifying Facilities ("QFs") certificated by FERC order, provide the QF or docket number, the dates of all certification or recertification orders, and the citation to FERC Reports, if available;

(b) For self-certified QFs, provide a copy of the notice filed with the FERC;

4. In addition to the information required in 3a or 3b, provide the project number and project name used by the FERC in licensing hydro-electric projects, also provide the dates of all orders and citations to FERC Reports, if available; and

5. If the name provided in 1 above differs from the name provided in 3 above, give a full explanation.

Response:

Not applicable.

N. Describe 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.

Response:

No new substations, switching stations, or other facilities are being proposed as part of this Project.

SECTION II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-Way ("ROW")

1. Provide the length of the proposed corridor and viable alternatives.

Response:

The Proposed Route for the Project is approximately 4.4 miles long between the Company's Abert Substation in Amherst County and the Reusens Substation in the City of Lynchburg. The Proposed Route will rebuild a section of the Big Island – Reusens 69-kV Transmission Line in or near the existing 100-foot-wide ROW. The Proposed Route includes three minor diversions from the existing centerline to minimize constructability challenges or avoid constraints.

Abandoning the existing ROW for a new greenfield route, which would introduce new impacts, is neither practical nor necessary; therefore, no viable alternative routes were identified that would address the needs of the Project, as well as minimize impacts on the human and natural environments. The Project will rebuild the transmission line in or near the existing transmission line ROW, as described in **Section II.A.9** and in the Rebuild Siting Study for the Abert – Reusens Transmission Improvements Project ("Siting Study") in Volume 2 of the Application.

2. Provide color maps of suitable scale (including both general location mapping and more detailed GIS-based constraints mapping) showing the route of the proposed line and its relation to: the facilities of other public utilities that could influence the route selection, highways, streets, parks and recreational areas, scenic and historic areas, open space and conservation easements, schools, convalescent centers, churches, hospitals, burial grounds/cemeteries, airports and other notable structures close to the proposed project. Indicate the existing linear utility facilities that the line is proposed to parallel, such as electric transmission lines, natural gas transmission lines, pipelines, highways, and railroads. Indicate any existing transmission ROW sections that are to be quitclaimed or otherwise relinquished. Additionally, identify the manner in which the Applicant will make available to interested persons, including state and local governmental entities, the digital GIS shape file for the route of the proposed line.

Response:

Detailed geographic information system ("GIS")-based constraints mapping illustrating the Project in relation to existing facilities, various resources, and sensitive features is provided as **Exhibit 2**. Furthermore, the Siting Study located in Volume 2 of the Company's Application includes additional maps and descriptions of the Project's study area. A shapefile of the Proposed Route will be provided electronically to the SCC, along with the Application.

In locations where the Proposed Route will be rebuilt on new ROW (approximately 0.5

miles), it is anticipated that the unused portion of the existing ROW will be relinquished as part of a supplemental agreement with the landowner.

3. Provide a separate color map of a suitable scale showing all the Applicant's transmission line ROWs, either existing or proposed, in the vicinity of the proposed project.

Response:

See **Exhibit 1**.

4. To the extent the proposed route is not entirely within existing ROW, explain why existing ROW cannot adequately service the needs of the Applicant.

Response:

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. The Proposed Route is located outside the existing ROW for approximately 0.5 miles as depicted in **Exhibit 2**.

The Proposed Route includes three diversions from the existing centerline (totaling approximately 7.2 acres of new ROW) to minimize constructability challenges or avoid constraints. The first diversion is east of the Abert Substation where the Proposed Route diverts to the south of the existing centerline for approximately 0.8 miles, mostly on new ROW, between proposed structures 432-23A and 432-20A (see **Map 1** in **Exhibit 2**). At this location, the Proposed Route crosses the same properties already crossed by the existing 69-kV transmission line and relocates transmission structures south and away from an existing Columbia Gas pipeline. The second diversion occurs at Fox Hill Road in Bedford County between proposed structures 432-9A and 432-8A (see **Map 6** in **Exhibit 2**). The ROW of the Proposed Route is shifted slightly to the east for approximately 0.1 miles in order to eliminate a transmission structure on a historic property, the Bowling Eldridge House (see **Section III.G**), and minimize constructability challenges at the road crossing. Lastly, the third diversion is between proposed structures 432-6A and 432-3A where the Proposed Route is within or near the existing ROW for approximately 0.6 miles in order to minimize constructability constraints and impacts on Judith Creek (see **Maps 6** and **7** in **Exhibit 2**).

The Company's ROW agents have spoken with and/or met with each landowner crossed by the diversions to discuss the Proposed Route and new or supplemental easements that may be needed. See the testimony of Company Witness Hurst.

5. Provide drawings of the ROW cross section showing typical transmission line structure placements referenced to the edge of the ROW. These drawings should include:

a) ROW width for each cross section drawing;

b) Lateral distance between the conductors and edge of ROW;

c) Existing utility facilities on the ROW; and

d) For lines being rebuilt in existing ROW, provide all of the above (i) as it currently exists, and (ii) as it will exist at the conclusion of the proposed project.

Response:

See **Exhibits 3** through **5** for the typical existing ROW cross sections.

See **Exhibits 6** through **8** for the proposed ROW cross sections.

6. Detail what portions of the ROW are subject to existing easements and over what portions new easements will be needed.

Response:

The portions of the Proposed Route that are subject to existing or supplemental easements and those where new easements will be required are:

- Between proposed structures 432-26A and 432-24A (the Abert Substation parcel) and proposed structure 432-1C and the Reusens Substation, the Project will be constructed on Company-owned property, and no new easements are needed.

- Between proposed structures 432-24A and 432-1C, the Company plans to supplement the existing easements or obtain new easements unless the existing easements allow for the relocation of the transmission line.

The Project will mostly use the existing 100-foot-wide ROW in areas of new, supplemental, or existing easements. No new properties are crossed where new ROW is proposed (approximately 7.2 acres).

7. Detail the proposed ROW clearing methods to be used and the ROW restoration and maintenance practices planned for the proposed project.

Response:

The following are the Company's typical transmission line ROW clearing, restoration, and maintenance practices. Case-by-case exceptions are considered to address sensitive environmental areas/features and/or property owner requests while maintaining Company and National Electrical Safety Code ("NESC") safety clearances and complying with NERC requirements.

ROW Clearing

a. In areas with 125 feet or more vertical (conductor-to-ground) design clearance, the ROW is typically not cleared, except in the following instances:

- Trees with less than 25 feet of clearance from the conductor (at maximum sag conditions) will be removed;
- Where a conductor stringing path is specified; and
- Where wire setup areas and other work areas are required.

b. In locations with less than 125-foot vertical clearance from the conductor (at maximum sag conditions) to ground, all woody-stemmed vegetation will be removed to the appropriate ROW width, leaving the cleared area of the ROW populated with grasses and herbaceous growth.

c. Cutting vegetation will be done by either manual or mechanical methods. Worker safety is first and foremost in determining a method; land use and landowner preference may influence the method utilized. Factors influencing safety include terrain, access, tree height, etc. Manual clearing involves the use of contract personnel using chainsaws to cut vegetation. Mechanical clearing includes mowers, feller-bunchers, and other heavy operator-run equipment. Mechanical pruning operations employ a variety of configurations of boom-mounted saws mounted on vehicles capable of traversing the ROW. In very difficult terrain or inaccessible areas (i.e., high safety-risk areas), an aerial saw may be employed for side-trimming the ROW.

d. Where reasonable and practical, the Company will utilize selective clearing methods to retain low-growth shrubs and herbaceous vegetation within:

- 50 feet of all year-round streams, ponds, or wetlands and will undertake erosion control measures where necessary;
- 50 feet of road crossings; and
- 25 feet of karst features and outcrops of limestone or dolomite rock.

e. Trees will be felled in a manner to minimize damage to crops, fences, and other facilities.

f. Where tree pruning is required, standards established by the International Society of Arboriculture, the American Standards Institute, and the Tree Care Industry Association will be used together with best management practices.

g. Logs, including fallen timber, may be left in tree lengths, log lengths, or as otherwise designated by the property owner. The property owner will retain ownership of all logs and may dispose of them by commercial sale, use them as

firewood, or provide them for use as firewood by others. If the property owner does not want to retain ownership and wants the logs removed, the Company will dispose of them in a suitable location.

h. Where possible, the disposal by the Company of all trees, brush, and slash will be consistent with property owner preferences, wildlife values, and particular site conditions. Typical disposal methods consist of one or more of the following:

- Windrowing—the cut material will be laid in parallel rows along either or both sides of the ROW. This is the preferred method where slopes are 30% or less.

- Chipping—woody vegetation will be chipped and either scattered over the ROW area or disposed of in a suitable location. Logs will be windrowed (i.e., laid in parallel rows) on either or both sides of the ROW, as designated. The ROW must be accessible to chipping equipment for this option to be viable.

- Let Lie—the cut material will be left in a scattered manner over the ROW area. This is recommended where slopes exceed 30% to reduce erosion and otherwise minimize impact on soils. All woody vegetation will be lopped and scattered so that it lays as close to the ground as practical, not to exceed 2 feet in height. This will accelerate the decomposition of this material and will improve the aesthetic impact by allowing more rapid vegetation coverage of the cut material.

i. All clearing debris will be kept out of streams, ponds, and other water areas, wetlands, pastures, and fields.

<u>ROW Restoration</u>

a. Where stream banks are disturbed, they will be restored (i.e., by planting herbaceous vegetation, where necessary) to prevent bank erosion.

b. The Company will take measures to drain and stabilize the surfaces of all construction roads during the construction and future line maintenance phases.

c. Restoration, including temporary and permanent seeding, will be coordinated with the construction activities to ensure that revegetation and soil stabilization are achieved at the earliest practical time. Following construction, all structure sites, construction / wire stringing sites, and access roads will be seeded with a suitable grass seed mixture.

d. Revegetation techniques will, where possible, seek to enhance the ROW for wildlife food and habitat.

e. Qualified personnel will perform all permanent reseeding and revegetation.

f. Fences and gates will be kept in sufficient state of repair to confine livestock satisfactorily, and gates will be kept closed when not in immediate use. All fences cut or damaged will be restored to a condition as good as, or better than, the condition as found. Where frequent access is required, gates will be installed at no cost to the property owner.

ROW Maintenance

a. All herbicides used will be applied in accordance with applicable state and federal laws and regulations.

b. All herbicides used shall be registered with the U.S. Environmental Protection Agency ("USEPA") and the Virginia Department of Agriculture and Consumer Services. Herbicides will be used in accordance with label and manufacturer directions.

c. All herbicide applications will be performed under the direct supervision of certified applicators.

d. Regarding herbicide applications:

- Herbicides will not be applied when rainfall is imminent, during rainfall, or within one day of large rain events (usually greater than 1 centimeter) that result in soil moisture capacity occurring above field capacity.

- Buffer zones will be maintained and used in accordance with herbicide label and manufacturer directions around streams, ponds, springs, wetlands, water supply wells, channelized drainage ways (e.g., perennial or intermittent), and karst features.

Long-term ROW Maintenance Plan

The Company will implement a comprehensive vegetation management program designed to ensure that vegetation along each transmission line is managed at the proper time and in the most cost-effective, environmentally sound manner. The plan will be reviewed periodically to ensure that the goals and objectives are addressed.

8. Indicate the permitted uses of the proposed ROW by the easement landowner and the Applicant.

Response:

Within the existing, new, and/or supplemental transmission line easements, the property owner will generally retain the right to use the easement area for grazing, pasture lands,

gardens, cultivated fields, driveways, parking, and bike and walking paths, or any other use that is consistent with the Company's right to construct, operate, maintain, access, or remove its electric transmission line. The Company retains the right to clear and keep the easement clear of buildings and/or other obstructions together with the right to clear any woody vegetation within or adjacent to the ROW, but that may endanger the safe operation of the electric transmission line.

9. Describe the Applicant's route selection procedures. Detail the feasible alternative routes considered. For each such route, provide the estimated cost and identify and describe the cost classification (e.g., "conceptual cost," "detailed cost"). Describe the Applicant's efforts in considering these feasible alternatives. Detail why the proposed route was selected and other feasible alternatives were rejected. In the event that the proposed route crosses, or one of the feasible routes was rejected in part due to the need to cross, land managed by federal, state, or local agencies or conservation easements 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), describe the Applicant's efforts to secure the necessary ROW.

Response:

The Project's route development process for the transmission line rebuild component is further discussed in the testimony of Company Witness Smith.

In general, the Company's route development process for a transmission line rebuild project begins with a review of the existing ROW by a multidisciplinary team (the "Siting Team"). Specifically, this approach is consistent with §§ 56-46.1 and 56-259 of the Code, which provide that existing ROWs should be given priority when adding new transmission facilities, and which promote the use of existing ROWs for new transmission facilities. No viable alternative routes were identified given the availability of the existing ROW, the statutory preference to use or parallel the existing ROW, as well as the additional natural and human environmental impacts associated with the acquisition of and construction on new ROW. Where constraints are present, the Siting Team evaluated three study segments in focus areas and considered stakeholder and landowner input, site visit evaluations, and a comparative analysis process to identify the Rebuild Route, as described in Section 5.0 of the Siting Study located in Volume 2 of the Company's Application. The Siting Team selected the existing 69-kV centerline and ROW with three minor centerline diversions as the Proposed Route for the Project. The Proposed Route is depicted in **Exhibit 2**.

Based on publicly available information, the Proposed Route does not cross any lands managed by federal, state, or local agencies or conservation easements or open space easements qualifying under §§ 10.1-1009 - 1016 of the Code (or a comparable prior or subsequent provision of the Code).

10. Describe the Applicant's construction plans for the project, including how the Applicant will minimize service disruption to the affected load area. Include requested and approved line outage schedules for affected lines as appropriate.

Response:

Project construction activities include the installation and maintenance of soil erosion and sedimentation control measures; access road construction; removal of the existing transmission line wire, structures, and foundations; installation of foundations, structures, and wire; and the subsequent rehabilitation of all areas disturbed during construction. All required environmental compliance permits and studies will be completed, and a stormwater pollution prevention plan will be developed and implemented under the state's General Permit for Discharges of Stormwater from Construction Activities. The Company estimates that it will take approximately two years to engineer, procure material, and build the Project. The desired in-service date of the Project is June 1, 2029.

Because portions of the work lie within the existing ROW, outages on the Reusens – Skimmer 69-kV Circuit will be necessary to remove and rebuild the transmission line and to perform the associated station upgrades at the Abert Substation.

1. On Company-owned property, begin work with a safety clearance on the Reusens – Skimmer 69-kV Circuit and drill/pour foundations between proposed structures 432-26A and 432-25B, and the 69-kV box bay on the Reusens – Skimmer 69-kV Circuit (the 69-kV line sections between the Abert and Skimmer Substations, and the 69-kV line section between the Abert and Reusens Substations).

2. Take an outage on the Reusens – Skimmer 69-kV Circuit to install dead-end structure 432-26A, set mobile high-side on temporary pole, and install mobile high-side loops.

3. At the Abert Substation, a load transfer will be performed from 69/12-kV transformer to mobile.

4. Take an outage on the Reusens – Skimmer 69-kV Circuit and have the 69/12-kV transformer, 69-kV MOABs, and 69-kV capacitor banks out. Perform work at the Abert Substation involving the installation of the new 69-kV box bay, line Coupling Capacity Voltage Transformers ("CCVT"), MOAB devices, 69-kV breaker, 69-kV capacitor bank disconnect, and dead-end structure 435-25B. Install new structures and reconductor between station entrance and structure 432-11A. Relocate 69-kV capacitor bank and remove conductor between the switch pole and existing structures 435-26, 435-25, and Pop Switch structure.

Perform initial outage actions to cut-in 69-kV MOABs, 69-kV breaker, 69-kV Cap Bank Disconnect, and 69-kV Cap Bank AA.

5. While the 69-kV MOABs, 69-kV Circuit Breaker, 69-kV Cap Bank Disconnect, and 69-kV Cap Bank are out, perform the cut-in and commissioning of new equipment and associated disconnects.

6. Keeping the Reusens – Skimmer 69-kV Circuit out, install loops between structure 432-26A and the Abert Substation exit. Remove the mobile and the loops from 432-26A and the temporary structure going to the mobile.

7. At the Abert Substation, cut in the 69-kV MOABs.

8. Take a safety clearance on the Reusens – Skimmer 69-kV Circuit to drill and pour the foundation for structures 432-1B and 432-1C.

9. Take an outage on the Reusens – Skimmer 69-kV Circuit to install new structures to cross the James River and reconductor from 432-11A to the Reusens Substation entrance.

11. Indicate how the construction of this transmission line follows the provisions discussed in Attachment 1 of these Guidelines.

Response:

Protecting environmental resources such as natural, historic, scenic, and recreational values is of high importance to the Company. The route development and construction phases of the Project will generally follow the above-referenced guidelines to the extent practical. For a detailed discussion of the attention given to environmental resources and siting process used for this Project, see the Siting Study and the Virginia Department of Environmental Quality ("VDEQ") Supplement prepared by the Siting Team, which are included in Volume 2 of this Application. Additionally, see **Section III** of this Response to Guidelines.

12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify the length of line(s) proposed to be located in the service area of an electric utility other than the Applicant; and

b. Provide three (3) color copies of the Virginia Department of Transportation ("VDOT")"General Highway Map" for each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the Applicant. Also, where the line will be located outside of the Applicant's certificated service area, show the boundaries between the Applicant and each affected electric utility. On each map where the proposed line would be outside of the Applicant's certificated

service area, the map must include a signature of an appropriate representative of the affected electric utility indicating that the affected utility is not opposed to the proposed construction within its service area.

Response:

(a) The Project is located in Amherst and Bedford Counties and the City of Lynchburg, all of which are in the southeastern part of Appalachian's service territory. The Project will not be located outside of Appalachian's certificated service area and will not cross any other electric utility's facilities.

(b) The Company will provide digital copies of the VDOT General Highway Map for Bedford and Amherst Counties and the City of Lynchburg to the SCC staff with this Application. Copies of these maps are included as **Confidential Exhibit 10-C** to this Application. These maps include the Project's Proposed Route and the Company's existing transmission facilities.

B. Line Design and Operational Features

1. Detail the number of circuits and their design voltage, initial operational voltage, any anticipated voltage upgrade, and transfer capabilities.

Response:

The section of the Big Island – Reusens 69-kV Transmission Line to be rebuilt between the Company's Abert and Reusens Substations will remain a single-circuit transmission line, with each circuit composed of a three-phase design with a nominal phase-to-phase voltage of 69-kV. A voltage upgrade is not anticipated for the Project. The maximum load transfer capability of the new overhead conductor is approximately 55 MW (summer emergency rating) and approximately 67 MW (winter emergency rating).

2. Detail number, size(s), type(s), coating and typical configurations of conductors. Provide the rationale for the type(s) of conductor(s) to be used.

Response:

The proposed three-phase 69-kV circuits will consist of 795,000 circular mil aluminum conductor steel-reinforced "Drake" conductors with 26/7 stranding (1.108-inch diameter). One conductor will be installed per phase. The circuit will typically be arranged in a horizontal configuration. The rebuilt transmission line section between the Abert and Reusens Substations will typically use one Alumoweld ground wire (0.306-inch diameter) and one 0.646-inch diameter optical ground wire ("OPGW") for lightning protection. The OPGW is composed of aluminum clad steel strands surrounding a stainless-steel tube containing fiber optic strands used for utility operations and communication.

The proposed conductors and ground wires were selected to meet the electrical

requirements of the Project including load capacity, system stability, and efficiency. The mechanical strength and impacts on constructability are also considered in the selection process. The proposed conductors and ground wires will have a non-specular finish.

3. With regard to the proposed supporting structures over each portion of the ROW for the preferred route, provide diagrams (including foundation reveal) and descriptions of all the structure types, to include:

a) mapping that identifies each portion of the preferred route;

b) the rationale for the selection of the structure type;

c) the number of each type of structure and the length of each portion of the ROW;

d) the structure material and rationale for the selection of such material;

e) the foundation material;

f) the average width at cross arms;

g) the average width at the base;

h) the maximum, minimum and average structure heights;

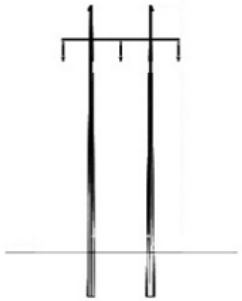
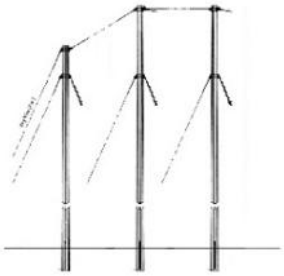
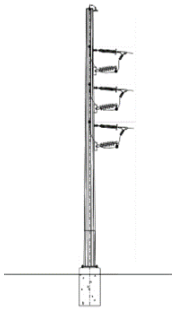
i) the average span length; and

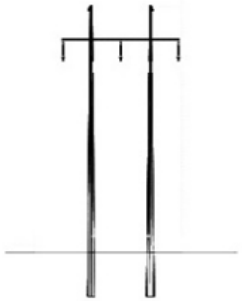
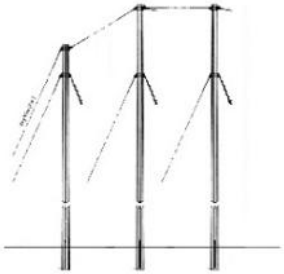
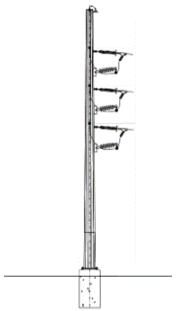
j) the minimum conductor-to-ground clearances under maximum operating conditions.

Response:

Final structure types will be determined during final engineering, which includes ground surveys and geotechnical studies. Nevertheless, based on preliminary engineering, the Company anticipates primarily using single-circuit steel H-frame and three-pole structures for the rebuilt 69-kV transmission line. The Company plans to remove 18 wood H-frame structures, eight wood three-pole structures, and two wood monopole structures and replace them with the structures shown in **Table II-1**. All totals and figures in the table are approximations based on current available data until a detailed design has been finalized.

Table II-1
Proposed Structures

Structure Type	 **69-kV Single-Circuit H-Frame** (See **Exhibit 6**.)	 **69-kV Single-Circuit Three-Pole Structure** (See **Exhibit 7**.)	 **69-kV Single-Circuit Monopole Dead-End Structure** (See **Exhibit 8**.)
a. Mapping that identifies each portion of the preferred route.	See **Exhibit 2**.	See **Exhibit 2**.	See **Exhibit 2**.
b. Rationale for the selection of the structure type.	The proposed 69-kV H-frame structure is best suited for medium to long spans and is comparable to the existing structures.	The proposed 69-kV three-pole structure is best suited for medium to long spans in developed or constrained areas, including the crossing at the James River.	The proposed 69-kV monopole dead-end structure is best suited for taps into substations, heavy line angle locations, and breaking wire tension.
c-1. Estimated number of each type of structure.	15	7	2
c-2. Estimated length of each portion of the ROW.	2.8 miles	1.3 miles	0.3 miles
d-1. Structure material.	Galvanized steel	Galvanized steel	Galvanized steel
d-2. Rationale for the selection of such material.	Galvanized steel was chosen for its durability and proven reliability in this region.	Galvanized steel was chosen for its durability and proven reliability in this region.	Galvanized steel was chosen for its durability and proven reliability in this region.

Structure Type	 **69-kV Single-Circuit H-Frame** (See **Exhibit 6**.)	 **69-kV Single-Circuit Three-Pole Structure** (See **Exhibit 7**.)	 **69-kV Single-Circuit Monopole Dead-End Structure** (See **Exhibit 8**.)
e. Foundation material.	Direct embedded foundation with suitable backfill with an average depth of 12.5’.	Direct embedded foundation with suitable backfill with an average depth of 13’.	Drilled concrete pier with an average depth of 30’.
f. Average width at cross arms.	24’	N/A	N/A
g. Average width at the base.	2.5’ Diameter Pole	2.5’ Diameter Pole	5’ Diameter Pole
h-1. Approximate average height of structures (above ground).	73’	75’	65’
h-2. Approximate typical structure height range (above ground).	68’ to 82’	73’ to 86’	65’
i. Average span length.	960’	920’	1,250’
j. Minimum conductor-to-ground clearances under maximum operating conditions.	23’-2”	23’-2”	23’-2”

4. With regard to the proposed supporting structures for all feasible alternate routes, provide the maximum, minimum and average structure heights with respect to the whole route.

Response:

The average heights of the proposed structures range between 65 and 86 feet above ground, with an average structure height of 72 feet. The rebuilt structures will be approximately 20 feet taller than the existing structures.

5. For lines being rebuilt, provide mapping showing existing and proposed structure heights for each individual structure within the ROW, as proposed in the application.

Response:

See **Exhibit 2.**

6. Provide photographs for typical existing facilities to be removed, comparable photographs or representations for proposed structures, and visual simulations showing the appearance of all planned transmission structures at identified historic locations within one mile of the proposed centerline and in key locations identified by the Applicant.

Response:

See **Exhibits 3** through **5** for photographs of the existing structures, **Exhibits 6** through **8** for representations of the proposed structures, and **Exhibit 11** for photo simulations representing the proposed conditions of the Project from Burgess Road (Amherst County) and Fox Hill Road (Bedford County). For visual simulations showing the appearance of all proposed transmission structures at identified historic locations within one mile of the Proposed Route centerline, see the VDEQ Supplement in Volume 2 of this Application.

C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project. Include size, acreage, and bus configurations. Describe substation expansion capability and plans. Provide one-line diagrams for each.

Response:

No new substations or switching stations are included within the Project; however, the Company proposes upgrades at the existing Abert Substation entirely on existing Company-owned property.

The proposed upgrades at the Abert Substation include the following:

- Install new adder box bay structure to replace the phase-over-phase switch.
- Install new line switches and CCVT for the Reusens and Skimmer 69-kV Circuits.
- Install one three-phase bus CCVT to the box bay structure.
- Relocate capacitor bank to box bay structure and remove legacy walk bus.
- Replace circuit switcher and add motor-operated bus disconnect switch.
- Install new mobile transformer disconnect switch to box bay structure.
- Install two new control cabinets and direct bury control cabling.
- Remove one legacy distribution pole and one turn pole.
- Expand the station fence approximately five feet to the south and approximately 10 feet to the east, entirely on Company-owned property, to support new and relocated station equipment.

See **Exhibit 9** for the substation layout, map, and views located in Volume 1. See **Confidential Exhibit 9-C** for the Abert Substation one line diagram located in Volume 3.