Facilities Study Report

For

Physical Interconnection of

PJM Generation Interconnection Request

Project ID AG1-135

Garner-Lancaster 115 kV

December 2024

Introduction

This Facilities Study has been prepared in accordance with the PJM Open Access Transmission Tariff Part VII, and, if applicable, the Application and Studies Agreement between the Project Developer and PJM Interconnection, LLC (PJM or Transmission Provider (TP)). The Transmission Owner (TO) is Virginia Electric and Power Company (VEPCO or Dominion).

A. Transmission Owner Facilities Study Summary

1. PROJECT DESCRIPTION

The Project Developer (PD) has proposed a Solar Generating Facility located in Richmond, VA with a designated PJM Project ID of AG1-135. The installed facilities will have a total Maximum Facility Output (MFO) of 60 MW with 36 MW of this output being recognized by PJM as Capacity.

2. POINT OF INTERCONNECTION (POI)

AG1-135 is a new service request project that will interconnect with the Dominion transmission system via a newly constructed 115 kV three breaker ring bus switching station.

AG1-135 will be tapping the Moon Corner–Rappahannock 115 kV line 65, between transmission structures 65/509 and 65/510. The AG1-135 station will be located approximately 1.51 miles from Moon Corner and 18.77 miles from Rappahannock.

The construction of the new interconnection substation will result in the splitting of the existing Moon Corner–Rappahannock 115 kV line 65 into two lines on the transmission system. The line segment between the new 115kV three breaker ring switching station and Moon Corner Station will be renumbered to line 1078. The line segment between the new 115kV three breaker ring switching station and Rappahannock Station shall remain line 65.

The proposed generation interconnection is shown on the single line diagram in Attachment #1.

3. POINT OF CHANGE IN OWNERSHIP

The Point of Change in Ownership will be the 115kV disconnect switch 4-hole pad inside the Dominion station by the common fence.

4. SCOPE OF PROJECT DEVELOPER INTERCONNECTION FACILITIES

Project Developer will design, build, own, operate and maintain the Project Developer Interconnection Facilities on Project Developer's side of the Point of Change in Ownership (PCO). This includes, but is not limited to:

- Circuit breakers and associated equipment located between the high side of the MPT(s) or GSU(s) and the Point of Change in Ownership.
- Generator lead line from the Generating Facility to the Point of Change in Ownership.
- Relay and protective equipment, telecommunications equipment, and Supervisory Control and Data Acquisition (SCADA) to comply with the TO's Applicable Technical Requirements and Standards.

B. Transmission Owner Facilities Study Results

The following is a description of the planned Transmission Owner facilities for the physical interconnection of the proposed AG1-135 project to the Dominion transmission system. These facilities shall be designed according to Dominion Applicable Technical Requirements and Standards. Once built, Dominion will own, operate, and maintain these Facilities.

1. TRANSMISSION OWNER INTERCONNECTION FACILITIES:

The Transmission Owner Interconnection Facilities will include, but not be limited to, the following:

A 115 kV backbone structure and foundation within the fence of the Interconnection Substation, to terminate the Project Developer's generator lead line.

Line conductor from the backbone structure to the bus position in the switchyard of the interconnection substation.

Purchase and install substation material – Transmission Owner Interconnection Facilities:

1. One (1), 115kV, 2000A, 3-phase center break gang operated switch
2. Three (3), 115kV, metering accuracy CCVT
3. Three (3), 115kV, 500:5 metering accuracy CT
4. Conductor, connectors, conduits, control cables, foundations, steel structures and grounding material as per engineering standards

Purchase and install relay material – Transmission Owner Interconnection Facilities:

1. One (1), 1110 – 24" dual SEL-587Z/351A transmission bus panel
2. One (1), 4200_W1 – bus differential CT make-up box
3. One (1), 1425 – 24" dual SEL-735 transmission and generator interconnect metering panel
4. One (1), 4524 – revenue metering CT make-up box
5. One (1), 4506 – 3-phase CCVT potential make-up box with metering (P4)
6. One (1), 1323 – 24" SEL-487E/735 PMU and PQ monitoring panel
7. Two (2), 4541 – control cable make-up box
8. Two (2), 4528A – generation fiber make-up box

The Project Developer has the option to select 'Option to Build' as is their right under the PJM Interconnection Service Agreement.

If "Option to Build" is selected, the Project Developer becomes responsible for the purchase and install of the TOIF facilities listed above, as well as the oversight costs included in 4. OTHER SCOPE OF WORK.

2. STAND ALONE NETWORK UPGRADES

The Stand Alone Network Upgrades will include, but not be limited to, the following:

For new interconnection substation:

AG1-135 Interconnection Substation (NXXXX)

A new 115 kV three breaker ring bus switching station will be constructed along the Moon Corner–Rappahannock 115 kV transmission line 65 to interconnect the project with the Dominion transmission system.

The objective of this project is to build a 115kV three breaker ring bus to support the new solar farm built by Project Developer. The site is located along Dominion's existing 115kV, 65 line from Moon Corner Station to Rappahannock Station. The cut line will consume two of the positions in the ring bus. The third position will be for the 115kV feed from Project Developer's Collector Station for the new solar farm.

The Project Developer will provide the property and access to the switching station. The grounding systems for each station will be tied together. All substation permitting, site preparation and grading activity will be performed by the Project Developer. All permits are the responsibility of the developer.

Substation design and relay protection are based on Dominion's Facility Interconnection Requirements, NERC Compliance Procedure FAC-001 (version 23), that is posted on PJM's website. This standard meets or exceeds the PJM Transmission and Substation Design Subcommittee Technical Requirements and the PJM Protection Standards (PJM Manual 7).

The scope of work includes the following:

Purchase and Install - Stand Alone Network Physical Facilities:

1. Approximate station fence line dimensions of 250' x 300'. At a minimum, site preparation and grading will be required to extend 15' beyond these dimensions for station grounding. Additional property and site prep may be required for proper grading and stormwater management, etc.
2. Approximately 1,100 linear ft of 5/8" chain link, 12 ft tall, perimeter fence around the station along with the security cameras and integrators as per design 4 fence standards
3. Three (3), 115kV, 3000A, 40kAIC, SF-6 circuit breaker
4. Six (6), 115kV, 2000A, 3-phase center break gang operated switch
5. Six (6), 115kV, relay accuracy CCVT
6. One (1), 115kV, 2000A wave trap
7. One (1), line tuner
8. Nine (9), 90kV, 74kV MCOV surge arrester
9. Two (2), 115kV, 2000A, 2-phase center break switch (for PVT's)
10. Two (2), 115kV, 100KVA power PT's for station service
11. Two (2), 115kV, 10 in-lb., 125VDC motor operator
12. One (1), 24' x 40' control enclosure
13. One (1), 125 VDC, 300 Ah station battery and 50 Amp charger (size to be verified during detail engineering)
14. Approximately 240 ft of cable trough with a 20 ft road crossing section
15. Two (2), 38" x 38" x 42" precast yard pull box
16. Station stone as required
17. Station lighting as required
18. Steel structures as required including switch stands, bus supports, station service transformers, CCVT and wave trap supports
19. Foundations as required including control house, equipment, and bus support stands

20. Conductors, connectors, conduits, control cables, cable trough, and grounding materials as per engineering standards

Purchase and Install - Stand Alone Network Relay Protection Equipment:

1. Three (3), 1510 – 24” dual SEL-351-7 transmission breaker with reclosing panel
2. Three (3), 4510 – SEL-2411 breaker annunciator
3. One (1), 1340 – 24” dual SEL-411L DCB/PLC line panel
4. One (1), 1340 – 24” dual SEL-411L CD/Fiber line panel
5. Two (2), 4506 – 3-phase CCVT potential make-up box
6. One (1), 1603 – 24” SEL-451 islanding control scheme panel
7. Two (2), 4000 – station service potential make-up box
8. Two (2), 4548 – non-earthing switch MOAB control box
9. One (1), 4103 – non-earthing switch MOAB AC/DC distribution box
10. Two (2), 4018 – 500A station service AC distribution panel
11. Two (2), 4007 – 225A outdoor transmission yard AC NQOD
12. Two (2), 4019 – 225A 3-phase throw over switch
13. Two (2), 4016 – 600A PVT disconnect switch
14. One (1), 4153c – wall mount station battery monitor
15. One (1), 5618 – SEL-3555 communications panel
16. One (1), 1255 – station annunciator panel
17. One (1), 5021 – SEL-2411 RTU panel
18. One (1), 5609 – fiber optic management panel
19. Three (3), 4526_A – circuit breaker fiber optic make-up box
20. One (1), 5202 – 26” APP 601 diAl fault recorder
21. Six (6), 4040 – security fiber/power make-up box
22. One (1), 5603 – station network panel no. 1
23. One (1), 5603 – station network panel no. 2
24. One (1), 4051 – power block
25. One (1), 4042_D1B – security utility – utility ATS
26. One (1), 4044 – 225A 1Ø outdoor main security AC NQOD
27. Two (2), 4040 – 100A 1Ø outdoor security AC NQOD
28. One (1), 5616 – station security panel
29. One (1), 5616 – station security fence panel
30. Two (2), 4018 – 225A station service AC distribution panel branch breaker
31. One (1), high voltage protection (HVP) box (provided by IT) (to be verified during detail engineering)
32. One (1), telephone interface box (to be verified during detail engineering)

The Project Developer has the option to select ‘Option to Build’ as is their right under the PJM Generator Interconnection Agreement.

By selecting this construction process method, the Project Developer shall secure all required real estate, obtain all necessary permits, perform site work including site preparation and grading, furnish equipment, construction personnel and ancillary materials as found in the facility study for construction of the switching station in compliance with Dominion Energy Substation Engineering Standards.

If the Project Developer selects “Option to Build”, the work required is as follows:

Option to Build, Stand Alone Network Upgrade Physical Facilities – Project Developer:

1. Approximate station fence line dimensions of 250’ x 300’. At a minimum, site preparation and grading will be required to extend 15’ beyond these dimensions for station grounding. Additional property and site prep may be required for proper grading and stormwater management, etc.
2. Approximately 1,100 linear ft of 5/8” chain link, 12 ft tall, perimeter fence around the station along with the security cameras and integrators as per design 4 fence standards
3. Three (3), 115kV, 3000A, 40kAIC, SF-6 circuit breaker
4. Six (6), 115kV, 2000A, 3-phase center break gang operated switch
5. Six (6), 115kV, relay accuracy CCVT
6. One (1), 115kV, 2000A wave trap
7. One (1), line tuner
8. Nine (9), 90kV, 74kV MCOV surge arrester
9. Two (2), 115kV, 2000A, 2-phase center break switch (for PVT’s)
10. Two (2), 115kV, 100KVA power PT's for station service
11. Two (2), 115kV, 10 in-lb., 125VDC motor operator
12. One (1), 24’ x 40’ control enclosure
13. One (1), 125 VDC, 300 Ah station battery and 50 Amp charger (size to be verified during detail engineering)
14. Approximately 240 ft of cable trough with a 20 ft road crossing station
15. Two (2), 38” x 38” x 42” precast yard pull box
16. Station stone as required
17. Station lighting as required
18. Steel structures as required including switch stands, bus supports, station service transformers, CCVT and wave trap supports
19. Foundations as required including control house, equipment, and bus support stands
20. Conductors, connectors, conduits, control cables, cable trough, and grounding materials as per engineering standards

Option to Build, Stand Alone Network Upgrade Relay Protection Equipment – Project Developer:

1. Three (3), 1510 – 24” dual SEL-351-7 transmission breaker with reclosing panel
2. Three (3), 4510 – SEL-2411 breaker annunciator
3. One (1), 1340 – 24” dual SEL-411L DCB/PLC line panel
4. One (1), 1340 – 24” dual SEL-411L CD/Fiber line panel
5. Two (2), 4506 – 3-phase CCVT potential make-up box
6. One (1), 1603 – 24” SEL-451 islanding control scheme panel
7. Two (2), 4000 – station service potential make-up box
8. Two (2), 4548 – non-earthing switch MOAB control box
9. One (1), 4103 – non-earthing switch MOAB AC/DC distribution box
10. Two (2), 4018 – 500A station service AC distribution panel
11. Two (2), 4007 – 225A outdoor transmission yard AC NQOD
12. Two (2), 4019 – 225A 3-phase throw over switch
13. Two (2), 4016 – 600A PVT disconnect switch
14. One (1), 4153c – wall mount station battery monitor

15. One (1), 5618 – SEL-3555 communications panel
16. One (1), 1255 – station annunciator panel
17. One (1), 5021 – SEL-2411 RTU panel
18. One (1), 5609 – fiber optic management panel
19. Three (3), 4526_A – circuit breaker fiber optic make-up box
20. One (1), 5202 – 26" APP 601 diAl fault recorder
21. Six (6), 4040 – security fiber/power make-up box
22. One (1), 4051 – power block
23. One (1), 4042_D1B – security utility – utility ATS
24. One (1), 4044 – 225A 1Ø outdoor main security AC NQOD
25. Two (2), 4040 – 100A 1Ø outdoor security AC NQOD
26. Two (2), 4018 – 225A station service AC distribution panel branch breaker

3. NETWORK UPGRADES

The Network Upgrades will include, but not be limited to, the following:

Installation of fiber cable circuits

Since this project is within 5 miles of Moon Corner Substation and future Chilton Substation, fiber will be installed on the existing structures back to Moon Corner and ahead to structure 541, which is the location of future Chilton Substation.

There will be (1) DNO-11410 fiber installed from structure 1078/498 to 1078/509 at Moon Corner (1.46 miles), (1) DNO-11410 fiber installed from structure 65/510 to 65/541 for future Chilton (4.01 miles), and (2) DNO-11410 fiber installed for the cut-in line from structure 1078/509 to 65/510 (2 x 0.11 miles), totaling to 5.69 miles of fiber installation. Also, the existing line 65 relay protection will be replaced with line differential protection utilizing fiber optics due to the shortening of the line, and the line 65 wave trap will be removed due to the powerline carrier function now being performed over fiber optics.

Transmission Line Tie-in for new interconnection substation:

Line 65, 115 kV, will be cut and looped into the new interconnection substation.

This project serves to cut Line 65 into the AG1-135 three breaker ring bus switching station, to be named the Robley Substation. The cut-in will be between structures 65/509 and 65/510. Two 115kV H-frame single circuit dead-end structures will be installed, in addition to one 115kV SC Backbone and two static poles. Since this project is within 5 miles of Moon Corner Substation and future Chilton Substation, fiber will be installed on the existing structures back to Moon Corner and ahead to structure 541, which is the location of future Chilton Substation. The existing structures and wires shall remain within the existing ROW or on Substation property. Any conductor installed will be 3-phase 1-768.2 ACSS "Maumee" conductor. There will be (1) DNO-11410 fiber installed back to Moon Corner and ahead to structure 541, (2) DNO-11410 fiber installed for the cut-in line, and 7#7 Alumoweld installed to static poles to protect the substation. This cut-in will split the line into Line 65 that goes south towards Rappahannock Substation, and Line 1078 that goes north towards Moon Corner Substation.

Existing Facilities to be Removed:

1. Remove approximately 0.05 miles of one (1) 7#7 Alumoweld shield wire from structure 65/498 to structure 65/499.
2. Remove approximately 1.40 miles of one (1) 3#6 Alumoweld shield wire from structure 65/499 to structure 65/509.
3. Remove approximately 4.02 miles of one (1) 3#6 Alumoweld shield wire from structure 65/510 to structure 65/541.
4. Remove approximately 0.12 miles of two (2) 3#6 Alumoweld shield wire between existing structures 65/509 and 65/510.
5. Remove approximately 0.12 miles of 3-phase 1-477 ACSR (24/7) 150°C MOT Conductor between existing structures 65/509 and 65/510.
6. Remove two (2) existing steel suspension H-frame structures on foundations as follows:
    a. Structures 65/509 and 65/510
7. Remove two (2) static arm assemblies as follows:
    a. Structures 65/529 and 65/541
8. Remove forty one (41) shield wire suspension insulator assemblies as follows:
    a. Structures 65/500 through 65/508
    b. Structures 65/511 through 65/541
9. Remove three (3) shield wire strain insulator assemblies as follows:
    a. One (1) at structure 65/498
    b. Two (2) at structure 65/499

Modification to Existing Facilities:

1. Transfer two spans of conductor to structures 1078/509 and 65/510.
2. Transfer two spans of shield wire to structures 1078/509 and 65/510.

Permanent Facilities to be Installed:

1. Install two (2) engineered steel H-frame single circuit DDE structures on foundations as follows:
    a. Structures 1078/509 and 65/510
2. Install one (1) 115kV S.C. Backbones (11.955) on foundations as follows:
    a. Structure 65/509A (1078/509A)
    b. This structure will be located in AG1-135 Robley Substation
3. Install two (2) Steel Static Poles (9.008) with Multiple Static Attachments on foundations as follows:
    a. Structures 65/509B and 65/509C
    b. Structures located in Robley Substation
4. Install approximately 0.11 miles of one (1) 3-phase 1-768.2 ACSS/TW/MA3/AWG [AWG-APAR] (20/7) 250°C MOT conductor from structure 1078/509 to 65/510.
5. Install approximately 1.46 miles of one (1) DNO-11410 from structure 1078/498 to 1078/509.
6. Install approximately 4.01 miles of one (1) DNO-11410 from structure 65/510 to 65/541.
7. Install approximately 0.11 miles of two (2) DNO-11410 from structure 1078/509 to 65/510.
8. Install approximately 0.10 miles of one (1) 7#7 Alumoweld shield wire from backbone 65/509A (1078/509A) to static poles 65/509B then to 65/509C, then ending on backbone 65/509A (1078/509A).
9. Install two (2) strain eye attachment assemblies (50.025) as follows:
    a. Existing structures 65/529 and 65/541
10. Install thirty nine (39) OPGW suspension insulator assemblies (96.020) as follows:
    a. Structures 1078/500 through 1078/508

b. Structures 65/511 through 65/528
c. Structures 65/530 through 65/540

11. Install six (6) OPGW strain insulator assembly (96.060) as follows:
    a. One (1) per structure at structures 1078/498 and 65/541
    b. Two (2) per structure at structures 1078/499 and 65/529
12. Install one (1) shield wire strain insulator assembly (42.010) as follows:
    a. Structure 65/541
13. Install nine (9) OPGW splices (96.501) as follows:
    a. One (1) per structure at structures 1078/498, 65/529, and 65/541
    b. Two (2) per structure at structures 1078/509, 65/509A (1078/509A), and 65/510.

Upgrades to neighboring facilities:

Additional work is required at Moon Corner Station, Garner DP, Lancaster Substation, Orcan Substation, Rappahannock Station, and White Stone Substation.

Moon Corner Substation

Project AG1-135 provides for drawing work, islanding equipment addition, relay resets, and field support necessary to change line 65 destination from Rappahannock to AG1-135 Generator Interconnect. The line segment from Moon Corner to AG1-135 will be renumbered to line 1078. Also, replace the existing line 65 relay protection with line differential protection utilizing fiber optics due to the shortening of the line and remove line 65 wave trap due to the powerline carrier function now being performed over fiber optics. Transmission engineering will terminate the fiber at one of the backbone legs and substation engineering will install 2” PVC conduits from the new static pole to the control enclosure.

Purchase and install substation material:

1. Remove – One (1), 115kV, 2000A wave trap
2. Two (2) runs of 2” conduits from backbone leg to the cable trough
3. Conduit tracer wires, 1/C #10, green
4. Foundations as required
5. Conductors, connectors, conduits, control cables, cable trough, and grounding materials as per engineering standards

Purchase and install relay material:

1. One (1), SEL-2506 Fiber Modem
2. One (1), 1340 – 24” Dual SEL-411L CD/Fiber line panel
3. One (1), panel retirement (Panel 6)

Garner DP

Project AG1-135 provides for drawing work, relay resets, and field support necessary to change line 65 destination at Garner DP Substation. The line number may or may not be changed.

Lancaster Substation

Project AG1-135 provides for drawing work, relay resets, and field support necessary to change line 65 destination from Moon Corner to AG1-135 Generator Interconnect.

Orcan Substation

Project AG1-135 provides for drawing work, relay resets, and field support necessary to change line 65 destination from Moon Corner to AG1-135 Generator Interconnect.

Rappahannock Substation

Project AG1-135 provides for drawing work, relay resets, and field support necessary to change line 65 destination from Moon Corner to AG1-135 Generator Interconnect.

White Stone Substation

Project AG1-135 provides for drawing work, relay resets, and field support necessary to change line 65 destination from Moon Corner to AG1-135 Generator Interconnect.

4. OTHER SCOPE OF WORK

The Project Developer will supply and own metering equipment that will provide instantaneous net MW and MVar per unit values in accordance with PJM Manuals M-01 and M-14D, and Sections 8.1 through 8.5 of Appendix 2 to the GIA.

If the Project Developer selects “Option to Build”, the oversight required is as follows:

Option to Build, Stand Alone Network Physical Facilities & Oversight – Dominion:

1. All Physical Engineering related oversight and approvals of activities related to equipment procurement, design, construction, and energization of switching station
2. All Real Estate related oversight and approval of activities related to construction of switching station
3. All Permitting related oversight and approval of activities related to construction of switching station
4. All Survey related oversight and approval of activities related to construction of switching station
5. All Construction and Methods oversight and approval of activities related to construction and energization of switching station
6. All Project Management oversight activities related to construction and energization of switching station
7. Review and approve all riser conductor, connectors, spacers, and bolts related to connection of the switching station to the Bulk Electric Transmission System
8. Review and approve all material related to the integration of the security fence software package back to the Corporate Security Fusion Center

Option to Build, Stand Alone Network Relay Protection Equipment – Dominion:

1. All Protection & Controls Engineering oversight and approval of activities related to equipment procurement, design, construction, and energization of switching station
2. All relay panel installation methods oversight and approval of activities related to construction and energization of switching station
3. All relay, communications, security settings related to the connection of the switching station to the Bulk Electric Transmission System
4. One (1), 5616 – station security panel
5. One (1), 5616 – station security fence panel
6. One (1), 5603 – station network panel no. 1
7. One (1), 5603 – station network panel no. 2
8. One (1), high voltage protection (HVP) box (Provided by IT) (to be verified during detail engineering)
9. One (1), telephone interface box (to be verified during detail engineering)

Option to Build, Transmission Owner Interconnection Facilities; Physical Facilities & Oversight – Dominion:

1. All Physical Engineering related oversight and approvals of activities related to equipment procurement, design, construction, and energization of switching station
2. All Construction and Methods oversight and approval of activities related to construction and energization of switching station
3. All Project Management oversight activities related to construction and energization of switching station

Option to Build, Transmission Owner Interconnection Facilities Relay Protection Equipment – Dominion:

1. All Protection & Controls Engineering oversight and approval of activities related to equipment procurement, design, construction, and energization of switching station
2. All relay panel installation methods oversight and approval of activities related to construction and energization of switching station
3. All relay, communications, security settings related to the connection of the switching station to the Bulk Electric Transmission System

5. MILESTONE SCHEDULE FOR COMPLETION OF TO WORK

Facilities outlined in this report are estimated to take 39 months to construct, from the time the Generator Interconnection Agreement is fully executed. This schedule may be impacted by the timeline for procurement and installation of long lead items, the ability to obtain outages to construct and test the proposed facilities.

Description	Start month	Finish month
Detailed Design	1	11
Permitting	3	29
Construction	28	39

6. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

General Assumptions:

1. The estimated procurement lead time for breakers is based on current Dominion pre-ordered breaker production slots. These production slots will be assigned after the agreement is executed.
2. The preliminary construction schedule is dependent on outage availability.
3. No additional shareholders were contacted for revised prices. It is assumed that the adjustments cover the changes in 2024 values to current inflation values.
4. Only estimates associated with Trans Lines Business Units are covered within the transmission line scope and estimate documents.

TOIF/SANU Conceptual Design Notes:

1. Currently, the scope and estimate assume Dominion standard spread footer foundations. Once the soil information is available and it is prudent to change the design to “helical pile foundations” the Dominion team should be informed to adjust the project estimate at the earliest possible opportunity.
2. Security and fence type – design level 4.

Network Upgrades Conceptual Design Notes:

1. Robley Substation will be located on Line 65 between Moon Corner and Rappahannock substations in Richmond County, VA.
2. Moon Corner Substation is energized.
3. Chilton Substation is to be built as part of project AD2074C and will be located north of Rappahannock Substation. It is assumed that Chilton will not be energized until after this project has been completed. However, fiber will be installed from Robley to structure 65/541 (the first structure outside the proposed Chilton Substation location) as part of this project, per request from the PM, since Chilton will be within 5 miles of Robley.
4. The original 2013 rebuild design model was used for this design due to as-built tensions and structure locations being unavailable. The wire tensions applied to the existing wires were determined from the original Plan and Profiles of line 65.
5. No additional transmission ROW is required for this project. All land acquisition will be included in the substation scope.
6. This scope of work will terminate existing Line 65 in AG1-135 Robley Substation. The

remainder of the line from structures 509A to 498 at Moon Corner substation will be renumbered to Line 1078.

7. It is assumed that the existing structures and their foundations are adequate for the proposed loading.
8. Crossing insulators will be used on ½ of H-Frame and both Backbone assemblies.
9. It is assumed that an outage on line 65 can occur, including an outage on Moon Corner Substation and Garner Substation while the new OPGW is installed over the station.

7. REVENUE METERING REQUIREMENTS

All revenue metering needed for this interconnection project must meet the metering requirements stated in Appendix 2, section 8 of the AG1-135 GIA, and in PJM Manuals M01 and M14D. The details of applicable revenue metering requirements are given in section 4.1.6 Metering and Telecommunications of Dominion's Facility Interconnection Connection Requirement NERC Standard FAC-001 posted on PJM website.

The revenue metering will be installed on the Transmission Owner side of the Point of Change in Ownership will be installed, owned and maintained by Transmission Owner.

a. Hourly compensated MWh received from the Generating Facility to the TO;
b. Hourly compensated MVARh received from the Generating Facility to the TO;
c. Hourly compensated MWh delivered from the TO to the Generating Facility; and
d. Hourly compensated MVARh delivered from the TO to the Generating Facility.

The Project Developer will access revenue meter via wireless transceivers or fiber cabling to meter with RS-485 or Ethernet communication port for dial-up reads. Project Developer must provide revenue and real time data to PJM from Project Developer Market Operations Center per "PJM Telemetry Data Exchange Summary" document available at PJM.com.

8. LAND REQUIREMENTS FOR INTERCONNECTION SUBSTATION

Land requirements for the Interconnection Substation needed for this interconnection project must meet the requirements in Dominion's Facility Interconnection Requirements, NERC Compliance Procedure FAC-001 (version 23), that is posted on PJM's website.

The Project Developer would be responsible for the following expectations in the area of Real Estate.

- The land required for Dominion's substation and project specific areas around must be deeded over title-in-fee.
- Any additional land needed for Storm Water Management, Landscaping, and Wetlands/Wetlands Mitigation.
- Dominion Real Estate and Counsel will provide standard real estate checklist word document. Process needs to start at least 6 months prior to closing date.
- Required subdivision plat and associated documentation to be reviewed prior to subdividing parcel with the county.
- Suitable Access Road from Substation to a Virginia/North Carolina State Maintained Roadway.

- Dominion will require access road, transmission line and utilities easement to the Substation.
- Any other Land/Permitting requirements required by the Substation.

9. ENVIRONMENTAL AND PERMITING

The Project Developer would be responsible for the following expectations in the area of Environmental and Permitting.

- Assessment of environmental impacts related to the Interconnection Facility and/or Network Upgrades including:

  Environmental Impact Study requirements

  Environmental Permitting

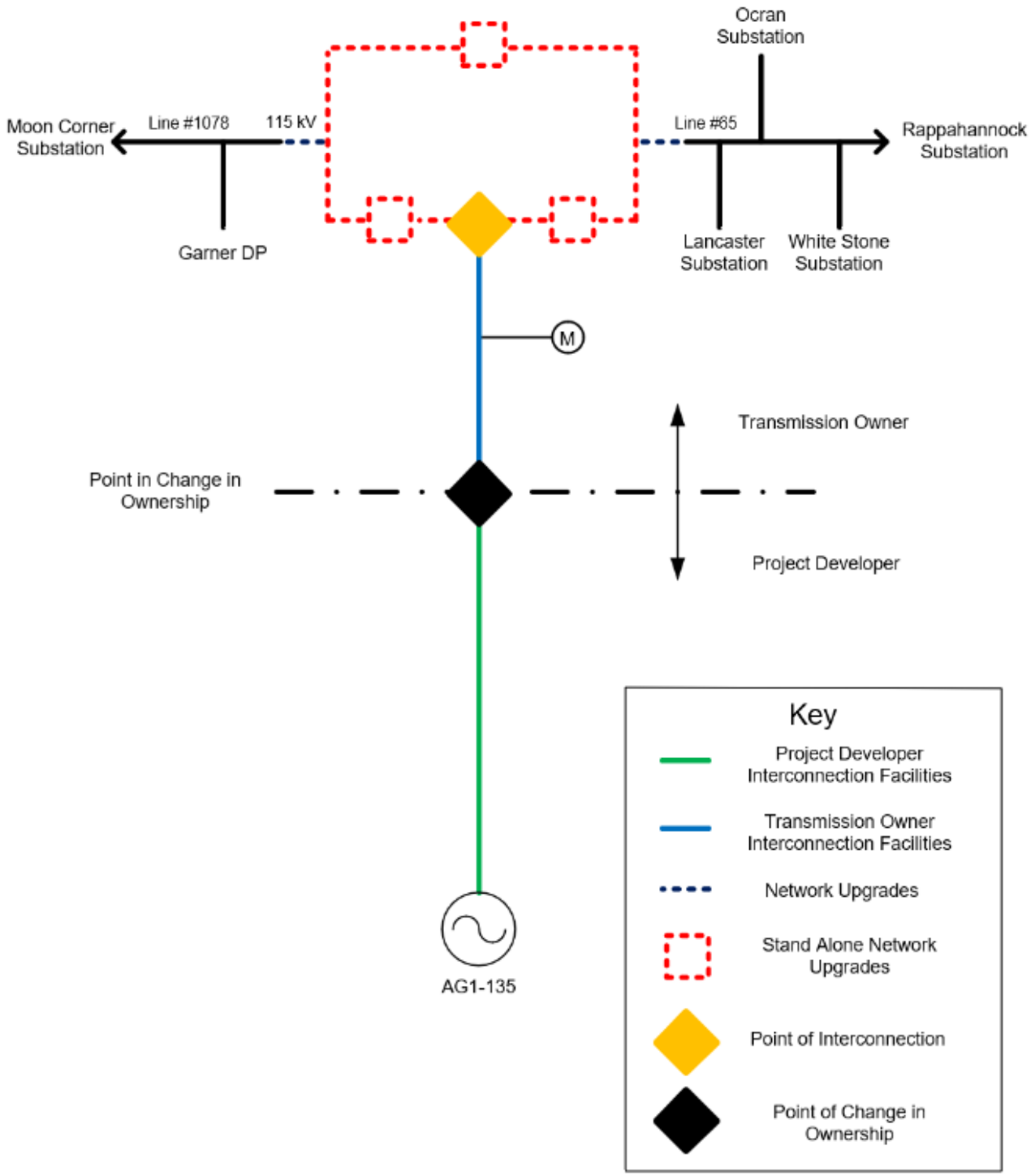
- Dominion will require a stormwater easement for substation specific stormwater design BMP's to allow access to and use of the facilities.

  A maintenance agreement should be in place in perpetuity for said stormwater facilities.

- Conditional Use Permit for Substation
- Any additional land needed for Storm Water Management, Landscaping, and Wetlands/Wetlands Mitigation
- Any other Permitting requirements required by the Substation

C. APPENDICES

Attachment #1: Single line Diagram for the Physical Interconnection



Attachment #2: Substation General Arrangement