Charlottesville to Proffit 230 kV Greenfield Project

General Information

Proposing entity name	NEETMH
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	NEET MidAtlantic 2021 RTEP-Window 1-Proposal 1
PJM Proposal ID	111
Project title	Charlottesville to Proffit 230 kV Greenfield Project
Project description	Build a new 8.9-mile 230 kV line between Charlottesville and Proffit Rd. DP 230 kV (“Proffit 230 kV”) stations using 795 ACRS Drake double bundle conductor. Install necessary breakers to accommodate (1) one new 230 kV line at Charlottesville and Proffit 230 kV stations.
Email	Eric.Hodges@nexteraenergy.com
Project in-service date	12/2025
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	See Attachment 1A-1G for Project Analysis, Charlottesville-Proffit Project Solution Report, one-line diagram for the proposed solution. Please note: NEET MidAtlantic has uploaded the Attachment 1A-1G for Project Analysis to PJM Secured Shared server.

Project Components

1. Charlottesville Line Position Addition
2. Proffit Rd. DP Line Position Addition
3. Hollymead Tap-Gordonsville 230 kV Upgrade

Substation Upgrade Component

Component title	Charlottesville Line Position Addition
Project description	
Substation name	Charlottesville 230 kV substation
Substation zone	363 GORDONSV
Substation upgrade scope	Terminate proposed greenfield 230 kV line to a new line position using listed equipment below. (1) 230 kV 40 kA circuit breaker with associated bus work, switches, P&C equipment, and deadend structure.

Transformer Information

	Name	**Capacity (MVA)**	
Transformer	N/A	N/A	
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	N/A	N/A	N/A

New equipment description	Expect installation of one (1) 230 kV 40 kA circuit breaker with associated bus work, switches, and P&C equipment. Rating at least 3000 amps. New transformer installation will not be required as part of the proposal.
Substation assumptions	Substation has enough space to accommodate a new 230 kV line position. Circuit breaker, P&C equipment, and dead-end H-frame structure will be installed to support an additional line position. No Control House expansion is expected to be required. All proposed equipment is expected to sit within existing station fence. Existing Line: Re-terminate existing 230 kV line to a new line position using the above listed equipment, resulting in existing termination position to free up for the newly proposed greenfield line. Binding Cost Cap is not applicable as work performed will be by incumbent.
Real-estate description	Desktop analysis indicates that substation appears to have enough space provision to accommodate line position addition. No addition land needed. Scope will utilize existing footprint.

Construction responsibility	Dominion
Benefits/Comments	N/A

Component Cost Details - In Current Year $

Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.
Construction management	Detailed cost breakdown is business confidential information.
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.
Contingency	Detailed cost breakdown is business confidential information.
Total component cost	$1,302,300.00
Component cost (in-service year)	$1,490,000.00

Substation Upgrade Component

Component title	Proffit Rd. DP Line Position Addition
Project description	
Substation name	Proffit Rd. DP 230 kV Substation
Substation zone	363 GORDONSV
Substation upgrade scope	Terminate proposed greenfield 230 kV line to a new line position using listed equipment below. (1) 230 kV 40 kA circuit breaker with associated bus work, switches, P&C equipment, and deadend structure. (2) Make necessary equipment upgrades to match the 1047 MVA rating of the Hollymead – Proffit Rd. DP 230 kV line

Transformer Information

	Name	Capacity (MVA)	
Transformer	N/A	N/A	
	High Side	**Low Side**	**Tertiary**
Voltage (kV)	N/A	N/A	N/A

New equipment description	Expect installation of one (1) 230 kV 40 kA circuit breaker with associated bus work, switches, and P&C equipment. Rating at least 3000 amps. New transformer installation will not be required as part of the proposal.
Substation assumptions	Substation will require modest expansion on the southeast property line to accommodate a new 230 kV line position. Circuit breaker, P&C equipment, and dead-end H-frame structure will be installed to support an additional line position. No Control House expansion is expected to be required. All proposed equipment is expected to sit within existing station fence. Newly Proposed Line: Terminate proposed greenfield 230 kV line to a new line position using listed equipment below.
Real-estate description	Desktop analysis indicates that substation appears to require additional space to accommodate line position addition. Additional land will be needed along the southeast boundary estimated to be less than 50 feet to accommodate ROW width along south edge of substation expanding into parcel owned by Margaret & Frederic Melcher (APN# 04700-00-00-003A0). Total expanded area estimated to be .42 acres.
Construction responsibility	Dominion
Benefits/Comments	Map showing expansion area included in Attachment 2.A and Attachment 2.B for Substation drawing.

Component Cost Details - In Current Year $

Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.
Construction management	Detailed cost breakdown is business confidential information.

Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.
Contingency	Detailed cost breakdown is business confidential information.
Total component cost	$1,918,364.00
Component cost (in-service year)	$2,200,000.00

Transmission Line Upgrade Component

Component title	Hollymead Tap-Gordonsville 230 kV Upgrade
Project description	
Impacted transmission line	Hollymead Tap-Gordonsville 230 kV
Point A	Hollymead Tap
Point B	Cash’s Corner
Point C	Gordonsville
Terrain description	The transmission line route traverses through rolling hills. See Attachment 3.

Existing Line Physical Characteristics

Operating voltage	230 kV
Conductor size and type	Unknown
Hardware plan description	Unknown
Tower line characteristics	Unknown

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**

Summer (MVA)	1047.000000	1047.000000
Winter (MVA)	1160.000000	1160.000000
Conductor size and type	Upgrade existing Hollymead – Cash's Corner – Gordonsville 230 kV line to match 1047 MVA Summer LTE rating of the Proffit to Hollymead Tap 230 kV	
Shield wire size and type	Unknown	
Rebuild line length	15.5	
Rebuild portion description	NEET MidAtlantic assumptions is that the Hollymead to Gordonsville line is limited by substation equipment and will only require terminal upgrades in order to increase LTE rating to 1047 MVA.	
Right of way	Not Applicable	
Construction responsibility	Dominion	
Benefits/Comments	N/A	

Component Cost Details - In Current Year $

Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.
Construction management	Detailed cost breakdown is business confidential information.
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.
Contingency	Detailed cost breakdown is business confidential information.
Total component cost	$500,000.00
Component cost (in-service year)	$545,000.00

Greenfield Transmission Line Component

Component title	Charlottesville to Proffit 230 kV Circuit 2	
Project description		
Point A	Charlottesville	
Point B	Proffit	
Point C	N/A	
	Normal ratings	**Emergency ratings**
Summer (MVA)	911.000000	1042.000000
Winter (MVA)	1025.000000	1263.000000
Conductor size and type	795 ACSR Drake Two Conductor Bundle per Phase	
Nominal voltage	AC	
Nominal voltage	230	
Line construction type	Overhead	
General route description	The proposed greenfield 8.9-mile 230 kV line will require 100-foot right of way crossing through Albermarle County (8.73 miles) and City of Charlottesville (0.18 miles). Approximate 3.5 miles section of the transmission line will be located adjacent to the Charlottesville to Hollymead Tap to Proffit 230 kV Transmission Line. The NEET MidAtlantic proposed transmission line alignment traverses through a largely rural area of north central Virginia. Nestled between the Rivanna River to the west and the Southwest Mountains to the east, the area is characterized by rolling plains associated with the Piedmont Plateau. Small bands of forested wetlands associated with riparian corridors along streams intersect fields and forests throughout the study area. Unique or sensitive terrain is not identified within the NEET MidAtlantic proposed transmission line corridor. See Attachment 4.A for more information.	
Terrain description	The transmission line route traverses through rolling hills. See Route Description for additional details.	

Right-of-way width by segment	NEET MidAtlantic has identified approximately 72 private landowners and 24 public crossings. Once the project design has been approved, public outreach will occur to acquire option agreements from the private landowners for the 100ft wide ROW. Once the project permits have been approved, NEET MidAtlantic will negotiate easement rights for the transmission line. Temporary access roads for constructability will be identified and acquired at that time. After construction, remediation and construction damages will be paid and processed. See Attachment 4.B.
Electrical transmission infrastructure crossings	0.57 mile from Charlottesville, cross over a Charlottesville – Hollymead Tap 230 kV line, 106 feet from Charlottesville, cross over a Charlottesville – Hollymead Tap 230 kV line
Civil infrastructure/major waterway facility crossing plan	Approximately 24 permits have been identified, 1 of which is the Norfolk Southern Railway Company. Once NEET MidAtlantic has the preliminary design, NEET MidAtlantic will engage these agencies to start the permitting process. NEET MidAtlantic will work closely the agencies requirements and coordinate with engineering to acquire the appropriate permits.
Environmental impacts	Fatal flaws have not been identified for the NEET MidAtlantic proposed transmission line. Environmental constraints identified are manageable through implementation of NEET MidAtlantic's environmental avoidance, minimization and mitigation strategy incorporated at the beginning of the routing process. Small bands of forested wetlands associated with the riparian corridors of streams will require tree clearing in order to maintain compliance with overhead transmission regulations for fire safety; this activity will be permitted accordingly. Temporary impacts to herbaceous wetlands during construction will be permitted. Nineteen streams are crossed by the proposed overhead alignment. Permanent impacts to wetlands will be avoided and minimized to the extent possible through site specific design, engineering and structure placement. Environmental permitting will be required for any unavoidable impacts to wetlands. The designation of each of the streams to be crossed with overhead infrastructure or with temporary construction mats or bridging will be determined and permitted accordingly. Seasonal restrictions for instream work will be adhered to in order to avoid and minimize impacts to aquatic species. The project intends to adhere to tree removal seasonal restriction windows to avoid and minimize impacts to protected birds and bats, such as the Indiana Bat, Northern Long-eared Bat, Bald Eagle and other common raptors. Erosion control best management practices and setbacks will be engineered and utilized to prevent sedimentation in streams for the protection of aquatic species and to avoid water quality impacts. A Cultural Resource Assessment Survey will be performed to determine the presence of archeological or culturally sensitive areas and implementation of NEET MidAtlantic's avoidance strategy. There are no unique or sensitive environmental concerns or impacts with the NEET MidAtlantic proposed transmission line. See Attachment 4.A for more information.

Tower characteristics	Towers for the Charlottesville Proffit 230 kV greenfield transmission line, planned to be weathering steel monopoles, single circuit, 911MVA normal, two conductor per phase bundle using 795 ACSR Drake and Braced Post insulators. A single OPGW will be utilized for a shield conductor and to provide fiber optic communication between the Charlottesville and Proffit 230 kV substations. Tower foundations will depend on the tower application and location. Tangent towers are planned to be direct embedded. The new line is broken into three segments. The first segment from Charlottesville 230 kV substation to the intersection with Highway 20 is approximately 0.6 miles. Typically, the towers will be direct embedded using guys to support angle structure requirements. The span length in the first segment is expected to be approximately 900 feet. The conductor configuration is expected to be delta in this segment. The second segment is approximately 6.3 miles adjacent to highway 20. Approximately half of the structures adjacent to Highway 20 are planned to for direct embed with guys supporting angle structures. The other half of the structures on Highway 20 are planned with self-supporting foundations. Pole spacing on the second segment, adjacent to Highway 20 has been reduced to approximately 500’ span lengths. Vertical construction with conductors on the roadside of the structure to is planned to manage to total right of way width requirement and potential blowout. The third segment is approximately 2.1 miles. After leaving Highway 20 the line connects to the Proffit Substation. Typically, the towers will be direct embedded using guys to support angle structure requirements. As the route shifts away from Highway 20 in the north, the spans lengths are increased to approximately 900’. The conductor configuration is expected to be delta in this segment. A photograph of a weathering steel, braced post, 230 kV single circuit, single conductor line is included in Attachment 4.C. Approximately 80 feet above ground.
Construction responsibility	Proposer
Benefits/Comments	Additional comments contains business confidential information.
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.
Construction management	Detailed cost breakdown is business confidential information.
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.

Contingency	Detailed cost breakdown is business confidential information.
Total component cost	$19,987,423.00
Component cost (in-service year)	$21,738,238.00

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
GD-S30	314749	6CHARLVL	314772	6PROFFIT	1	230	345	Summer Gen Deliv	Included

New Flowgates

None

Financial Information

Capital spend start date	01/2022
Construction start date	03/2025
Project Duration (In Months)	47

Cost Containment Commitment

Cost cap (in current year)	Detailed cost breakdown is business confidential information.
Cost cap (in-service year)	Detailed cost breakdown is business confidential information.

Components covered by cost containment

1. Charlottesville to Proffit 230 kV Circuit 2 - Proposer

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	Yes
Escalation	Yes
Additional Information	Additional comments contains business confidential information.
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	Yes
Is the proposer offering a Debt to Equity Ratio cap?	Yes
Additional cost containment measures not covered above	Additional comments contains business confidential information.

Additional Comments

NEET MidAtlantic has uploaded the following attachments to PJM Secured Shared Site: Proposal 1_Attachment 1A-1G Project Analysis. All attachments contains business confidential information.