Wiley Rd 500 kV -Wheeler 500/230 kV

General Information

Proposing entity name NEETMH

Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?

Company proposal ID 1A-WILEY2

PJM Proposal ID 982

Project title Wiley Rd 500 kV -Wheeler 500/230 kV

Project description Wiley Rd – Wheeler 500 kV Project using adjacent ROW, Hope Creek PARs

Yes

Email Johnbinh.Vu@nexteraenergy.com

Project in-service date 10/2025

Tie-line impact Yes

Interregional project No

Is the proposer offering a binding cap on capital costs?

Yes

Additional benefits

Project Components

1. Wiley Rd Substation 500 kV

- 2. Wheeler Substation 500/230 kV
- 3. Wiley Rd Substation Wheeler Substation 500 kV OH
- 4. Wheeler Substation Graceton Substation (Circuit 1 & 2)
- 5. Wheeler Substation Graceton Substation (Circuit 2)
- 6. Add two line positions at Graceton (2 new CB)

- 7. Add 1x Phase Shifting Transformer (PST) at Hope Creek 230 kV substation ...
- 8. Add 1x Phase Shifting Transformer (PST) at Hope Creek 230 kV substation ...
- 9. Loop in existing Peach Bottom Conastone 500kV OH line circuit into NEE...
- 10. Loop in existing Peach Bottom Conastone 500kV OH line circuit into NEE...
- 11. Loop in existing Peach Bottom Delta 500kV OH line circuit into NEETMA ...
- 12. Loop in existing Peach Bottom Delta 500kV OH line circuit into NEETMA ...

Greenfield Substation Component

Component title	Wiley Rd Substation 500 kV
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Project description New Wiley Rd 500 kV substation to solve for overloads on the Peach Bottom – Conastone 500 kV

line with a ring bus configuration with 3 positions (3 CB)

Substation name Wiley Rd

Substation description New Wiley Rd 500 kV substation to solve for overloads on the Peach Bottom – Conastone 500 kV

line with a ring bus configuration with 3 positions (3 CB)

Nominal voltage AC

Nominal voltage 500

Transformer Information

None

Outreach plan

Major equipment description New Wiley Rd 500 kV substation to solve for overloads on the Peach Bottom – Conastone 500 kV

See Attachment 1, Section 7.4

line with a ring bus configuration with 3 positions (3 CB)

	Normal ratings	Emergency ratings
Summer (MVA)	0.000000	0.000000
Winter (MVA)	0.000000	0.000000
Environmental assessment	See Attachment 19	

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Land acquisition plan See Attachment 22

Construction responsibility Proposer

Benefits/Comments See Attachment 1, Section 3.4

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$35,060,766.00

Component cost (in-service year) \$62,808,478.68

Greenfield Substation Component

Component title Wheeler Substation 500/230 kV

Project description New Wheeler 500/230 kV substation to solve for overloads on the Peach Bottom – Conastone 500

kV line with Breaker and a Half configuration with 5 positions (7 CB) and two 500/230 kV

transformers

Substation name Wheeler Substation

Substation description New Wheeler 230/500 kV Substation which includes connections to Graceton 230 kV, NEETMA's

Wiley Rd 500/230 kV substation, Peach Bottom 500 kV, and Conastone 500 kV with Breaker and a

Half configuration with 5 positions (7 CB) and two 500/230 kV transformers

Nominal voltage AC

Transformer Information

	Name	Capacity (MVA)	
Transformer	Transformer ID 1 (Wheeler-Gracet@00Ckt. 1)		
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	
	Name	Capacity (MVA)	
Transformer	Transformer ID 2 (Wheeler-Gracet@@Ckt. 2)		
	High Side	Low Side	Tertiary
Voltage (kV)	500	230	
Major equipment description	New Wheeler 230/500 kV Substation which includes connections to Graceton 230 kV, NEETMA's Wiley Rd 500/230 kV substation, Peach Bottom 500 kV, and Conastone 500 kV with Breaker and a Half configuration with 5 positions (7 CB) and two 500/230 kV transformers		
	Normal ratings	Emergency ratings	
Summer (MVA)	0.000000	0.000000	
Winter (MVA)	0.000000	0.000000	
Environmental assessment	See Attachment 19		
Outreach plan	See Attachment 1, Section 7.4		
Land acquisition plan	See Attachment 22		
Construction responsibility	Proposer		
Benefits/Comments	See Attachment 1, Section 3.4		

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$104,188,584.00

Component cost (in-service year) \$121,274,649.00

Greenfield Transmission Line Component

Component title Wiley Rd Substation -Wheeler Substation 500 kV OH

Project description Overhead single circuit 500kV line from the new 500kV Wiley Rd Substation to the new 500/230kV

Wheeler Substation

Point A Wiley Rd Substation

Point B Wheeler Substation

Point C

	Normal ratings	Emergency ratings
Summer (MVA)	3130.000000	4198.000000
Winter (MVA)	3520.000000	4652.000000
Conductor size and type	1590 kcmil Lapwing ACSR (2 conductors per bundle)	

Nominal voltage AC

Nominal voltage 500

Line construction type Overhead

General route description

The project will be located adjacent to the existing transmission line corridor. See Attachments 4,

19, and 22

Terrain description

The terrain along the route is generally flat with agricultural and rural residential land uses. A kmz of

the route has been provided in Attachment 4

Right-of-way width by segment See Attachments 4 and 22

Electrical transmission infrastructure crossings

See Attachment 7

Civil infrastructure/major waterway facility crossing plan

See Attachment 7

Environmental impacts See Attachment 19

Tower characteristics See Attachment 6

Construction responsibility Proposer

Benefits/Comments See Attachment 1, Section 3.4

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$17,595,941.00

Component cost (in-service year) \$19,485,941.00

Greenfield Transmission Line Component

Component title Wheeler Substation – Graceton Substation (Circuit 1 & 2)

Project description New overhead double circuit 230 kV line from the new 500/230 kV Wheeler Substation to the

Normal ratings

existing 230 kV Graceton Substation

Point A Wheeler Substation

Point B Graceton Substation

Point C

Summer (MVA) 1440.000000 1930.000000

Winter (MVA) 1618.000000 2140.000000

Conductor size and type 1590 kcmil Lapwing ACSR (2 conductors per bundle)

Nominal voltage AC

Nominal voltage 230

Line construction type Overhead

General route description

The project will be located adjacent to the existing transmission line corridor. See Attachments 4

and 22

Terrain description The terrain along the route is generally flat with agricultural and rural residential land uses. A kmz of

the route has been provided in Attachment 4

Right-of-way width by segment See Attachments 4 and 22

Electrical transmission infrastructure crossings

No electrical transmission infrastructure crossings

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Emergency ratings

Civil infrastructure/major waterway facility crossing plan

The Wheeler to Graceton 230 kV (Circuit 1) has one civil infrastructure crossing at Wheeler School

Road. See Attachment 7

Environmental impacts See Attachment 19

Tower characteristics See Attachment 6

Construction responsibility Proposer

Benefits/Comments See Attachment 1 – BPU Supplemental Document Section 3.4

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$3,330,000.00

Component cost (in-service year) \$3,604,499.00

Greenfield Transmission Line Component

Component title Wheeler Substation – Graceton Substation (Circuit 2)

Project description New overhead single circuit 230 kV line from the new 500/230 kV Wheeler Substation to the

existing 230 kV Graceton Substation

Point A Wheeler Substation

Point B Graceton Substation

Point C

	Normal ratings	Emergency ratings
Summer (MVA)	1440.000000	1930.000000
Winter (MVA)	1618.000000	2140.000000
Conductor size and type	1590 kcmil Lapwing ACSR (2 conductors per bundle)	
Nominal voltage	AC	
Nominal voltage	230	
Line construction type	Overhead	
General route description	The project will be located adjacent to the existing transmission line corridor. See Attachments 4 and 22	
Terrain description	The terrain along the route is generally flat with agricultural and rural residential land uses. A kmz of the route has been provided in Attachment 4	
Right-of-way width by segment	See Attachments 4 and 22	
Electrical transmission infrastructure crossings	No electrical transmission infra	structure crossings
Civil infrastructure/major waterway facility crossing plan	The Wheeler to Graceton 230 kV (Circuit 2) has one civil infrastructure crossing at Wheeler School Road. See Attachment 7	
Environmental impacts	See Attachment 19	
Tower characteristics	See Attachment 6	
Construction responsibility	Proposer	
Benefits/Comments	See Attachment 1 – BPU Supp	lemental Document Section 3.4
Component Cost Details - In Current Year \$		
Engineering & design	Confidential - Competitive Infor	mation
Permitting / routing / siting	Confidential - Competitive Infor	mation

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$1,665,000.00

Component cost (in-service year) \$1,845,000.00

Substation Upgrade Component

Component title Add two line positions at Graceton (2 new CB)

Project description Add two line positions at Graceton (2 new CB)

Substation name Graceton 230 kV

Substation zone BGE

Substation upgrade scope Add two line positions at Graceton (2 new CB)

Transformer Information

None

New equipment description AC Substation : Upgrade - add two positions

Substation assumptions

Use available space in substation to add two new positions

Real-estate description No expansion of substation fence anticipated

Construction responsibility BGE

Benefits/Comments Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$8,080,000.00

Component cost (in-service year) \$8,740,000.00

Substation Upgrade Component

Component title Add 1x Phase Shifting Transformer (PST) at Hope Creek 230 kV substation to prevent downstream

overload on Hope-Creek LS Power Ckt. 1

Project description Add 1x Phase Shifting Transformer (PST) at Hope Creek 230 kV substation to prevent downstream

overload on Hope-Creek LS Power Ckt. 1

Substation name Hope Creek 230 kV

Substation zone PSEG

Substation upgrade scope Add 1x Phase Shifting Transformer (PST) at Hope Creek substation to prevent downstream

overload on Hope Creek- LS Power 230kV Ckt. 1

Transformer Information

Name Capacity (MVA)

Transformer Hope Creek 230 kV PST - Ckt. 1 766

	High Side	Low Side	Tertiary
Voltage (kV)	230	230	
New equipment description	AC Substation : Phase Shifter		
Substation assumptions	Use available space in sub to a	add phase shifting transformer	
Real-estate description	No expansion of substation fer	nce anticipated	
Construction responsibility	PSEG		
Benefits/Comments	Resolves reliability issues iden	tified per PJM's Gen. Deliv. Proce	ess
Component Cost Details - In Current Year \$			
Engineering & design	Confidential - Competitive Info	rmation	
Permitting / routing / siting	Confidential - Competitive Information		
ROW / land acquisition	Confidential - Competitive Information		
Materials & equipment	Confidential - Competitive Information		
Construction & commissioning	Confidential - Competitive Information		
Construction management	Confidential - Competitive Info	rmation	
Overheads & miscellaneous costs	Confidential - Competitive Info	rmation	
Contingency	Confidential - Competitive Info	rmation	
Total component cost	\$15,000,000.00		
Component cost (in-service year)	\$16,240,000.00		
Substation Upgrade Component			
Component title	Add 1x Phase Shifting Transfo overload on Hope-Creek LS Po		/ substation to prevent downstream

Project description

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Add 1x Phase Shifting Transformer (PST) at Hope Creek 230 kV substation to prevent downstream overload on Hope-Creek LS Power Ckt. 2

Substation name Hope Creek 230 kV

Substation zone PSEG

Substation upgrade scope Add 1x Phase Shifting Transformer (PST) at Hope Creek substation to prevent downstream

overload on Hope Creek- LS Power 230kV Ckt. 2

Transformer Information

Name Capacity (MVA)

Transformer Hope Creek 230 kV PST - Ckt. 2 766

High Side Low Side Tertiary

Voltage (kV) 230

New equipment description AC Substation : Phase Shifter

Substation assumptions

Use available space in sub to add phase shifting transformer

Real-estate description No expansion of substation fence anticipated

Construction responsibility PSEG

Benefits/Comments Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$15,000,000.00

Component cost (in-service year) \$16,240,000.00

Transmission Line Upgrade Component

Component title Loop in existing Peach Bottom - Conastone 500kV OH line circuit into NEETMA proposed Wheeler

500kV substation and use existing conductors

Project description Loop in existing Peach Bottom - Conastone 500kV OH line circuit into NEETMA proposed Wheeler

500kV sub, use existing conductors on the section Wheeler- Conastone

Impacted transmission line

New NEETMA-Wheeler substation to Conastone 500 kV line

Point A Wheeler

Point B Conastone

Point C

Terrain description Expect to utilize existing easements/utility owned property, no expansion anticipated

Designed

Existing Line Physical Characteristics

Operating voltage 500

Conductor size and type Same as existing

Hardware plan description

Utilize existing line hardware to extent practicable

Tower line characteristics

Utilize existing towers to extent practicable

Proposed Line Characteristics

Voltage (kV) 500.00000 500.000000

Normal ratings Emergency ratings

Operating

Summer (MVA) 2920.000000 3620.000000

Winter (MVA) 2920.000000 3620.000000

Conductor size and type Same as existing

Shield wire size and type

Utilize existing shield wire to extent practicable

Rebuild line length 0.1 miles

Rebuild portion description 0.1 miles

Right of way

Use of existing ROW, no expansion anticipated

Construction responsibility BGE

Benefits/Comments Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$3,000,000.00

Component cost (in-service year) \$3,250,000.00

Transmission Line Upgrade Component

Component title Loop in existing Peach Bottom - Conastone 500kV OH line circuit into NEETMA proposed Wheeler 500kV substation and use existing conductors Project description Loop in existing Peach Bottom - Conastone 500kV OH line circuit into NEETMA proposed Wheeler 500kV sub, use existing conductors on the section Wheeler- Peach Bottom Impacted transmission line New NEETMA-Wheeler substation to Peach Bottom 500 kV line Point A Wheeler Point B Peach Bottom Point C Terrain description Expect to utilize existing easements/utility owned property, no expansion anticipated **Existing Line Physical Characteristics** Operating voltage 500 Conductor size and type Same as existing Hardware plan description Utilize existing line hardware to extent practicable Tower line characteristics Utilize existing towers to extent practicable **Proposed Line Characteristics** Designed **Operating** Voltage (kV) 500.000000 500.000000 **Normal ratings Emergency ratings** Summer (MVA)

Winter (MVA)

Conductor size and type

Shield wire size and type

2920.000000	3620.000000	
2920.000000	3620.000000	
Same as existing		
Utilize existing shield wire to extent practicable		

Rebuild line length 0.1 miles

Rebuild portion description 0.1 miles

Right of way

Use of existing ROW, no expansion anticipated

Construction responsibility BGE

Benefits/Comments Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$3,000,000.00

Component cost (in-service year) \$3,250,000.00

Transmission Line Upgrade Component

Component title Loop in existing Peach Bottom - Delta 500kV OH line circuit into NEETMA proposed Wiley Rd

500kV substation and use existing conductors

Project description Loop in existing Peach Bottom - Delta 500kV OH line circuit into NEETMA proposed Wiley Rd

500kV substation, use existing conductors on the section Peach Bottom - Wiley Rd

Impacted transmission line

New NEETMA-Wiley Rd substation to Peach Bottom 500 kV line

Point A Wiley Rd

Point B Peach Bottom Point C Terrain description Expect to utilize existing easements/utility owned property, no expansion anticipated **Existing Line Physical Characteristics** 500 Operating voltage Same as existing Conductor size and type Hardware plan description Utilize existing line hardware to extent practicable Tower line characteristics Utilize existing towers to extent practicable **Proposed Line Characteristics** Designed Operating Voltage (kV) 500.000000 500.000000 **Normal ratings Emergency ratings** Summer (MVA) 2338.000000 2931.000000 Winter (MVA) 2338.000000 2931.000000 Conductor size and type Same as existing Shield wire size and type Utilize existing shield wire to extent practicable Rebuild line length 0.1 miles Rebuild portion description Install new dead-end structures to loop the line into the wiley substation Right of way Use of existing ROW, no expansion anticipated **PECO** Construction responsibility

Benefits/Comments

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Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$3,000,000.00

Component cost (in-service year) \$3,250,000.00

Transmission Line Upgrade Component

Component title Loop in existing Peach Bottom - Delta 500kV OH line circuit into NEETMA proposed Wiley Rd

500kV substation and use existing conductors

Project description Loop in existing Peach Bottom - Delta 500kV OH line circuit into NEETMA proposed Wiley Rd

500kV sub, use existing conductors on the section Wiley Rd - Delta

Impacted transmission line

New NEETMA-Wiley Rd substation to Delta 500 kV line

Point A Wiley Rd

Point B Delta

Point C

Terrain description Expect to utilize existing easements/utility owned property, no expansion anticipated

Existing Line Physical Characteristics

Operating voltage 500

Conductor size and type Same as existing

Hardware plan description

Utilize existing line hardware to extent practicable

Tower line characteristics

Utilize existing towers to extent practicable

Proposed Line Characteristics

Voltage (kV)

Designed

500.000000 500.000000

Normal ratings Emergency ratings

Operating

Summer (MVA) 2338.000000 2931.000000

Winter (MVA) 2338.000000 2931.000000

Conductor size and type Same as existing

Shield wire size and type

Utilize existing shield wire to extent practicable

Rebuild line length 0.1 miles

Rebuild portion description 0.1 miles

Right of way

Use of existing ROW, no expansion anticipated

Construction responsibility PECO

Benefits/Comments Resolves reliability issues identified per PJM's Gen. Deliv. Process

Component Cost Details - In Current Year \$

Engineering & design Confidential - Competitive Information

Permitting / routing / siting Confidential - Competitive Information

ROW / land acquisition Confidential - Competitive Information

Materials & equipment Confidential - Competitive Information

Construction & commissioning Confidential - Competitive Information

Construction management Confidential - Competitive Information

Overheads & miscellaneous costs Confidential - Competitive Information

Contingency Confidential - Competitive Information

Total component cost \$3,000,000.00

Component cost (in-service year) \$3,250,000.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

None

Financial Information

Capital spend start date 01/2022

Construction start date 12/2024

Project Duration (In Months) 45

Cost Containment Commitment

Cost cap (in current year) Confidential - Competitive Information

Cost cap (in-service year)

Confidential - Competitive Information

Components covered by cost containment

- 1. Wiley Rd Substation 500 kV Proposer
- 2. Wheeler Substation 500/230 kV Proposer
- 3. Wiley Rd Substation Wheeler Substation 500 kV OH Proposer
- 4. Wheeler Substation Graceton Substation (Circuit 1 & 2) Proposer
- 5. Wheeler Substation Graceton Substation (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	Confidential - Competitive 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?	No
Is the proposer offering a Debt to Equity Ratio cap?	Yes

Additional cost containment measures not covered above

Additional Comments

None