Juniata - Cumberland - Williams Grove 230 kV upgrade project

General Information

Proposing entity name	Proprietary Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary Information
Company proposal ID	Proprietary Information
PJM Proposal ID	72
Project title	Juniata - Cumberland - Williams Grove 230 kV upgrade project
Project description	Rebuild the 14.2-mile Juniata - Cumberland 230kV line to double circuit 230 kV. For both circuits, utilize 1590 54/19 ACSS conductor or equivalent that provides ratings of 932 MVA SN, 1,075 MVA SE, 998 MVA WN, and 1,143 MVA WE. Install dual 144 count OPGW. Design for 250 degrees C operation to allow for application of DLR. At Juniata 230 kV, install a new double-bus double-breaker (DBDB) bay with two 3000 A breakers and four 3000 A MODs in the bay adjacent to the existing Juniata – Cumberland 230kV line DBDB bay. Terminate the new Juniata - Cumberland 230 kV # 2 line in the new bay. At Cumberland 230 kV, make the Transformer #3 bay breaker and a half (BAAH) by installing one 3000 A breaker and two 3000 A MODS. Terminate the new Juniata-Cumberland 230 kV # 2 line into the new bay position. Reconduct 7.75 miles of the Cumberland – Williams Grove 230 kV line with 1272 39/19 ACSS/TW with rating of 756 MVA SN, 896 MVA SE, 816 MVA WN and 956 MVA WE. Reinforce the towers as needed.
Email	Proprietary Information
Project in-service date	05/2029
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary Information

Project Components

1. Juniata 230 kV Yard Upgrade
2. Cumberland 230 kV Yard Upgrade
3. Cumberland - Williams Grove 230 kV line reconductor
4. Juniata - Cumberland 230 kV DCT line

Substation Upgrade Component

Component title	Juniata 230 kV Yard Upgrade
Project description	Proprietary Information
Substation name	Juniata
Substation zone	PPL
Substation upgrade scope	At Juniata 230 kV, install a new double-bus double-breaker (DBDB) bay with two 3000 A breakers and four 3000 A MODs in the bay adjacent to the existing Juniata – Cumberland 230kV line DBDB bay. Terminate the new Juniata - Cumberland 230 kV # 2 line in the new bay.

Transformer Information

None

New equipment description	Double-bus double-breaker (DBDB) bay Two 3000 A breakers Four 3000 A MODs
Substation assumptions	Available footprint for new bay at existing station owned by Proposer is sufficient to accommodate this project.
Real-estate description	No substation expansion required. Existing owned property sufficient to accommodate this project.
Construction responsibility	Proprietary Information
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information

ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	$3,200,000.00
Component cost (in-service year)	$3,516,387.62

Substation Upgrade Component

Component title	Cumberland 230 kV Yard Upgrade
Project description	Proprietary Information
Substation name	Cumberland
Substation zone	PPL
Substation upgrade scope	At Cumberland 230 kV, make the Transformer #3 bay breaker and a half (BAAH) by installing one 3000 A breaker and two 3000 A MODS. Terminate the new Juniata-Cumberland 230 kV # 2 line into the new bay position.

Transformer Information

None

New equipment description	One 3000 A breaker Two 3000 A MODS
Substation assumptions	Available footprint for new bay at existing station owned by Proposer is sufficient to accommodate this project.
Real-estate description	No substation expansion required. Existing owned property sufficient to accommodate this project.
Construction responsibility	Proprietary Information

Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information
ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	$3,200,000.00
Component cost (in-service year)	$3,516,387.62

Transmission Line Upgrade Component

Component title	Cumberland - Williams Grove 230 kV line reconductor
Project description	Proprietary Information
Impacted transmission line	Cumberland - Williams Grove 230 kV line
Point A	Cumberland
Point B	Williams Grove
Point C	
Terrain description	Existing transmission corridor. Rolling hills with established access points.
Existing Line Physical Characteristics	
Operating voltage	230

Conductor size and type	1033.5 ACSR 54/7 conductor
Hardware plan description	The new line will be installed with high temperature ACSS hardware, no hardware will be reused.
Tower line characteristics	Single circuit 230 kV towers that are in good condition and part of our inspection and maintenance plan. See attachment "230kV Typical Trans Structure.pdf".

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	756.000000	896.000000
Winter (MVA)	816.000000	956.000000

Conductor size and type	1272 39/19 ACSS/TW
Shield wire size and type	1/2 inch EHS steel
Rebuild line length	7.75
Rebuild portion description	Reconduct 7.75 miles of the Cumberland – Williams Grove 230 kV line with 1272 39/19 ACSS/TW with rating of 756 MVA SN, 896 MVA SE, 816 MVA WN and 956 MVA WE. Reinforce the towers as needed.
Right of way	Existing ROW is 150 ft in width and will be utilized for this reconductor work. No expansion is necessary.
Construction responsibility	Proprietary Information
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	Proprietary Information
Permitting / routing / siting	Proprietary Information

ROW / land acquisition	Proprietary Information
Materials & equipment	Proprietary Information
Construction & commissioning	Proprietary Information
Construction management	Proprietary Information
Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	$14,885,000.00
Component cost (in-service year)	$16,356,696.81

Transmission Line Upgrade Component

Component title	Juniata - Cumberland 230 kV DCT line
Project description	Proprietary Information
Impacted transmission line	Juniata - Cumberland 230 kV line
Point A	Juniata
Point B	Cumberland
Point C	
Terrain description	Existing transmission corridor. Rolling hills with established access points.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	1272 ACSS 39/19 conductor
Hardware plan description	Line will be removed and reinstalled. No hardware will be reused.
Tower line characteristics	See attachment "230kV Typical Trans Structure.pdf".

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	932.000000	1075.000000
Winter (MVA)	998.000000	1143.000000
Conductor size and type	1590 54/19 ACSS conductor for both circuits	
Shield wire size and type	dual 144 count OPGW	
Rebuild line length	14.2 miles	
Rebuild portion description	Rebuild the 14.2-mile Juniata - Cumberland 230kV line to double circuit 230 kV. For both circuits, utilize 1590 54/19 ACSS conductor or equivalent that provides ratings of 932 MVA SN, 1,075 MVA SE, 998 MVA WN, and 1,143 MVA WE. Install dual 144 count OPGW. Design for 250 degrees C operation to allow for application of DLR.	
Right of way	Existing ROW is 150 ft in width and will be utilized for the rebuild. No expansion is necessary.	
Construction responsibility	Proprietary Information	
Benefits/Comments	Proprietary Information	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary Information	
Permitting / routing / siting	Proprietary Information	
ROW / land acquisition	Proprietary Information	
Materials & equipment	Proprietary Information	
Construction & commissioning	Proprietary Information	
Construction management	Proprietary Information	

Overheads & miscellaneous costs	Proprietary Information
Contingency	Proprietary Information
Total component cost	$57,300,000.00
Component cost (in-service year)	$62,965,315.89

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2024W1-GD-S490	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-GD-S492	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-GD-S491	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-GD-S493	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-GD-S441	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-GD-S102	208004	JUNI	207955	DAUP TR2	1	230	229	Summer Gen Deliv	Included
2024W1-32GD-S129	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included
2024W1-32GD-S130	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included
2024W1-32GD-S131	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included
2024W1-32GD-S132	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included
2024W1-32GD-S133	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included
2024W1-32GD-S134	208004	JUNI	207955	DAUP TR2	1	230	229	2032 Summer Gen Deliv	Included

New Flowgates

Proprietary Information

Financial Information

Capital spend start date	07/2025
Construction start date	02/2028
Project Duration (In Months)	46

Cost Containment Commitment

Cost cap (in current year)	Proprietary Information
Cost cap (in-service year)	Proprietary Information

Components covered by cost containment

1. Juniata 230 kV Yard Upgrade - PPL
2. Cumberland 230 kV Yard Upgrade - PPL
3. Cumberland - Williams Grove 230 kV line reconductor - PPL
4. Juniata - Cumberland 230 kV DCT line - PPL

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	No
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	No
Taxes	No
AFUDC	No
Escalation	No

Additional Information	Proprietary Information
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary Information

Additional Comments

None