Pierce Brook Substation, Install 2nd 345 kV Reactor

General Information

Proposing entity name	Company name appears in this field
Company proposal ID	Company name appears in this field
PJM Proposal ID	855
Project title	Pierce Brook Substation, Install 2nd 345 kV Reactor
Project description	Install a second 125 MVAR 345 kV shunt reactor and associated equipment at Pierce Brook Substation. Install a 345 kV breaker on the high side of the #1 345/230 kV transformer.
Project in-service date	05/2025
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Reactor provides Transmission Operations with voltage control of the 345 kV system. Under maintenance or unplanned outage conditions the second reactor allows Transmission Operations to continue controlling the 345 kV voltage.

Project Components

1. Install a second 125 MVAR 345 kV reactor at Pierce Brook

Substation Upgrade Component

Component title	Install a second 125 MVAR 345 kV reactor at Pierce Brook
Substation name	Pierce Brook Substation
Substation zone	Penelec

Substation upgrade scope	Install a second 125 MVAR 345 kV shunt reactor and associated facilities. Install a 345 kV breaker on the high side of the #1 345/230 kV transformer.

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	The new 345 kV shunt reactor will be rated for 125 MVAR absorption. Transformer high side circuit breaker and all associated equipment will be sized such that the loadability of all lines and transformers will be unchanged.
Substation assumptions	- Expanding the substation fence to fit the reactor. - Moving the existing #1 345/230 kV transformer for clearance to install the high side breaker. - FE will acquire additional land from the adjacent property owner. - Cost for major equipment is based on a similar project in 2016 at this site.
Real-estate description	- Single property owner for required expansion of ~1.8 acres.
Construction responsibility	Company name appears in the Construction Responsibility
Additional comments	N/A

Component Cost Details - In Current Year $

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary

Contingency	This information is considered confidential and proprietary
Total component cost	$8,077,103.87
Component cost (in-service year)	$8,937,224.67

Congestion Drivers

None

Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
N2-WVM15	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage Mag(Winter)
N2-WVM16	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage Mag(Winter)
N2-WVM17	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage Mag(Winter)
N2-WVM18	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage Mag(Winter)
N2-WVM19	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage Mag(Winter)
N2-SVM52	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage (Summer)
N2-SVM53	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage (Summer)
N2-SVM54	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage (Summer)
N2-SVM55	200942	26PIERCEBRK	200942	26PIERCEBRK	0	345	226	N-1-1 Voltage (Summer)

New Flowgates

None

Financial Information

Capital spend start date	06/2023
Construction start date	08/2024
Project Duration (In Months)	23

Additional comments

None