

# Polaris-Westar Rebuild

## General Information

Proposing entity name	AEPSCT
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	AEP_N
PJM Proposal ID	92
Project title	Polaris-Westar Rebuild
Project description	Project will rebuild the majority of the 3.7 mile 138 kV line between Polaris and Westar stations. 12 structures installed in 2023 will be reused. Work will also be performed at Polaris station to replace station equipment to raise the overall rating of the line.
Email	nckoehler@aep.com
Project in-service date	06/2027
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Majority of the structures to be replaced in the rebuild were installed in 1977.

## Project Components

1. Polaris-Westar 138 kV Rebuild
2. Polaris Station Equipment Replacement

## Transmission Line Upgrade Component

Component title	Polaris-Westar 138 kV Rebuild
-----------------	-------------------------------

Project description	Rebuild 138 kV line between Polaris and Westar stations.
Impacted transmission line	Polaris-Westar 138 kV
Point A	Polaris
Point B	Westar
Point C	
Terrain description	Urban and flat terrain.

**Existing Line Physical Characteristics**

Operating voltage	138
Conductor size and type	636 ACSR 26/7 GROSBEAK, 795 ACSR 45/7 TERN
Hardware plan description	All the existing hardware and structures will be replaced with the exception of 12 structures installed in 2023.
Tower line characteristics	There are 3 structures with at least one open structural condition on the Polaris – Westar 138kV Circuit. Further, there are 11 structures with at least one open structural or hardware condition, which relates to 15% of the structures on the circuit. Most are missing moldings or guy guards. 56% of structures are 90s era wood poles or earlier.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	138.000000	138.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	389.000000	440.000000
Winter (MVA)	431.000000	477.000000
Conductor size and type	1590 ACSS 54/19 FALCON	
Shield wire size and type	GUINEA 159 ACSR 12/7	

Rebuild line length	f3.7 miles
Rebuild portion description	84% of the line will be rebuilt. Poles installed in 2023 (Strs. 142, 144, 146, 148, 150, 152, 152-2, 152-3, 154-1, 154-2, 154-8, 154-9) are in good condition and will be reused.
Right of way	Existing ROW rights will be used. If needed, supplemental easements will be obtained.
Construction responsibility	AEP
Benefits/Comments	

**Component Cost Details - In Current Year \$**

Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	\$11,965,695.10
Component cost (in-service year)	\$11,965,695.10

**Substation Upgrade Component**

Component title	Polaris Station Equipment Replacement
Project description	Replace bus work, risers and switches at Polaris station.
Substation name	Polaris
Substation zone	205 - AEP

Substation upgrade scope

Upgrade 1.5 inch diameter aluminum bus tubing at Polaris 138 kV. Upgrade (4) 1200A 61kA disconnect switches. Upgrade 1590 KCM AAC, 61-Str station conductor.

## Transformer Information

None

New equipment description

3 inch diameter aluminum bus tubing 584/692/713/743/824/849 MVA (SN/SE/LD1/WN/WE/LD2)  
2500A 100kA disconnect switches 685/751/774/889/944/973 MVA (SN/SE/LD1/WN/WE/LD2)  
2-1700 KCM AAC, 61-Str 696/814/839/881/968/998 MVA (SN/SE/LD1/WN/WE/LD2)

Substation assumptions

Outages to perform work will be available.

Real-estate description

N/A - all work to be performed inside station fence and on existing AEP property

Construction responsibility

AEP

Benefits/Comments

## Component Cost Details - In Current Year \$

Engineering & design

Detailed cost breakdown

Permitting / routing / siting

Detailed cost breakdown

ROW / land acquisition

Detailed cost breakdown

Materials & equipment

Detailed cost breakdown

Construction & commissioning

Detailed cost breakdown

Construction management

Detailed cost breakdown

Overheads & miscellaneous costs

Detailed cost breakdown

Contingency

Detailed cost breakdown

Total component cost

\$230,000.00

Component cost (in-service year)

\$230,000.00

## 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
2023W2-N2-ST10	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST11	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST12	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST14	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST23	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST41	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST36	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-WT7	243553	05POLARS	243590	05WESTAR	1	138	205	Winter N-1-1	Included
2023W2-N2-WT8	243553	05POLARS	243590	05WESTAR	1	138	205	Winter N-1-1	Included

## New Flowgates

None

## Financial Information

Capital spend start date 06/2024

Construction start date 06/2026

Project Duration (In Months) 36

## Additional Comments

None