

Dragoon Transformer and Line Addition

General Information

Proposing entity name	AEPSCT
Company proposal ID	AEP_F
PJM Proposal ID	308
Project title	Dragoon Transformer and Line Addition
Project description	AEP is proposing to install 1.7 miles of 795 ASCR 138kV conductor along the other side of Dragoon Tap 138 kV line, which is currently double circuit tower with one position open. Additionally, AEP proposes to install a 2nd 138/34.5kV transformer at Dragoon, install a high side circuit switcher on the current transformer at Dragoon Station, and install 2-138kV line breakers on the Dragoon-Jackson 138kV and Dragoon-Twin Branch 138kV lines. The Dragoon-Jackson 138kV branch ratings will be (219/251/277/303). The Dragoon-Twin Branch 138kV ratings will be (219/251/277/303).
Project in-service date	08/2022
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	[REDACTED]

Project Components

1. Dragoon Station Line and Transformer Addition
2. Dragoon-Dragoon Tap Circuit Addition

Substation Upgrade Component

Component title	Dragoon Station Line and Transformer Addition
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Substation name	Dragoon Station
Substation zone	205 - AEP
Substation upgrade scope	Install new 138kV lattice adder box bay, (1) transformer, (1) grounding transformer, (2) circuit switchers, (2) 138kV circuit breakers, (1) 34.5kV circuit breaker, (1) station service transformer.

Transformer Information

	Name	Capacity (MVA)		
Transformer	Dragoon Transformer #2	90		
	High Side	Low Side	Tertiary	
Voltage (kV)	138	69	34.5	
New equipment description	(1) 54/72/90 MVA 138/69/34.5kV transformer, (1) 34.5kV grounding transformer, (2) 145kV 3000A circuit switchers, (2) 145kV 3000A breakers, (1) 72.5kV 3000A breaker, (2) 25kVA & (1) 75kVA station service transformers			
Substation assumptions	Line outages will be available. Transformer low side breaker is rated at 69kV and operated at 34.5kV			
Real-estate description	N/A. All work to be done on existing substation property.			
Construction responsibility	AEP			
Additional 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	\$4,297,845.17
Component cost (in-service year)	\$.00

Transmission Line Upgrade Component

Component title	Dragoon-Dragoon Tap Circuit Addition
Impacted transmission line	Dragoon-Dragoon Tap
Point A	Dragoon
Point B	Dragoon Tap
Point C	
Terrain description	Mostly flat agricultural fields,roughly 200' elevation change, no transmission line crossings occur.

Existing Line Physical Characteristics

Operating voltage	138
Conductor size and type	None. Project is on the vacant side of a double circuit tower line.
Hardware plan description	New hardware will be installed
Tower line characteristics	The existing lattace towers were installed in 1959, The existing towers were designed to support the addition of a second circuit. Additionally, a computer analysis supports the original design criteria is met.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000

	Normal ratings	Emergency ratings
Summer (MVA)	257.000000	359.000000
Winter (MVA)	324.000000	403.000000
Conductor size and type	795,000CM ACSR 26/7 Drake	
Shield wire size and type	Existing shield wire will remain, 7#8 Aluomoweld	
Rebuild line length	1.7 miles	
Rebuild portion description	The second circuit on the tower, currently open, will be strung for the full line length, ~1.7 miles	
Right of way	No new right-of-way will be required.	
Construction responsibility	AEP	
Additional 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	\$596,029.83
Component cost (in-service year)	\$.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
AEP-T220	246379	05AM GENRL_2	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T235	246379	05AM GENRL_2	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T236	246379	05AM GENRL_2	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T224	246379	05AM GENRL_2	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T7	246379	05AM GENRL_2	246418	05TWIN BRCH2	1	35	205	FERC 715 Thermal
AEP-T8	246379	05AM GENRL_2	246418	05TWIN BRCH2	1	35	205	FERC 715 Thermal
AEP-T9	246379	05AM GENRL_2	246418	05TWIN BRCH2	1	35	205	FERC 715 Thermal
AEP-T10	246379	05AM GENRL_2	246418	05TWIN BRCH2	1	35	205	FERC 715 Thermal
AEP-T11	246379	05AM GENRL_2	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T241	246300	05BEIGER	246368	05VIRGIL S	1	35	205	FERC 715 Thermal
AEP-T242	246300	05BEIGER	246368	05VIRGIL S	1	35	205	FERC 715 Thermal
AEP-T245	246300	05BEIGER	246368	05VIRGIL S	1	35	205	FERC 715 Thermal
AEP-T246	246300	05BEIGER	246368	05VIRGIL S	1	35	205	FERC 715 Thermal
AEP-T247	246300	05BEIGER	246415	05KLINE	1	35	205	FERC 715 Thermal
AEP-T248	246300	05BEIGER	246415	05KLINE	1	35	205	FERC 715 Thermal
AEP-T249	246300	05BEIGER	246415	05KLINE	1	35	205	FERC 715 Thermal
AEP-T254	246300	05BEIGER	246415	05KLINE	1	35	205	FERC 715 Thermal
AEP-T255	246389	05CAP AV	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T275	246389	05CAP AV	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T276	246389	05CAP AV	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T263	246389	05CAP AV	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T264	246389	05CAP AV	246908	05AM GENRL_1	1	35	205	FERC 715 Thermal
AEP-T282	246313	05DODGE SS	246375	0512TH ST	1	35	205	FERC 715 Thermal

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
AEP-T283	246313	05DODGE SS	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T378	246313	05DODGE SS	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T379	246313	05DODGE SS	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T382	246314	05DRAGOON	246341	05RAILROAD	1	35	205	FERC 715 Thermal
AEP-T383	246314	05DRAGOON	246341	05RAILROAD	1	35	205	FERC 715 Thermal
AEP-T392	246322	05GRAPE RD	246357	05SOUTHBEN	1	35	205	FERC 715 Thermal
AEP-T386	246322	05GRAPE RD	246357	05SOUTHBEN	1	35	205	FERC 715 Thermal
AEP-T387	246322	05GRAPE RD	246357	05SOUTHBEN	1	35	205	FERC 715 Thermal
AEP-T408	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T411	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T393	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T394	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T395	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T396	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T397	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T400	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T401	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T402	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T417	246415	05KLINE	247609	05KLINE 2EQ	2	35/999	205	FERC 715 Thermal
AEP-T435	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T436	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T427	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T428	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T419	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T420	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T439	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T440	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal
AEP-T441	246357	05SOUTHBEN	246353	05S.BEND 5EQ	5	35/999	205	FERC 715 Thermal

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
AEP-T461	246368	05VIRGIL S	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T462	246368	05VIRGIL S	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T463	246368	05VIRGIL S	246375	0512TH ST	1	35	205	FERC 715 Thermal
AEP-T465	246368	05VIRGIL S	246375	0512TH ST	1	35	205	FERC 715 Thermal

New Flowgates

None

Financial Information

Capital spend start date 01/2021

Construction start date 06/2021

Project Duration (In Months) 19

Additional comments

None