AEP incumbent upgrades for Portfolio #1, 2 & 3

General Information

Proposing entity name	Company confidential and proprietary information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Company confidential and proprietary information
Company proposal ID	Company confidential and proprietary information
PJM Proposal ID	81
Project title	AEP incumbent upgrades for Portfolio #1, 2 & 3
Project description	
Email	Company confidential and proprietary information
Project in-service date	12/2029
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Company confidential and proprietary information

Project Components

1. Broadford 765 kV Upgrade
2. Cloverdale 765 Upgrade
3. Museville - Smith Mountain 138 Sag Study
4. Smith Mountain – Rock Castle - Moneta 138kV Sag Study
5. Smith Mountain 138 kV Upgrade
6. Smith Mountain - Redeye - Candler's Mountain - Opossum Creek 138 kV Reconductor

7. Candler's Mountain 138 kV
8. Opposum Creek 138 kV
9. Claytor Station Upgrade
10. Claytor - S Christiansburg - Tech Drive 138 kV Sag Study
11. Roanoke 138 kV Station Upgrade
12. Reusens – Monel – Gomingo 138kV Sag Study
13. Leesville Station Upgrade 138 kV
14. Otter 138 kV Station Upgrade
15. Altavista - Otter - Johnson Mountain - New London 138 kV Reconductor
16. Joshua Falls Station Upgrade
17. Fieldale – Thornton 138kV Reconductor
18. Fieldale – Oak Level – Grassy Hill 138 kV Sag Study

Substation Upgrade Component

Component title	Broadford 765 kV Upgrade
Project description	Company confidential and proprietary information
Substation name	Broadford Station
Substation zone	AEP
Substation upgrade scope	Replace Jackson's Ferry CB Q2

Transformer Information

None

New equipment description	New CB Q2
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information

Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$4,500,000.00
Component cost (in-service year)	$5,064,790.00

Substation Upgrade Component

Component title	Cloverdale 765 Upgrade
Project description	Company confidential and proprietary information
Substation name	Cloverdale Station
Substation zone	AEP
Substation upgrade scope	Replace Cloverdale line Trap - Phase 1

Transformer Information

None

New equipment description	New line trap

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$200,000.00
Component cost (in-service year)	$225,102.00

Transmission Line Upgrade Component

Component title	Museville - Smith Mountain 138 Sag Study
Project description	Company confidential and proprietary information
Impacted transmission line	Museville - Smith Mountain 138
Point A	Museville Station
Point B	Smith Mountain

Point C

Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	329.000000	361.000000
Winter (MVA)	427.000000	427.000000

Conductor size and type	1033.5 ACSR Ortolan Conductor
Shield wire size and type	unknown
Rebuild line length	17.5
Rebuild portion description	No rebuild of existing facilities is anticipated at this time
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information

Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$1,750,000.00
Component cost (in-service year)	$1,969,640.00

Transmission Line Upgrade Component

Component title	Smith Mountain – Rock Castle - Moneta 138kV Sag Study
Project description	Company confidential and proprietary information
Impacted transmission line	Smith Mountain – Rock Castle - Moneta 138kV
Point A	Smith Mountain Station
Point B	Rock Castle Station
Point C	Moneta Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138

Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	438.000000	481.000000
Winter (MVA)	519.000000	604.000000

Conductor size and type	556.5 ACSR Dove Conductor
Shield wire size and type	unknown
Rebuild line length	16
Rebuild portion description	No rebuild of existing facilities is anticipated at this time
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information

ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$1,600,000.00
Component cost (in-service year)	$1,800,814.00

Substation Upgrade Component

Component title	Smith Mountain 138 kV Upgrade
Project description	Company confidential and proprietary information
Substation name	Smith Mountain Station
Substation zone	AEP
Substation upgrade scope	Replace 795 KCM AAC, 37-Str. 795 KCM AAC, 37-Str. PH A B2S1 B2S2 BS1 BS2

Transformer Information

None

New equipment description	795 KCM AAC, 37-Str. 795 KCM AAC, 37-Str. PH A B2S1 B2S2 BS1 BS2
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information

Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$400,000.00
Component cost (in-service year)	$450,204.00

Transmission Line Upgrade Component

Component title	Smith Mountain - Redeye - Candler's Mountain - Opossum Creek 138 kV Reconductor
Project description	Company confidential and proprietary information
Impacted transmission line	Smith Mountain - Redeye - Candler's Mountain - Opossum Creek 138 kV
Point A	Smith Mountain Station
Point B	Redeye Station
Point C	Candler's Mountain Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown

Hardware plan description	It is assumed no hardware could be reused.	
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	548.000000	548.000000
Winter (MVA)	548.000000	548.000000
Conductor size and type	556.5 ACSR Dove Conductor/ 795 ACSR Drake Conductor	
Shield wire size and type	unknown	
Rebuild line length	34	
Rebuild portion description	Reconductor 34 miles of Smith Mountain - Redeye - Candler's Mountain - Opossum Creek 138 kV	
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.	
Construction responsibility	Company confidential and proprietary information	
Benefits/Comments	Company confidential and proprietary information	
Component Cost Details - In Current Year $		
Engineering & design	Company confidential and proprietary information	
Permitting / routing / siting	Company confidential and proprietary information	
ROW / land acquisition	Company confidential and proprietary information	

Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$40,800,000.00
Component cost (in-service year)	$45,920,759.00

Substation Upgrade Component

Component title	Candler's Mountain 138 kV
Project description	Company confidential and proprietary information
Substation name	Candler's Mountain Station
Substation zone	AEP
Substation upgrade scope	Replace 1590 KCM AAC, 61-Str. Replace MOAB "Y" SMITH MTN LINE

Transformer Information

None

New equipment description	1590 KCM AAC, 61-Str. MOAB "Y" SMITH MTN LINE
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$200,000.00
Component cost (in-service year)	$225,102.00

Substation Upgrade Component

Component title	Opposum Creek 138 kV
Project description	Company confidential and proprietary information
Substation name	Opposum Creek Station
Substation zone	AEP
Substation upgrade scope	Replace Opossum Creek Switch

Transformer Information

None

New equipment description	Replacement Switch
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.

Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$100,000.00
Component cost (in-service year)	$112,551.00

Substation Upgrade Component

Component title	Claytor Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Claytor Station
Substation zone	AEP
Substation upgrade scope	Replace MOAB Claytor W

Transformer Information

None

New equipment description	Replace MOAB Claytor W

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$200,000.00
Component cost (in-service year)	$225,102.00

Transmission Line Upgrade Component

Component title	Claytor - S Christiansburg - Tech Drive 138 kV Sag Study
Project description	Company confidential and proprietary information
Impacted transmission line	Claytor - S Christiansburg - Tech Drive 138 kV
Point A	Claytor Station
Point B	S. Christianburg Station

Point C	Tech Drive Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	187.000000	240.000000
Winter (MVA)	247.000000	285.000000

Conductor size and type	1033.5 ACSR Ortolan Conductor
Shield wire size and type	unknown
Rebuild line length	17.25
Rebuild portion description	No rebuild of existing facilities is anticipated at this time
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information

Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$1,725,000.00
Component cost (in-service year)	$1,941,503.00

Substation Upgrade Component

Component title	Roanoke 138 kV Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Roanoke Station
Substation zone	AEP
Substation upgrade scope	Replace 795 KCM AAC, 37-Str.

Transformer Information

None

New equipment description	Replace 795 KCM AAC, 37-Str.

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$100,000.00
Component cost (in-service year)	$112,551.00

Transmission Line Upgrade Component

Component title	Reusens – Monel – Gomingo 138kV Sag Study
Project description	Company confidential and proprietary information
Impacted transmission line	Reusens – Monel – Gomingo 138kV
Point A	Reusens Station
Point B	Monel Station

Point C	Gomingo Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	388.000000	499.000000
Winter (MVA)	492.000000	576.000000

Conductor size and type	1033.5 ACSR Ortolan Conductor
Shield wire size and type	unknown
Rebuild line length	7.5
Rebuild portion description	No rebuild of existing facilities is anticipated at this time
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information

Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$250,000.00
Component cost (in-service year)	$281,377.00

Substation Upgrade Component

Component title	Leesville Station Upgrade 138 kV
Project description	Company confidential and proprietary information
Substation name	Leesville Station
Substation zone	AEP
Substation upgrade scope	Replace 795 KCM AAC, 37-Str. IPS Sch. 40 1272 KCM AAC, 61-Str. 1272 KCM AAC, 61-Str. PH A,B,C ALTA VISTA CB-A BUS DISC ALTA VISTA CB-A LINE DISC Wavetrap (1200A) Relay Thermal Limit 1356 Amps

Transformer Information

None

New equipment description	795 KCM AAC, 37-Str. IPS Sch. 40 1272 KCM AAC, 61-Str. 1272 KCM AAC, 61-Str. PH A,B,C ALTA VISTA CB-A BUS DISC ALTA VISTA CB-A LINE DISC Wavetrap (1200A) Relay Thermal Limit 1356 Amps
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$600,000.00
Component cost (in-service year)	$675,305.00

Substation Upgrade Component

Component title	Otter 138 kV Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Otter Station

Substation zone	AEP
Substation upgrade scope	Replace 795 KCM AAC, 37-Str.

Transformer Information

None

New equipment description	Replace 795 KCM AAC, 37-Str.
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$100,000.00
Component cost (in-service year)	$112,551.00

Transmission Line Upgrade Component

Component title	Altavista - Otter - Johnson Mountain - New London 138 kV Reconductor
Project description	Company confidential and proprietary information
Impacted transmission line	Altavista - Otter - Johnson Mountain - New London 138 kV
Point A	Altavista Station
Point B	Otter Station
Point C	Johnson Mountain Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	498.000000	498.000000
Winter (MVA)	617.000000	617.000000
Conductor size and type	397.5 ACSR Lark Conductor	
Shield wire size and type	unknown	

Rebuild line length	14.4
Rebuild portion description	Reconductor 14.4 miles of Altavista - Otter - Johnson Mountain - New London 138 kV
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$17,280,000.00
Component cost (in-service year)	$19,448,792.00

Substation Upgrade Component

Component title	Joshua Falls Station Upgrade
Project description	Company confidential and proprietary information
Substation name	Joshua Falls 138 kV Station
Substation zone	AEP

Substation upgrade scope	Replace CB H CB H1 2-2000 KCM AAC, 91-Str. CB-H DISC HS1 CB-H DISC HS2 CB-H DISC H1S1 CB-H DISC H1S2 2 - 2000 KCM AAC, 91-Str 4.0 IPS Sch. 40 SW T1S2 Install 2nd 765/138 XFR

Transformer Information

None

New equipment description	Replace CB H CB H1 2-2000 KCM AAC, 91-Str. CB-H DISC HS1 CB-H DISC HS2 CB-H DISC H1S1 CB-H DISC H1S2 2 - 2000 KCM AAC, 91-Str 4.0 IPS Sch. 40 SW T1S2 Install 2nd 765/138 XFR
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment.
Real-estate description	All necessary land rights are acquired.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information

Component Cost Details - In Current Year $

Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$40,000,000.00
Component cost (in-service year)	$45,020,352.00

Transmission Line Upgrade Component

Component title	Fieldale – Thornton 138kV Reconductor
Project description	Company confidential and proprietary information
Impacted transmission line	Fieldale – Thornton 138kV
Point A	Fieldale Station
Point B	Thorton Station
Point C	
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	251.000000	335.000000
Winter (MVA)	317.000000	381.000000
Conductor size and type	397.5 ACSR Lark Conductor	

Shield wire size and type	unknown
Rebuild line length	20.5
Rebuild portion description	Reconductor 20.5 miles of Fieldale – Thornton 138kV
Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$24,600,000.00
Component cost (in-service year)	$27,687,517.00

Transmission Line Upgrade Component

Component title	Fieldale – Oak Level – Grassy Hill 138 kV Sag Study
Project description	Company confidential and proprietary information
Impacted transmission line	Fieldale – Oak Level – Grassy Hill 138 kV

Point A	Fieldale Station
Point B	Oak Level Station
Point C	Grassy Hill Station
Terrain description	Area terrain is gently rolling, primarily crossing large agricultural tracts
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Unknown
Hardware plan description	It is assumed no hardware could be reused.
Tower line characteristics	The condition of the existing line is assumed to be in good working order. Structure loading at adjacent structures would remain unchanged due to proposing structure locations on cL and near existing tower locations.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	251.000000	251.000000
Winter (MVA)	317.000000	317.000000
Conductor size and type	1033.5 ACSR Ortolan Conductor	
Shield wire size and type	unknown	
Rebuild line length	26.15	
Rebuild portion description	No rebuild of existing facilities is anticipated at this time	

Right of way	It is anticipated that the Proposed Solution would not require new ROW; however, current landowners that are crossed by the existing transmission line would need to be notified of the proposed upgrades.
Construction responsibility	Company confidential and proprietary information
Benefits/Comments	Company confidential and proprietary information
Component Cost Details - In Current Year $	
Engineering & design	Company confidential and proprietary information
Permitting / routing / siting	Company confidential and proprietary information
ROW / land acquisition	Company confidential and proprietary information
Materials & equipment	Company confidential and proprietary information
Construction & commissioning	Company confidential and proprietary information
Construction management	Company confidential and proprietary information
Overheads & miscellaneous costs	Company confidential and proprietary information
Contingency	Company confidential and proprietary information
Total component cost	$2,615,000.00
Component cost (in-service year)	$2,943,206.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Financial Information

Capital spend start date	02/2025
Construction start date	04/2026
Project Duration (In Months)	58

Additional Comments

None