Upgrades to AEP 138kV and Dominion 230kV transmission lines

General Information

Proposing entity name	Proprietary business information.
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary business information.
Company proposal ID	Proprietary business information.
PJM Proposal ID	944
Project title	Upgrades to AEP 138kV and Dominion 230kV transmission lines
Project description	Project includes brownfield upgrades to AEP 138kV lines and Dominion 230kV lines. Recommend PJM evaluate this solution in conjunction with Proposals 768, 146, and 992 to see how this proposal correlates with the larger solutions proposed. Proposals 768, 146, and 992 do not require any of these brownfield upgrades to be viable, holistic solutions to violations targeted in 2024 RTEP Window 1.
Email	Proprietary business information.
Project in-service date	06/2029
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Proprietary business information

Project Components

1. 11BF-1) Bremo - Newbus 6-wire
2. 11BF-2) Newbus - Scottsville 6-wire
3. 11BF-3) Scottsville - Soapstone 6-wire

4. 11BF-4) Soapstone - James River 6-wire
5. 11BF-5) James River - Colleen 6-wire
6. 11BF-6) Colleen - Clifford 6-wire
7. 11BF-7) Clifford - Boxwood 6-wire
8. 4BF-1) Four Rivers - St John uprate
9. 6BF-1) Chesterfield - Basin uprate
10. 7BF-1) Oakgrove - AF1-114 uprate
11. 7BF-10) Comorn - Birchwood uprate
12. 7BF-2) Northern Neck - Sanders uprate
13. 7BF-3) Sanders-Westmoreland uprate
14. 7BF-4) Westmoreland - Oak Grove uprate
15. 7BF-5) AF1-114 - Dahlgren uprate
16. 7BF-6) Dahlgren - Arnolds Corner
17. 7BF-7) Arnolds Corner - Comorn
18. 9BF-1) Thelma - Lakeview #1 and #2

Transmission Line Upgrade Component

Component title	11BF-1) Bremo - Newbus 6-wire
Project description	Proprietary business information.
Impacted transmission line	Bremo - Newbus
Point A	Bremo
Point B	Newbus
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.
Existing Line Physical Characteristics	
Operating voltage	138

Conductor size and type	Per incumbent system	
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware	
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	7.2	
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	

Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$2,880,000.00
Component cost (in-service year)	$3,258,456.00

Transmission Line Upgrade Component

Component title	11BF-2) Newbus - Scottsville 6-wire
Project description	Proprietary business information.
Impacted transmission line	Newbus - Scottsville
Point A	Newbus
Point B	Scottsville
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed
Proposed Line Characteristics	

	Designed	Operating

Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	7.2	
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	
Contingency	Proprietary business information.	
Total component cost	$2,880,000.00	

Component cost (in-service year)	$3,258,456.00

Transmission Line Upgrade Component

Component title	11BF-3) Scottsville - Soapstone 6-wire
Project description	Proprietary business information.
Impacted transmission line	Scottsville - Soapstone
Point A	Scottsville
Point B	Soapstone
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.

Existing Line Physical Characteristics

Operating voltage	138
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	

Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	8.3
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.
Right of way	Use of existing ROW to extent practicable
Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$3,320,000.00
Component cost (in-service year)	$3,756,275.00

Transmission Line Upgrade Component

Component title	11BF-4) Soapstone - James River 6-wire
Project description	Proprietary business information.
Impacted transmission line	Soapstone - James River

Point A	Soapstone
Point B	James River
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.

Existing Line Physical Characteristics

Operating voltage	138
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	8.3
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.
Right of way	Use of existing ROW to extent practicable

Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$3,320,000.00
Component cost (in-service year)	$3,756,275.00

Transmission Line Upgrade Component

Component title	11BF-5) James River - Colleen 6-wire
Project description	Proprietary business information.
Impacted transmission line	James River - Colleen
Point A	James River
Point B	Colleen
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.

Existing Line Physical Characteristics		
Operating voltage	138	
Conductor size and type	Per incumbent system	
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware	
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	1.44	
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	

ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$576,000.00
Component cost (in-service year)	$651,691.00

Transmission Line Upgrade Component

Component title	11BF-6) Colleen - Clifford 6-wire
Project description	Proprietary business information.
Impacted transmission line	Colleen - Clifford
Point A	Colleen
Point B	Clifford
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.
Existing Line Physical Characteristics	
Operating voltage	138
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000
Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	3.77	
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	

Contingency	Proprietary business information.
Total component cost	$1,508,000.00
Component cost (in-service year)	$1,706,164.00

Transmission Line Upgrade Component

Component title	11BF-7) Clifford - Boxwood 6-wire
Project description	Proprietary business information.
Impacted transmission line	Clifford - Boxwood
Point A	Clifford
Point B	Boxwood
Point C	
Terrain description	Work will occur within existing ROW. Existing ROW is through mostly forested land and some regions of agricultural land.

Existing Line Physical Characteristics

Operating voltage	138
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing towers are double circuit monopoles with only one side having conductor installed

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	334.000000	334.000000

Winter (MVA)	421.000000	421.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to utilize existing shield wire to extent practicable or to select preferred shield wire	
Rebuild line length	8.95	
Rebuild portion description	Existing towers are double circuit monopoles with only one side having conductor installed. New conductors to be installed along entire length of the line.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	
Contingency	Proprietary business information.	
Total component cost	$3,580,000.00	
Component cost (in-service year)	$4,050,441.00	

Transmission Line Upgrade Component

Component title	4BF-1) Four Rivers - St John uprate

Project description	Proprietary business information.
Impacted transmission line	Four Rivers-St John
Point A	St John
Point B	Boxwood
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing structures are single circuit H-Frames
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	14.85
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.

Right of way	Use of existing ROW to extent practicable
Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$9,000,000.00
Component cost (in-service year)	$10,182,674.00

Transmission Line Upgrade Component

Component title	6BF-1) Chesterfield - Basin uprate
Project description	Proprietary business information.
Impacted transmission line	Chesterfield - Basin
Point A	Chesterfield
Point B	Basin
Point C	
Terrain description	Work will occur within existing ROW.

Existing Line Physical Characteristics		
Operating voltage	230	
Conductor size and type	Per incumbent system	
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware	
Tower line characteristics	The existing structures on the northmost segment of the line are double circuit steel monopoles. The southmost segment of the line has predominately double circuit lattice towers.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	12.67	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	

ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$6,200,000.00
Component cost (in-service year)	$7,014,731.00

Transmission Line Upgrade Component

Component title	7BF-1) Oakgrove - AF1-114 uprate
Project description	Proprietary business information.
Impacted transmission line	Oakgrove - AF1-114
Point A	Oakgrove
Point B	AF1-114
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing structures are single circuit H-Frames

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	6.1	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	

Contingency	Proprietary business information.
Total component cost	$3,050,000.00
Component cost (in-service year)	$3,450,795.00

Transmission Line Upgrade Component

Component title	7BF-10) Comorn - Birchwood uprate
Project description	Proprietary business information.
Impacted transmission line	Comorn - Birchwood
Point A	Comorn
Point B	Birchwood
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	The majority of the line is on existing H-Frame structures, double circuit arrangement on the south segment of the line, and single circuit arrangement as the line approaches Comorn substation.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000

Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	6.27	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	
Contingency	Proprietary business information.	
Total component cost	$3,135,000.00	
Component cost (in-service year)	$3,546,965.00	

Transmission Line Upgrade Component

Component title	7BF-2) Northern Neck - Sanders uprate

Project description	Proprietary business information.
Impacted transmission line	Northern Neck - Sanders
Point A	Northern Neck
Point B	Sanders
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	The existing structures are single circuit H-Frames
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	4.65
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.

Right of way	Use of existing ROW to extent practicable
Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$2,315,000.00
Component cost (in-service year)	$2,619,210.00

Transmission Line Upgrade Component

Component title	7BF-3) Sanders-Westmoreland uprate
Project description	Proprietary business information.
Impacted transmission line	Sanders - Westmoreland
Point A	Sanders
Point B	Westmoreland
Point C	
Terrain description	Work will occur within existing ROW.

Existing Line Physical Characteristics		
Operating voltage	230	
Conductor size and type	Per incumbent system	
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware	
Tower line characteristics	The existing structures are single circuit H-Frames	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	7.43	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	

ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$3,715,000.00
Component cost (in-service year)	$4,203,182.00

Transmission Line Upgrade Component

Component title	7BF-4) Westmoreland - Oak Grove uprate
Project description	Proprietary business information.
Impacted transmission line	Westmor - Oakgrove
Point A	Westmor
Point B	Oak Grove
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	The existing structures are single circuit H-Frames

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	11.27	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	

Contingency	Proprietary business information.
Total component cost	$5,635,000.00
Component cost (in-service year)	$6,375,485.00

Transmission Line Upgrade Component

Component title	7BF-5) AF1-114 - Dahlgren uprate
Project description	Proprietary business information.
Impacted transmission line	AF1-114 - Dahlgren
Point A	AF1-114
Point B	Dahlgren
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	The majority of the existing structures are double circuit steel monopoles to then transition to single circuit H-Frames as the line approaches the AF1-114 substation

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000

Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	13.9	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	
Overheads & miscellaneous costs	Proprietary business information.	
Contingency	Proprietary business information.	
Total component cost	$6,950,000.00	
Component cost (in-service year)	$7,863,287.00	

Transmission Line Upgrade Component

Component title	7BF-6) Dahlgren - Arnolds Corner

Project description	Proprietary business information.
Impacted transmission line	Dahlgren - Arnolds
Point A	Dahlgren
Point B	Arnolds
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	The majority of the existing structures are double circuit steel monopoles to then transition to single circuit H-Frames as the line approaches the Arnolds Corner substation.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	12

Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.
Right of way	Use of existing ROW to extent practicable
Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	
Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$5,985,000.00
Component cost (in-service year)	$6,771,478.00

Transmission Line Upgrade Component

Component title	7BF-7) Arnolds Corner - Comorn
Project description	Proprietary business information.
Impacted transmission line	Arnolds - Comorn
Point A	Arnolds
Point B	Comorn

Point C

Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware
Tower line characteristics	Existing structures are single circuit H-Frames
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000

Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire
Rebuild line length	1.55
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.
Right of way	Use of existing ROW to extent practicable
Construction responsibility	Proprietary business information.
Benefits/Comments	Proprietary business information.
Component Cost Details - In Current Year $	

Engineering & design	Proprietary business information.
Permitting / routing / siting	Proprietary business information.
ROW / land acquisition	Proprietary business information.
Materials & equipment	Proprietary business information.
Construction & commissioning	Proprietary business information.
Construction management	Proprietary business information.
Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$775,000.00
Component cost (in-service year)	$876,841.00

Transmission Line Upgrade Component

Component title	9BF-1) Thelma - Lakeview #1 and #2
Project description	Proprietary business information.
Impacted transmission line	Thelma - Lakeview #1 &#2 DCT
Point A	Thelma
Point B	Lakeview
Point C	
Terrain description	Work will occur within existing ROW.
Existing Line Physical Characteristics	
Operating voltage	230
Conductor size and type	Per incumbent system
Hardware plan description	Incumbent / Transmission Owner to select preferred hardware

Tower line characteristics	Existing structures are double circuit lattice towers	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1573.000000	1809.000000
Winter (MVA)	1648.000000	1896.000000
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Shield wire size and type	Incumbent / Transmission Owner to select preferred shield wire	
Rebuild line length	8.63	
Rebuild portion description	Entire length of line requires higher rated conductor. Transmission owner to design ROW per their requirements.	
Right of way	Use of existing ROW to extent practicable	
Construction responsibility	Proprietary business information.	
Benefits/Comments	Proprietary business information.	
Component Cost Details - In Current Year $		
Engineering & design	Proprietary business information.	
Permitting / routing / siting	Proprietary business information.	
ROW / land acquisition	Proprietary business information.	
Materials & equipment	Proprietary business information.	
Construction & commissioning	Proprietary business information.	
Construction management	Proprietary business information.	

Overheads & miscellaneous costs	Proprietary business information.
Contingency	Proprietary business information.
Total component cost	$4,315,000.00
Component cost (in-service year)	$4,882,026.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary business information.

Financial Information

Capital spend start date	01/2025
Construction start date	06/2028
Project Duration (In Months)	53

Additional Comments

None