Joshua Falls - Yeat 765kV Line Upgrade

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	605
Project title	Joshua Falls - Yeat 765kV Line Upgrade
Project description	This project assumes a previous award of Project #904 from the 2022 RTEP Window #3. This project enhances Project #904 by increasing the throughput of power by increasing the line conductor ampacity, and the attached terminal equipment. The enhanced conductor and terminal equipment will increase from 4000A to 5000A capacity.
Email	Company confidential and proprietary information.
Project in-service date	10/2029
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Company confidential and proprietary information.

Project Components

1. Joshua Falls-Yeat 765kV Transmission Line Upgrade
2. Opossum Creek Series Reactor
3. New London Station Series Reactor
4. Jacksons Ferry–Cloverdale 765kV Breakers

5. Kyger Creek-Sporn 345kV segment #25 & Terminal Equipment

6. Broadford-Jacksons Ferry 765kV Reactor - 3000A Breaker

Transmission Line Upgrade Component

Component title	Joshua Falls-Yeat 765kV Transmission Line Upgrade
Project description	Company confidential and proprietary information.
Impacted transmission line	Joshua Falls - Yeat
Point A	Joshua Falls Station
Point B	Yeat Station
Point C	
Terrain description	The topography for the Joshua Falls–Yeat 765kV line is relatively hilly. Land use in the area encompasses mostly agricultural and residential parcels in rural Virginia. The line crosses low density developed areas, a significant amount of highly vegetated (wooded) rural land, state/county highways, railroads, water crossings, and existing utilities.

Existing Line Physical Characteristics

Operating voltage	765
Conductor size and type	6-bundle 795 kcmil 45/7 Strand “Tern” ACSR
Hardware plan description	This line has not been built yet, so existing hardware design can be modified.
Tower line characteristics	This line has not been built yet, so tower design can be modified to accommodate the larger conductor.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	765.000000	765.000000
	Normal ratings	**Emergency ratings**

Summer (MVA)	4047.000000	4571.000000
Winter (MVA)	4484.000000	4961.000000
Conductor size and type	6 bundle 954 KCMIL Rail ACSR	
Shield wire size and type	N/A - Shield wire does not require replacement or upgrade in this project.	
Rebuild line length	138 miles	
Rebuild portion description	As this line is not constructed yet, the design will be redone to accommodate the larger conductor	
Right of way	The Joshua Falls–Yeat 765kV greenfield route ROW will be 200 feet in width and will parallel/cross existing rights-of-way to include interstates, roads, railroads, existing transmission lines/utilities, existing pipelines and best minimizes potential impacts to the natural and human environments.	
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	$696,050,947.00
Component cost (in-service year)	$831,121,232.00

Substation Upgrade Component

Component title	Opossum Creek Series Reactor
Project description	Company confidential and proprietary information.
Substation name	Opossum Creek Station
Substation zone	AEP
Substation upgrade scope	Install 15% reactor at Opossum Creek towards Candlers Mtn.

Transformer Information

None

New equipment description	15% series reactor Re-connect South Lynchburg to position C-C2 at Opossum Creek
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
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	$4,800,000.00
Component cost (in-service year)	$5,731,451.00

Substation Upgrade Component

Component title	New London Station Series Reactor
Project description	Company confidential and proprietary information.
Substation name	New London Station
Substation zone	AEP
Substation upgrade scope	Install 15% reactor at New London towards John Mountain.

Transformer Information

None

New equipment description	15% series reactor.
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	$2,800,000.00
Component cost (in-service year)	$3,343,346.00

Substation Upgrade Component

Component title	Jacksons Ferry–Cloverdale 765kV Breakers
Project description	Company confidential and proprietary information.
Substation name	Jacksons Ferry and Cloverdale 765kV Station
Substation zone	AEP
Substation upgrade scope	At Jacksons Ferry: Replace three 765kV 3000A single phase wave traps with three 765kV 5000A wave traps. Replace two 765kV 4000A circuit breakers with two 765kV 5000A breakers. At Cloverdale: Replace two 765kV 4000A breakers with 765kV 5000A circuit breakers.

Transformer Information

None

New equipment description	At Jacksons Ferry: Two 765kV 5000A breakers and three 765kV 5000A wave traps At Cloverdale: Two 765kV 5000A breakers
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
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	$12,200,000.00
Component cost (in-service year)	$13,731,207.00

Substation Upgrade Component

Component title	Kyger Creek-Sporn 345kV segment #25 & Terminal Equipment
Project description	Company confidential and proprietary information.
Substation name	Kyger Creek Station and Sporn Station
Substation zone	AEP
Substation upgrade scope	Add new terminal Equipment at Kyger Creek, including replacement of 345kV switches, strain bus, and risers to meet 1602 MVA. Complete line settings updates at Sporn Station remote end.

Transformer Information

None

New equipment description	Two 345kV, 3000A 3-phase switches, strain bus, and risers to meet 1602 MVA.

Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels. The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
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	$850,000.00
Component cost (in-service year)	$1,014,944.00

Substation Upgrade Component

Component title	Broadford-Jacksons Ferry 765kV Reactor - 3000A Breaker
Project description	Company confidential and proprietary information.
Substation name	Broadford Station

Substation zone	AEP
Substation upgrade scope	Replace (1) 765kV 3000A circuit breaker with (1) 4000 amp circuit breaker

Transformer Information

None

New equipment description	765kV 4000 amp circuit breaker
Substation assumptions	The existing AC station service is assumed to be sufficient to accommodate the new substation equipment. The existing station control enclosure is assumed to be sufficient to accommodate the new transmission line and circuit breaker protection and control relay panels.
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	$2,000,000.00
Component cost (in-service year)	$2,388,105.00

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
2023W1-GD-S89	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S500	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S499	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S501	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S80	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included
2023W1-GD-S87	242920	05BELMON	235102	01BELMNT	5	765/500	201/205	Summer Gen Deliv	Included

New Flowgates

Company confidential and proprietary information.

Financial Information

Capital spend start date	01/2024
Construction start date	02/2026
Project Duration (In Months)	69

Cost Containment Commitment

Cost cap (in current year)	Company confidential and proprietary information.
Cost cap (in-service year)	Company confidential and proprietary information.

Components covered by cost containment

1. Joshua Falls-Yeat 765kV Transmission Line Upgrade - Transource

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	No
ROW / land acquisition	No
Materials & equipment	No
Construction & commissioning	No
Construction management	No
Overheads & miscellaneous costs	No
Taxes	No
AFUDC	No
Escalation	No
Additional Information	Company confidential and proprietary information.
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	Yes
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Company confidential and proprietary information.

Additional Comments

None