

Kammer to Juniata

General Information

Proposing entity name	Proprietary & Confidential Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary & Confidential Information
Joint proposal ID	919
Company proposal ID	Proprietary & Confidential Information
PJM Proposal ID	237
Project title	Kammer to Juniata
Project description	Connect Kammer to Juniata with new 765 kV transmission pathway
Email	Proprietary & Confidential Information
Project in-service date	06/2031
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary & Confidential Information

Project Components

1. B-20-A) Kammer - Buttermilk Falls 765kV
2. B-21-A) Buttermilk Falls - Mountain Stone 765kV
3. B-24-A) Mountain Stone-Juniata 500kV
4. B-06-A) Mountain Stone 765kV Substation
5. B-19-B) Buttermilk Falls 765kV Substation

6. B-30-A) South Bend - Keystone 500kV terminal equipment upgrade
7. B-32-A) Keystone-Juniata 500 kV terminal equipment upgrade
8. B-33-A) Mountaineer-Belmont 765 kV terminal equipment upgrade
9. B-01-A) Kammer substation upgrade
10. B-07-A) Juniata substation upgrade
11. B-31-A) Sunbury 500 kV substation upgrades
12. B-34-A) Conemaugh circuit breaker upgrades

Greenfield Transmission Line Component

Component title	B-20-A) Kammer - Buttermilk Falls 765kV	
Project description	Proprietary & Confidential Information	
Point A	Kammer	
Point B	Buttermilk Falls	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	6904.000000	7690.000000
Winter (MVA)	8180.000000	8874.000000
Conductor size and type	6 bundled 715 KCMIL ACSR/GA2 Redwing	
Nominal voltage	AC	
Nominal voltage	765	
Line construction type	Overhead	
General route description	The approximately 114-mile primarily greenfield route exits Kammer substation to the east and travels approximately 16 miles through Marshall County, West Virginia to the Pennsylvania border. The route then travels northeast for the remaining approximately 98 miles through Greene County, Fayette County, Westmoreland County, and Indiana County, Pennsylvania to reach the proposed Buttermilk Falls substation.	

Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, moderately sloped terrain, with elevation within the Project ranging from a high of 2,170 ft above sea level to a low of 646 ft above sea level. The Project is entirely located within 6 Level IV ecoregions including Forested Hills and Mountains, Loam High Lime Till Plains, Mononghela Transition Zone, Permian Hills, Pittsburgh Low Plateau, and Uplands and Valleys of Mixed Land Use. According to the NLCD, the Project area largely consists of cultivated cropland, deciduous forest, hay/pasture, mixed forest, shrub/scrub, open water, and developed, open space.
Right-of-way width by segment	The majority of the route, approximately 90%, will have a ROW width of 200 ft. Approximately 10% of the route will have a ROW width of 175 ft in more congested areas. The proposed ROW will be an expansion of existing transmission line corridors for approximately 43% of the route length, the remainder will be greenfield ROW.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. Major watercourses crossed by the Project include the Monongahela, Youghiogheny and Conemaugh Rivers, some of which will require agency authorizations for navigable water crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites, cemeteries, historic districts, & architectural resources were recorded within vicinity of the route. Eight federally listed species (4 endangered and 4 proposed) No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No 'Major Federal Action' that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will mostly be single circuit 765kV lattice self-supporting or guyed-v towers in a horizontal conductor configuration. Delta configuration may be required in some locations. All angle structures will be self-supporting. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information

Benefits/Comments	Proprietary & Confidential Information	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary & Confidential Information	
Permitting / routing / siting	Proprietary & Confidential Information	
ROW / land acquisition	Proprietary & Confidential Information	
Materials & equipment	Proprietary & Confidential Information	
Construction & commissioning	Proprietary & Confidential Information	
Construction management	Proprietary & Confidential Information	
Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$694,716,467.00	
Component cost (in-service year)	\$786,007,916.00	
Greenfield Transmission Line Component		
Component title	B-21-A) Buttermilk Falls - Mountain Stone 765kV	
Project description	Proprietary & Confidential Information	
Point A	Buttermilk Falls	
Point B	Mountain Stone	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	6904.000000	7690.000000
Winter (MVA)	8180.000000	8874.000000

Conductor size and type	6 bundled 715 KCMIL ACSR/GA2 Redwing
Nominal voltage	AC
Nominal voltage	765
Line construction type	Overhead
General route description	The approximately 108-mile route exits the proposed Buttermilk Falls substation and travels northeast for 20 miles through Indiana County and Cambria County, Pennsylvania to the existing Keystone - Juniata 500kV corridor. The route then turns east and, where feasible, parallels the Keystone - Juniata 500kV corridor for the remaining approximately 88 miles through Cambria County, Blair County, Huntingdon County, Mifflin County, Juniata County, and Perry County, Pennsylvania before terminating at the proposed Mountain Stone substation.
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, moderately sloped terrain, with elevation within the Project ranging from a high of 2,595 ft above sea level to a low of 482 ft above sea level. The Project is located within 6 Level IV ecoregions including Forested Hills and Mountains, Northern Dissected Ridges and Knobs, Northern Limestone/Dolomite Valleys, Northern Sandstone Ridges, Northern Shale Valleys, and Uplands and Valleys of Mixed Land Use. According to the NLCD, the Project area largely consists of cultivated cropland, deciduous forest, hay/pasture, mixed forest, shrub/scrub, open water, and developed, open space.
Right-of-way width by segment	The majority of the route, approximately 98%, will have a ROW width of 200 ft. Approximately 2% of the route will have a ROW width of 175 ft in more congested areas. The proposed ROW will be an expansion of existing transmission line corridors for approximately 42% of the route length, the remainder will be greenfield ROW.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).

Environmental impacts	<p>Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses numerous aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, multiple 100-year floodplains are crossed by the route. This represent total amount of features crossed by the route & impacts from the Project would be significantly less. Major watercourses crossed by the Project include the Juniata River, some of which may require agency authorizations for navigable water or State Scenic River crossings. No fatal flaws have been identified for the Project. Multiple previously recorded archaeological sites, cemeteries, historic districts & architectural resources were recorded within vicinity of the route. Seven federally listed species (3 endangered and 4 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No 'Major Federal Action' that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.</p>
Tower characteristics	<p>The proposed structures will mostly be single circuit 765kV lattice self-supporting or guyed-v towers in a horizontal conductor configuration. Delta configuration may be required in some locations. All angle structures will be self-supporting. See structure drawing set included in Attachment 10.</p>
Construction responsibility	<p>Proprietary & Confidential Information</p>
Benefits/Comments	<p>Proprietary & Confidential Information</p>
Component Cost Details - In Current Year \$	
Engineering & design	<p>Proprietary & Confidential Information</p>
Permitting / routing / siting	<p>Proprietary & Confidential Information</p>
ROW / land acquisition	<p>Proprietary & Confidential Information</p>
Materials & equipment	<p>Proprietary & Confidential Information</p>
Construction & commissioning	<p>Proprietary & Confidential Information</p>
Construction management	<p>Proprietary & Confidential Information</p>

Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$633,348,169.00	
Component cost (in-service year)	\$716,575,318.00	
Greenfield Transmission Line Component		
Component title	B-24-A) Mountain Stone-Juniata 500kV	
Project description	Proprietary & Confidential Information	
Point A	Mountain Stone	
Point B	Juniata	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	5210.000000	5803.000000
Winter (MVA)	6173.000000	6697.000000
Conductor size and type	3 bundled 1780 KCMIL ACSS/MA3 84/19 Chukar	
Nominal voltage	AC	
Nominal voltage	500	
Line construction type	Overhead	
General route description	The approximately 0.6-mile route exits the proposed Mountain Stone substation and travels south before terminating at the Juniata substation.	
Terrain description	A detailed inspection of the USGS topographic map reveals relatively consistent, sloped terrain, with elevation ranging from a high of 931 ft above sea level to a low of 646 ft above sea level. The Project is located entirely within the Northern Limestone/Dolomite Valleys Level IV ecoregion. According to the NLCD, the Project area largely consists of cultivated cropland, deciduous forest, shrub/scrub, and developed, open space.	

Right-of-way width by segment	The route will have a 200 ft ROW width. The proposed route will be greenfield.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file).
Environmental impacts	Environmental constraints were evaluated within the vicinity of the proposed project centerline and are manageable through avoidance, minimization, and mitigation strategies incorporated at the onset of the routing/siting process. The proposed route crosses multiple aquatic resources, including wetlands, lakes/ponds, and streams but most features could be spanned & avoided with minimal impacts. According to FEMA, no 100-year floodplains are crossed by the route. This represents total amount of features crossed by the route & impacts from the Project would be significantly less. No major watercourses are which will require agency authorizations for navigable water and/or State Scenic River crossings. No fatal flaws have been identified for the Project. No previously recorded archaeological sites, cemeteries, & architectural resources were recorded within the route. Also, no historic districts are crossed by the proposed route. Five federally listed species (2 endangered, and 3 proposed) have known ranges along the proposed route. No critical habitat for any federally listed species intersects the route. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination, mitigation, & an in-depth routing/siting process. No 'Major Federal Action' that would invoke NEPA is anticipated to result from the proposed route. See Attachment 08 – Permitting Plan.
Tower characteristics	The proposed structures will be a single circuit 500kV self-supporting lattice in a horizontal conductor configuration. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information

Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$5,320,922.00
Component cost (in-service year)	\$6,020,136.00

Greenfield Substation Component

Component title	B-06-A) Mountain Stone 765kV Substation
Project description	Proprietary & Confidential Information
Substation name	Mountain Stone
Substation description	AC Air Insulated Substation (AIS): New proposed 765-500kV Substation. New 765kV Double breaker double bus (DBDB) switchyard with one (1) bay, one (1) line terminal, five (5) 765kV, 5000A, 63kAIC breakers, one (1) 765kV, 300MVAR shunt line reactor, two (2) 765-500kV, 3125 MVA transformer banks.
Nominal voltage	AC
Nominal voltage	765/500

Transformer Information

	Name	Capacity (MVA)
Transformer	765-500kV Xfrm #1	3125
	High Side	Low Side Tertiary
Voltage (kV)	765	500
	Name	Capacity (MVA)

Transformer	765-500kV Xfrm #2	3125	
	High Side	Low Side	Tertiary
Voltage (kV)	765	500	
Major equipment description	AC Air Insulated Substation (AIS): New proposed 765-500kV Substation. New 765kV Double breaker double bus (DBDB) switchyard with one (1) bay, one (1) line terminal, five (5) 765kV, 5000A, 63kAIC breakers, one (1) 765kV, 300MVAR shunt line reactor, two (2) 765-500kV, 3125 MVA transformer banks.		
	Normal ratings	Emergency ratings	
Summer (MVA)	3125.000000	4000.000000	
Winter (MVA)	3500.000000	4250.000000	
Environmental assessment	Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains one NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposed parcel. However, it is assumed any overland flow will drain to Trout Run and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Four federally (2 endangered and two proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No 'Major Federal Action' that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.		

Outreach plan	<p>The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.</p>
Land acquisition plan	See Attachment 9.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information		
Contingency	Proprietary & Confidential Information		
Total component cost	\$166,942,138.00		
Component cost (in-service year)	\$188,879,706.00		
Greenfield Substation Component			
Component title	B-19-B) Buttermilk Falls 765kV Substation		
Project description	Proprietary & Confidential Information		
Substation name	Buttermilk Falls		
Substation description	AC Air Insulated Substation (AIS): New proposed 765-500kV Substation. New 765kV breaker and a half (BAAH) switchyard with one (1) bay, two (2) line terminals, five (5) 765kV, 5000A, 63kAIC breakers, two (2) 765kV, 300MVAR shunt line reactor, one (1) 765-500kV, 3125 MVA transformer bank. New 500kV Double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, six (6) 500kV, 5000A, 63kAIC breakers.		
Nominal voltage	AC		
Nominal voltage	765/500		
Transformer Information			
	Name		Capacity (MVA)
Transformer	765-500kV Xfrm #1		3125
	High Side	Low Side	Tertiary
Voltage (kV)	765	500	
Major equipment description	AC Air Insulated Substation (AIS): New proposed 765-500kV Substation. New 765kV breaker and a half (BAAH) switchyard with one (1) bay, two (2) line terminals, five (5) 765kV, 5000A, 63kAIC breakers, two (2) 765kV, 300MVAR shunt line reactor, one (1) 765-500kV, 3125 MVA transformer bank. New 500kV Double breaker double bus (DBDB) switchyard with three (3) bays, three (3) line terminals, six (6) 500kV, 5000A, 63kAIC breakers.		

	Normal ratings	Emergency ratings
Summer (MVA)	3125.000000	4000.000000
Winter (MVA)	3500.000000	4250.000000
Environmental assessment	<p>Environmental constraints were evaluated within the vicinity of the proposed project. Environmental constraints were evaluated within the proposed substation parcel and are manageable through avoidance, minimization, and mitigation strategies. The proposed parcel contains one NWI-mapped wetlands. According to FEMA, no portion of the proposed substation parcel contains any 100-year floodplains or regulated floodways. No major watercourses are located within the proposed parcel. However, it is assumed any overland flow will drain to Trout Run and its downstream tributaries. No fatal flaws have been identified for the Project. Based on publicly available data, no previously recorded archaeological sites, cemeteries, or architectural resources were recorded within the immediate vicinity of the proposed substation parcel. Additionally, no historic districts located within the immediate vicinity of the Site. Four federally (2 endangered and two proposed) have known ranges within the vicinity of the site. No critical habitat was identified within the vicinity of the proposed substation parcel. If suitable habitat is identified or regulations change, agency coordination & species-specific surveys will occur. The project intends to follow suggested tree removal windows & general time of year restrictions to avoid/minimize impacts to species such as federally listed bats and migratory birds, among others. Industry standard construction BMPs & avoidance and minimization measures will be used to prevent unanticipated impacts to natural resources to the maximum extent practicable. There are no environmental concerns with the proposed project that cannot be addressed through agency coordination and mitigation. No 'Major Federal Action' that would invoke NEPA is anticipated to result from the proposed project. See Attachment 08 – Permitting Plan.</p>	

Outreach plan	<p>The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project. In the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The outreach plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.</p>
Land acquisition plan	See Attachment 9.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$170,291,024.00	
Component cost (in-service year)	\$192,668,663.00	
Transmission Line Upgrade Component		
Component title	B-30-A) South Bend - Keystone 500kV terminal equipment upgrade	
Project description	Proprietary & Confidential Information	
Impacted transmission line	South Bend - Keystone 500kV	
Point A	South Bend	
Point B	Keystone	
Point C		
Terrain description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Existing Line Physical Characteristics		
Operating voltage	500	
Conductor size and type	Per transmission owner system.	
Hardware plan description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Tower line characteristics	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000

	Normal ratings	Emergency ratings
Summer (MVA)	3573.000000	4378.000000
Winter (MVA)	4050.000000	5194.000000
Conductor size and type	N/A	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	Existing line to remain intact as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Right of way	Existing right-of-way to remain as-is. Proposal is to uprate remote end terminals at South Bend and Keystone to match conductor ratings.	
Construction responsibility	Proprietary & Confidential Information	
Benefits/Comments	Proprietary & Confidential Information	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary & Confidential Information	
Permitting / routing / siting	Proprietary & Confidential Information	
ROW / land acquisition	Proprietary & Confidential Information	
Materials & equipment	Proprietary & Confidential Information	
Construction & commissioning	Proprietary & Confidential Information	
Construction management	Proprietary & Confidential Information	
Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$4,683,750.00	
Component cost (in-service year)	\$4,683,750.00	

Transmission Line Upgrade Component

Component title	B-32-A) Keystone-Juniata 500 kV terminal equipment upgrade	
Project description	Proprietary & Confidential Information	
Impacted transmission line	Keystone - Juniata 500kV	
Point A	Keystone	
Point B	Juniata	
Point C		
Terrain description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	
Existing Line Physical Characteristics		
Operating voltage	500	
Conductor size and type	Per transmission-owner system.	
Hardware plan description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	
Tower line characteristics	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	500.000000	500.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2939.000000	3732.000000
Winter (MVA)	3618.000000	4423.000000
Conductor size and type	N/A	

Shield wire size and type	N/A
Rebuild line length	N/A
Rebuild portion description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.
Right of way	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$4,683,750.00
Component cost (in-service year)	\$4,683,750.00
Transmission Line Upgrade Component	
Component title	B-33-A) Mountaineer-Belmont 765 kV terminal equipment upgrade
Project description	Proprietary & Confidential Information
Impacted transmission line	Mountaineer - Belmont 765kV

Point A	Mountaineer	
Point B	Belmont	
Point C		
Terrain description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	
Existing Line Physical Characteristics		
Operating voltage	765	
Conductor size and type	Per transmission-owner system.	
Hardware plan description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	
Tower line characteristics	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	765.000000	765.000000
	Normal ratings	Emergency ratings
Summer (MVA)	4558.000000	5523.000000
Winter (MVA)	5757.000000	5757.000000
Conductor size and type	N/A	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	Existing line to remain intact as-is. Proposal is to uprate terminal equipment to match conductor ratings.	

Right of way	Existing right-of-way to remain as-is. Proposal is to upgrade terminal equipment to match conductor ratings.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$6,752,344.00
Component cost (in-service year)	\$6,752,344.00
Substation Upgrade Component	
Component title	B-01-A) Kammer substation upgrade
Project description	Proprietary & Confidential Information
Substation name	Kammer
Substation zone	AEP
Substation upgrade scope	Expand the existing breaker and a half (BAAH) 765kV Switchyard by adding (1) 345kV breaker and one line position.

Transformer Information

None

New equipment description	Add (1) 765kV, 5000A, 63kAIC breaker and (1) line position.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint.
Real-estate description	Based on publicly available parcel data and imagery, upgrades are expected to fit fully within existing fence line on transmission-owner owned property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$13,504,688.00
Component cost (in-service year)	\$13,504,688.00
Substation Upgrade Component	
Component title	B-07-A) Juniata substation upgrade
Project description	Proprietary & Confidential Information

Substation name	Juniata
Substation zone	PPL
Substation upgrade scope	Expand the existing 500kV switchyard by adding (2) 500kV breakers to main busses.
Transformer Information	
None	
New equipment description	Add (2) 5000A, 63kAIC breakers.
Substation assumptions	Assumes expansion of existing fence line to the southeast, remaining on utility owned property. Minor reconfiguration of an existing line entry may be required to support the addition of the proposed breaker/line positions.
Real-estate description	The substation fence line likely requires expansion for at least one of the new terminations, but work can be contained on utility property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$9,952,969.00
Component cost (in-service year)	\$9,952,969.00

Substation Upgrade Component

Component title	B-31-A) Sunbury 500 kV substation upgrades
Project description	Proprietary & Confidential Information
Substation name	Sunbury 500 kV
Substation zone	PPL
Substation upgrade scope	Expand the existing 500kV switchyard by adding (2) 500kV breakers in existing bays.
Transformer Information	
None	
New equipment description	Add (2) 500kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes that breaker expansion can occur within existing substation footprint.
Real-estate description	Assumes, based on imagery and publicly available parcel data, that space is available on utility property to expand the substation.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information

Contingency	Proprietary & Confidential Information
Total component cost	\$4,976,484.00
Component cost (in-service year)	\$4,976,484.00
Substation Upgrade Component	
Component title	B-34-A) Conemaugh circuit breaker upgrades
Project description	Proprietary & Confidential Information
Substation name	Conemaugh
Substation zone	PENELEC
Substation upgrade scope	Replace (9) 500kV breakers in existing switchyard.
Transformer Information	
None	
New equipment description	Replace (9) 500kV breakers with 500kV, 5000A, 63kAIC breakers.
Substation assumptions	Assumes required equipment upgrades occur in existing footprint.
Real-estate description	Based on publicly available parcel data and imagery, upgrades are expected to fit fully within existing fence line on transmission-owner owned property.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information

Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$23,418,750.00
Component cost (in-service year)	\$23,418,750.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary & Confidential Information

Financial Information

Capital spend start date	01/2026
Construction start date	06/2029
Project Duration (In Months)	65

Cost Containment Commitment

Cost cap (in current year)	Proprietary & Confidential Information
Cost cap (in-service year)	Proprietary & Confidential Information

Components covered by cost containment

1. B-20-A) Kammer - Buttermilk Falls 765kV - Proposer
2. B-21-A) Buttermilk Falls - Mountain Stone 765kV - Proposer
3. B-24-A) Mountain Stone-Juniata 500kV - Proposer
4. B-06-A) Mountain Stone 765kV Substation - Proposer
5. B-19-B) Buttermilk Falls 765kV Substation - Proposer

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	No
AFUDC	No
Escalation	No
Additional Information	Proprietary & Confidential Information
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	No
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?	Proprietary & Confidential Information

Additional cost containment measures not covered above

Proprietary & Confidential Information

Additional Comments

None