



Executive Summary

1. Executive Summary		Inputs	
Instructions			
Provide the name of the Proposing Entity. If there are multiple entities, please identify each party.	1.a.	Proposing Entity name	
Provide the RTEP Proposal Window in which this proposal is being submitted.	1.b.	Proposal window	2018/19 RTEP Long-Term
Provide the Proposing Entity project proposal id. Use "A, B, C, ...", etc. to differentiate between proposals.	1.c.	Proposal identification	
PJM proposal identification	1.d.	PJM proposal identification	201819_1-389
Provide a general description of the scope of this project (e.g. Project is a new line between X and Y substations utilizing AAA structures. A new bay will be created within the existing substation X footprint. Substation Y will be reconfigured to a breaker and a half with accommodations for the new line.)	1.e.	General project description	Rebuild the Hunterstown-Lincoln 115 kV line, add a Peach Bottom 500-230 kV transformer, add a Peach Bottom-Graceton 230 kV line and reconfigure the 230 kV connections at Peach Bottom into a new switching station
Identify if the proposal or a proposal component span two PJM Transmission Owner zones. I.e. The proposal topology connects equipment owned by more than one Transmission Owner. This group includes transmission that spans two or more affiliated companies (e.g. Meted and Allegheny Power).	1.f.	Tie line impact	Yes
Indicate if the project is being proposed as a solution to a cross-border (e.g. PJM to MISO, PJM to NYISO) issue. (Note: The Proposing Entity is responsible for initiating and satisfying all regional and interregional requirements.)	1.g.	Interregional project	No
Indicate if the Proposing Entity intends to construct, own, operate, and maintain the infrastructure built under this proposal.	1.h.	Construct, own, operate and maintain	Choose Yes or No Yes, except for rebuild of Hunterstown-Lincoln
Total current year project cost estimate including estimates for any required Transmission Owner upgrades.	1.i.	Project cost estimate (current year)	\$ 137,402,529
Total in-service year project cost estimate including estimates for any required Transmission Owner upgrades.	1.j.	Project cost estimate (in-service year)	\$ 147,637,957



Executive Summary

1. Executive Summary			
Instructions		Inputs	
Project estimated schedule duration in months.	1.k.	Project schedule duration	50 months
Indicate if any cost containment commitment is being proposed as part of the project. If yes, the "10. Cost Contain" tab within this project proposal template is to be completed	1.l.	Cost containment commitment	No
If the project provides any known additional benefits above solving the identified violations or constraints, identify those benefits (e.g. reliability, economic, resilience, etc.).	1.m.	Additional benefits	Addresses additional congestion on lines into Conastone substation from Peach Bottom and Furnace Run created as a result of increasing capacity on Hunterstown-Lincoln line; May eliminate the need for the special protection system presently in place at Peach Bottom to avoid potential instability of the Muddy Run generating units
Confirm that all technical analysis files have been provided for this proposal.	1.n.	Technical analysis files provided	<input checked="" type="checkbox"/>
Confirm that all necessary project diagrams have been provided for this proposal.	1.o.	Project diagram files provided	<input checked="" type="checkbox"/>
Indicate if company evaluation and operations and maintenance information has been provided for this proposal.	1.p.	Company evaluation and operations and maintenance information provided	<input checked="" type="checkbox"/>



Executive Summary

1. Executive Summary

Instructions

Inputs

If the answer to the cross-border question above at 1.g. was yes, complete the questions

Indicate if an evaluation for interregional cost allocation is desired.

1.q.i.

Interregional Cost Allocation Evaluation

Choose Yes or No

Indicate if the proposal has been evaluated in a coordinated interregional analysis under the PJM Tariff or Operating Agreement provisions. Specify the analysis and applicable Tariff or Operating Agreement provisions.

1.q.ii.

Evaluated in interregional analysis under PJM Tariff or Operating Agreement provisions

Choose Yes or No

If 'yes,' specify analysis and applicable Tariff or Operating Agreement provisions

List the specific regional and interregional violations and issues from the regional and/or interregional analyses that identified the violations and issues addressed by the proposal.

1.q.iii.

Regional and Interregional violations and issues from the Regional and/or Interregional analyses that identified the violations and issues addressed by the proposal.



Major Project Components

3. Major Project Components

Instructions

Provide a description for each major project component. Each project component will require the completion of the tab corresponding to the category of the component ("Greenfield Substation Component" tab for any proposed new substation, for example).

Provide a component project cost breakdown into the identified categories along with a total component cost. Costs should be in current year dollars.

If this proposal is being submitted as Market Efficiency project, provide an in-service year component project total cost.

Identify the entity who will be designated the component.

	Component 1	Component 2	Component 3
3.a. Component description(s)	Rebuild Hunterstown-Lincoln 115 kV line	Add Peach Bottom 500-230 kV transformer, add Peach Bottom-Graceton 230 kV line, add 230 kV switching station at Peach Bottom (includes subcomponents 2a-2f as described in tabs 4-7)	
3.b. Component cost (current year)			
Engineering and design			
Permitting / routing / siting			
ROW / land acquisition			
Materials and equipment			
Construction and commissioning			
Construction management			
Overheads and miscellaneous costs			
Contingency			
Total component cost	\$ 8,250,200	\$ 129,152,329	
3.c. Component cost (in-service year)	\$ 8,864,776	\$ 138,773,181	
3.d. Construction responsibility			

4. Transmission Line Reconductor/Rebuild Component	
Instructions	Inputs - 1
Provide the corresponding component number from the "Project Components" tab of the proposal template.	4.a. Component number 1
Identify the line terminal points. Add additional spaces if required.	4.b. Terminal points Hunterstown 115 kV bus (MetEd)
	Lincoln 115 kV bus (MetEd)
Existing Line Physical Characteristics	
Provide the size and type conductor that will be removed.	4.c. Existing conductor size and type unknown
Indicate whether the existing line hardware will be reused. If so, provide the age and condition of the hardware.	4.d. Existing hardware plan new hardware will be used
	4.e. Existing tower line characteristics unknown
Provide the condition and age of the existing structures. Describe the findings of any recent inspections or of analysis that has indicated a need for structural repair or reinforcement to re-conductor the line.	4.f. Terrain description relatively flat, mostly open space
Reconductor/Rebuild Component Plan	
Provide the target ratings for the line.	4.g. Component target ratings 335 MVA normal / 437 MVA emergency (summer)
Provide the type and size of the conductor to be installed.	4.h. Proposed conductor size and type 2167 kcmil 72/7 ACSR
If the shield wire is to be replaced, identify the type and size to be used.	4.i. Proposed shield wire size and type unknown
Describe the amount of the line that is anticipated to be rebuilt versus reconducted. Provide any assumptions that were used in arriving at this determination. If specific line sections have been identified for rebuild, provide route maps for (or specify in a Google Earth .KMZ file) those segments and identify the areas.	4.j. Rebuild portion It is assumed that the entire line would need to be rebuilt to achieve ratings necessary to alleviate the identified congestion on the facility. MetEd is the owner of the facility and would be assigned responsibility for the line upgrade.
	4.k. Right of way No additional ROW should be needed. The line should be able to be rebuilt within the existing ROW using pole towers that require less width than the existing lattice towers.
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	4.l. Redacted information



Greenfield Substation Component

7. Greenfield Substation Component

Instructions	Inputs - 1	
Provide the corresponding component number from the "Project Components" tab of the proposal template.	7.a. Component number	2a
Provide the name for the proposed substation.	7.b. Proposed substation name	Peach Bottom West
Provide the latitude and longitude (in decimal degrees) of the site(s) evaluated for the substation.	7.c. Evaluated location(s)	[Redacted]
Provide a general description of the substation. Also, provide a single line diagram and general arrangement drawing.	7.d. Substation description	substation will contain a 230 kV bus in a breaker and a half configuration with a total of eight positions for connecting existing and new transmission facilities
Describe the major substation equipment and provide the equipment ratings.	7.e. Substation equipment	230 kV bus in breaker and a half configuration with four strings and three circuit breakers per string; rating of bus and circuit breakers will not limit rating of any connected facilities; rating of circuit breakers will exceed required fault interrupting capability
Describe the required site size, geography and current land use for the proposed site(s).	7.f. Geography and land use	eight acres of land is estimated to be required; potential location is just across from the existing Peach Bottom North substation; potential site is presently unoccupied and used as ROW for existing aerial transmission lines that will either be connected to new substation or moved to the side of the new substation
Provide an assessment of the potential environmental impacts (i.e. environmental impact study requirements, environmental permitting, sediment, and erosion control issues).	7.g. Environmental assessment	An environmental assessment study will be performed prior to construction to identify and mitigate any potential environmental impacts. All environmental permits and requirements related to construction and operation of a new electric substation will be obtained and followed.
Community and landowner outreach plan	7.h. Outreach plan	The potential site for the proposed switching station is located within existing transmission line ROW just across from a major transmission substation. The site is owned by [Redacted] and is presently unoccupied open land, with few surrounding residents. However, [Redacted] will reach out and address any nearby resident or community concerns related to the building and operation of the new substation.
Provide the project land acquisition plan and approach for both public and private lands.	7.i. Land acquisition plan	The potential site is owned by [Redacted] and it is not anticipated that the acquisition of additional land will be necessary.
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	7.j. Redacted information	[Redacted]



Substation Upgrade Component

5. Substation Upgrade Component

Instructions	Inputs-1				
Provide the corresponding component number from the "Project Components" tab of the proposal template.	<table border="1"> <tr> <td data-bbox="1476 433 2128 534">5.a. Component number</td> <td data-bbox="2128 433 3014 534">2b</td> </tr> </table>	5.a. Component number	2b		
5.a. Component number	2b				
Identify the name of the existing substation where the upgrade will take place.	<table border="1"> <tr> <td data-bbox="1476 534 2128 604">5.b. Substation</td> <td data-bbox="2128 534 3014 604">Peach Bottom South</td> </tr> </table>	5.b. Substation	Peach Bottom South		
5.b. Substation	Peach Bottom South				
Describe the scope of the upgrade work at the identified substation.	<table border="1"> <tr> <td data-bbox="1476 604 2128 655">5.c. Substation upgrade scope</td> <td data-bbox="2128 604 3014 655"></td> </tr> <tr> <td colspan="2" data-bbox="2128 655 3014 786">existing substation will be expanded to add a position to the existing 500 kV bus and facilitate connection of a new 500-230 kV transformer</td> </tr> </table>	5.c. Substation upgrade scope		existing substation will be expanded to add a position to the existing 500 kV bus and facilitate connection of a new 500-230 kV transformer	
5.c. Substation upgrade scope					
existing substation will be expanded to add a position to the existing 500 kV bus and facilitate connection of a new 500-230 kV transformer					
Describe any new substation equipment and provide the equipment ratings.	<table border="1"> <tr> <td data-bbox="1476 806 2128 856">5.d. New equipment description</td> <td data-bbox="2128 806 3014 856"></td> </tr> <tr> <td colspan="2" data-bbox="2128 856 3014 1078">500 kV bus section with two circuit breakers; rating of bus and circuit breakers will not limit rating of any connected facilities; rating of circuit breakers will exceed required fault interrupting capability</td> </tr> </table>	5.d. New equipment description		500 kV bus section with two circuit breakers; rating of bus and circuit breakers will not limit rating of any connected facilities; rating of circuit breakers will exceed required fault interrupting capability	
5.d. New equipment description					
500 kV bus section with two circuit breakers; rating of bus and circuit breakers will not limit rating of any connected facilities; rating of circuit breakers will exceed required fault interrupting capability					
Describe the assumptions that were made about the substation that were used in developing the scope and cost for the upgrade. For example, the use of a bay that appears to be available, the proposed use of an open area within the substation or the relocation of existing equipment.	<table border="1"> <tr> <td data-bbox="1476 1088 2128 1139">5.e. Substation assumptions</td> <td data-bbox="2128 1088 3014 1139"></td> </tr> <tr> <td colspan="2" data-bbox="2128 1139 3014 1300">expansion will require regrading of sloped area adjacent to east side of substation, however, this additional cost is included in cost estimate</td> </tr> </table>	5.e. Substation assumptions		expansion will require regrading of sloped area adjacent to east side of substation, however, this additional cost is included in cost estimate	
5.e. Substation assumptions					
expansion will require regrading of sloped area adjacent to east side of substation, however, this additional cost is included in cost estimate					
If the upgrade changes or expands upon the substation configuration provide a single line diagram and a station general arrangement drawing. These documents should be provided on the 'Redacted Information' tab under the appropriate project component.	<table border="1"> <tr> <td data-bbox="1476 1310 2128 1380">5.f. Substation drawings</td> <td data-bbox="2128 1310 3014 1380"></td> </tr> </table>	5.f. Substation drawings			
5.f. Substation drawings					
If the substation fence needs to be expanded, indicate the real-estate plan for acquiring the needed land. Also, provide a Google Earth .KMZ file detailing the expansion.	<table border="1"> <tr> <td data-bbox="1476 1471 2128 1501">5.g. Real-estate plan</td> <td data-bbox="2128 1471 3014 1501"></td> </tr> <tr> <td colspan="2" data-bbox="2128 1501 3014 1602">the substation fence will need to be expanded, but the property required is owned by Exelon</td> </tr> </table>	5.g. Real-estate plan		the substation fence will need to be expanded, but the property required is owned by Exelon	
5.g. Real-estate plan					
the substation fence will need to be expanded, but the property required is owned by Exelon					
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	<table border="1"> <tr> <td data-bbox="1476 1612 2128 1693">5.h. Redacted information</td> <td data-bbox="2128 1612 3014 1693"></td> </tr> <tr> <td colspan="2" data-bbox="2128 1693 3014 1808"></td> </tr> </table>	5.h. Redacted information			
5.h. Redacted information					



Substation Upgrade Component

5. Substation Upgrade Component

Instructions	Inputs-1		
Provide the corresponding component number from the "Project Components" tab of the proposal template.	<table border="1"> <tr> <td data-bbox="1476 433 2128 534">Component number</td> <td data-bbox="2128 433 3014 534">2c</td> </tr> </table>	Component number	2c
Component number	2c		
Identify the name of the existing substation where the upgrade will take place.	<table border="1"> <tr> <td data-bbox="1476 534 2128 604">Substation</td> <td data-bbox="2128 534 3014 604">Peach Bottom South</td> </tr> </table>	Substation	Peach Bottom South
Substation	Peach Bottom South		
Describe the scope of the upgrade work at the identified substation.	<table border="1"> <tr> <td data-bbox="1476 604 2128 655">Substation upgrade scope</td> <td data-bbox="2128 604 3014 816">install a new 500-230 kV transformer and short 230 kV transmission line to connect Peach Bottom South 500 kV bus to new Peach Bottom West 230 kV substation</td> </tr> </table>	Substation upgrade scope	install a new 500-230 kV transformer and short 230 kV transmission line to connect Peach Bottom South 500 kV bus to new Peach Bottom West 230 kV substation
Substation upgrade scope	install a new 500-230 kV transformer and short 230 kV transmission line to connect Peach Bottom South 500 kV bus to new Peach Bottom West 230 kV substation		
Describe any new substation equipment and provide the equipment ratings.	<table border="1"> <tr> <td data-bbox="1476 816 2128 856">New equipment description</td> <td data-bbox="2128 816 3014 1098">500-230 kV transformer consisting of three single phases with a total summer rating of 1479 MVA normal and 1839 MVA emergency; 230 kV transmission line one mile in length with summer rating of 1462 MVA normal and 1770 MVA emergency</td> </tr> </table>	New equipment description	500-230 kV transformer consisting of three single phases with a total summer rating of 1479 MVA normal and 1839 MVA emergency; 230 kV transmission line one mile in length with summer rating of 1462 MVA normal and 1770 MVA emergency
New equipment description	500-230 kV transformer consisting of three single phases with a total summer rating of 1479 MVA normal and 1839 MVA emergency; 230 kV transmission line one mile in length with summer rating of 1462 MVA normal and 1770 MVA emergency		
Describe the assumptions that were made about the substation that were used in developing the scope and cost for the upgrade. For example, the use of a bay that appears to be available, the proposed use of an open area within the substation or the relocation of existing equipment.	<table border="1"> <tr> <td data-bbox="1476 1098 2128 1149">Substation assumptions</td> <td data-bbox="2128 1098 3014 1320">The connection for the Peach Bottom-Keeney 500 kV line at Peach Bottom will be moved to the new bus position created as part of the substation expansion and the new transformer will be connected to the bus position presently occupied by the Peach Bottom-Keeney line.</td> </tr> </table>	Substation assumptions	The connection for the Peach Bottom-Keeney 500 kV line at Peach Bottom will be moved to the new bus position created as part of the substation expansion and the new transformer will be connected to the bus position presently occupied by the Peach Bottom-Keeney line.
Substation assumptions	The connection for the Peach Bottom-Keeney 500 kV line at Peach Bottom will be moved to the new bus position created as part of the substation expansion and the new transformer will be connected to the bus position presently occupied by the Peach Bottom-Keeney line.		
If the upgrade changes or expands upon the substation configuration provide a single line diagram and a station general arrangement drawing. These documents should be provided on the 'Redacted Information' tab under the appropriate project component.	<table border="1"> <tr> <td data-bbox="1476 1320 2128 1380">Substation drawings</td> <td data-bbox="2128 1320 3014 1481"></td> </tr> </table>	Substation drawings	
Substation drawings			
If the substation fence needs to be expanded, indicate the real-estate plan for acquiring the needed land. Also, provide a Google Earth .KMZ file detailing the expansion.	<table border="1"> <tr> <td data-bbox="1476 1481 2128 1501">Real-estate plan</td> <td data-bbox="2128 1481 3014 1663"></td> </tr> </table>	Real-estate plan	
Real-estate plan			
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	<table border="1"> <tr> <td data-bbox="1476 1663 2128 1693">Redacted information</td> <td data-bbox="2128 1663 3014 1808"></td> </tr> </table>	Redacted information	
Redacted information			

4. Transmission Line Reconductor/Rebuild Component		Inputs - 2	
Instructions			
Provide the corresponding component number from the "Project Components" tab of the proposal template.	4.a.	Component number	2d
Identify the line terminal points. Add additional spaces if required.	4.b.	Terminal points	Peach Bottom 230 kV bus (new PECO)
			Cooper 230 kV bus (PECO)
			Graceton 230 kV bus(BGE)
Existing Line Physical Characteristics			
Provide the size and type conductor that will be removed.	4.c.	Existing conductor size and type	795kcmil 30/19 ACSR
Indicate whether the existing line hardware will be reused. If so, provide the age and condition of the hardware.	4.d.	Existing hardware plan	new hardware will be used
		Existing tower line characteristics	age is approximately 60 years; a detailed condition assessment will be performed after project award
Provide the condition and age of the existing structures. Describe the findings of any recent inspections or of analysis that has indicated a need for structural repair or reinforcement to re-conductor the line.	4.f.	Terrain description	relatively flat or gently sloping, mostly open space
Describe the terrain that the existing line traverses. Additionally, provide a Google Earth .KMZ file with the existing line path as an included document with the project proposal package.	Reconductor/Rebuild Component Plan		
Provide the target ratings for the line.	4.g.	Component target ratings	1331 MVA normal / 1594 MVA emergency (summer)
Provide the type and size of the conductor to be installed.	4.h.	Proposed conductor size and type	2x1590 kcmil 54/19 ACSR
If the shield wire is to be replaced, identify the type and size to be used.	4.i.	Proposed shield wire size and type	1-9/16 7#5 ALUMOWELD
Describe the amount of the line that is anticipated to be rebuilt versus reconducted. Provide any assumptions that were used in arriving at this determination. If specific line sections have been identified for rebuild, provide route maps for (or specify in a Google Earth .KMZ file) those segments and identify the areas.	4.j.	Rebuild portion	the entire line between the new Peach Bottom West substation, Cooper substation and Graceton substation will be rebuilt
		Right of way	No additional ROW should be needed. The double circuit tower line will be a single pole structure that is expected to fit within the space of the existing single circuit lattice tower.
Describe the segments of the existing right-of-way that will need to be expanded or any newly required rights-of-way that will be required. If new or expanded right-of-way is required, provide route maps for (or specify in a Google Earth .KMZ file) those segments and identify the areas.	4.l.	Redacted information	
Describe any files or information that has been redacted from this section and provide the basis for the redaction.			



Substation Upgrade Component

5. Substation Upgrade Component

Instructions	Inputs-3	
Provide the corresponding component number from the "Project Components" tab of the proposal template.	5.a. Component number	2e
Identify the name of the existing substation where the upgrade will take place.	5.b. Substation	Peach Bottom West (new)
Describe the scope of the upgrade work at the identified substation.	5.c. Substation upgrade scope	cut and connect existing Cooper-Peach Bottom Tap 230 kV line and both Muddy Run-Peach Bottom 230 kV lines at new Peach Bottom West substation
Describe any new substation equipment and provide the equipment ratings.	5.d. New equipment description	short sections of transmission line (one or two spans each) to connect existing lines to new substation; two new circuit breakers on resulting tie lines between Peach Bottom West 230 kV bus and existing Peach Bottom 230 kV bus; ratings on short sections connecting both Muddy Run lines and Peach Bottom Tap line will meet or exceed present ratings of those lines; resulting tie lines between new substation and existing 230 kV bus at Peach Bottom will be built with 2x1590 kcmil 54/19 ACSR conductor with summer ratings of 1462 MVA normal and 1770 MVA emergency
Describe the assumptions that were made about the substation that were used in developing the scope and cost for the upgrade. For example, the use of a bay that appears to be available, the proposed use of an open area within the substation or the relocation of existing equipment.	5.e. Substation assumptions	the two circuit breakers that will be added to the two lines that will tie the existing and new 230 kV buses will be located inside Peach Bottom North substation
If the upgrade changes or expands upon the substation configuration provide a single line diagram and a station general arrangement drawing. These documents should be provided on the 'Redacted Information' tab under the appropriate project component.	5.f. Substation drawings	
If the substation fence needs to be expanded, indicate the real-estate plan for acquiring the needed land. Also, provide a Google Earth .KMZ file detailing the expansion.	5.g. Real-estate plan	
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	5.h. Redacted information	



Substation Upgrade Component

5. Substation Upgrade Component

Instructions	Inputs-4		
Provide the corresponding component number from the "Project Components" tab of the proposal template.	<table border="1"> <tr> <td data-bbox="1575 471 2141 510">5.a. Component number</td> <td data-bbox="2141 471 2965 510">2f</td> </tr> </table>	5.a. Component number	2f
5.a. Component number	2f		
Identify the name of the existing substation where the upgrade will take place.	<table border="1"> <tr> <td data-bbox="1575 546 2141 584">5.b. Substation</td> <td data-bbox="2141 546 2965 584">Graceton</td> </tr> </table>	5.b. Substation	Graceton
5.b. Substation	Graceton		
Describe the scope of the upgrade work at the identified substation.	<table border="1"> <tr> <td data-bbox="1575 614 2141 653">5.c. Substation upgrade scope</td> <td data-bbox="2141 614 2965 786">attach new Peach Bottom-Graceton 230 kV line to existing bus at Graceton by adding a new circuit breaker to an existing string of the breaker and a half bus configuration</td> </tr> </table>	5.c. Substation upgrade scope	attach new Peach Bottom-Graceton 230 kV line to existing bus at Graceton by adding a new circuit breaker to an existing string of the breaker and a half bus configuration
5.c. Substation upgrade scope	attach new Peach Bottom-Graceton 230 kV line to existing bus at Graceton by adding a new circuit breaker to an existing string of the breaker and a half bus configuration		
Describe any new substation equipment and provide the equipment ratings.	<table border="1"> <tr> <td data-bbox="1575 822 2141 860">5.d. New equipment description</td> <td data-bbox="2141 822 2965 1082">new 230 kV circuit breaker with ratings that will meet or exceed the ratings of the new Peach Bottom-Graceton line and interrupting capability that will exceed the required fault interrupting capability</td> </tr> </table>	5.d. New equipment description	new 230 kV circuit breaker with ratings that will meet or exceed the ratings of the new Peach Bottom-Graceton line and interrupting capability that will exceed the required fault interrupting capability
5.d. New equipment description	new 230 kV circuit breaker with ratings that will meet or exceed the ratings of the new Peach Bottom-Graceton line and interrupting capability that will exceed the required fault interrupting capability		
Describe the assumptions that were made about the substation that were used in developing the scope and cost for the upgrade. For example, the use of a bay that appears to be available, the proposed use of an open area within the substation or the relocation of existing equipment.	<table border="1"> <tr> <td data-bbox="1575 1118 2141 1157">5.e. Substation assumptions</td> <td data-bbox="2141 1118 2965 1308">a line position can be created by adding a circuit breaker to one of the existing strings of the breaker and a half bus configuration</td> </tr> </table>	5.e. Substation assumptions	a line position can be created by adding a circuit breaker to one of the existing strings of the breaker and a half bus configuration
5.e. Substation assumptions	a line position can be created by adding a circuit breaker to one of the existing strings of the breaker and a half bus configuration		
If the upgrade changes or expands upon the substation configuration provide a single line diagram and a station general arrangement drawing. These documents should be provided on the 'Redacted Information' tab under the appropriate project component.	<table border="1"> <tr> <td data-bbox="1575 1344 2141 1382">5.f. Substation drawings</td> <td data-bbox="2141 1344 2965 1382"></td> </tr> </table>	5.f. Substation drawings	
5.f. Substation drawings			
If the substation fence needs to be expanded, indicate the real-estate plan for acquiring the needed land. Also, provide a Google Earth .KMZ file detailing the expansion.	<table border="1"> <tr> <td data-bbox="1575 1465 2141 1503">5.g. Real-estate plan</td> <td data-bbox="2141 1465 2965 1614"></td> </tr> </table>	5.g. Real-estate plan	
5.g. Real-estate plan			
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	<table border="1"> <tr> <td data-bbox="1575 1663 2141 1701">5.h. Redacted information</td> <td data-bbox="2141 1663 2965 1812"></td> </tr> </table>	5.h. Redacted information	
5.h. Redacted information			

9. Project Financial Information

Instructions	Inputs
--------------	--------

Project Schedule

Provide the planned construction period, include the month and year of when capital spend will begin, when construction will begin and when construction will end. The final construction month should be the month preceding the commercial operation month.

9.a.	Capital spend start date (Mo-Yr)	Apr-20
	Construction start date (Mo-Yr)	Apr-21
	Commercial operation date (Mo-Yr)	May-24

Project Capital Expenditures

Provide, in present year dollars, capital expenditure estimates by year for the Proposing Entity, work to be completed by others (e.g. incumbent TO) and total project. Capital expenditure estimates should include all capital expenditure, including any ongoing expenditures, for which the Proposing Entity plans to seek FERC approval for recovery.

9.b.	Capital expenditure details	Total	2020	2021	2022	2023	2024	2025
	Engineering and design							
	Permitting / routing / siting							
	ROW / land acquisition							
	Materials and equipment							
	Construction and commissioning							
	Construction management							
	Overheads and miscellaneous costs							
	Contingency							
	Proposer total capex							
	Work by others capex							
	Total project capex	\$ 137,402,529	\$ 5,889,774	\$ 33,113,001	\$ 35,588,263	\$ 35,588,263	\$ 27,223,228	

Even if AFUDC is not going to be employed, provide a yearly AFUDC cash flow.

9.c.		Total	2020	2021	2022	2023	2024	2025
	AFUDC	\$ 25,152,347	\$ 403,584	\$ 2,672,579	\$ 5,111,186	\$ 7,549,793	\$ 9,415,205	

Provide any assumptions for the capital expenditure estimate (e.g. design assumptions, weather, manpower needed and work schedule, number of hours per day, construction area

9.d.	Assumptions for the capital expenditure estimate
	assumes standard seasonal weather and permitting schedule

Describe any files or information that has been redacted from this section and provide the basis for the redaction.

9.e.	Redacted information



Cost Containment Commitment

10. Cost Containment Commitment

Instructions	Inputs																					
Provide a description of the cost containment mechanism being proposed.	10.a. Cost containment commitment description <div style="background-color: #d9e1f2; height: 40px; width: 100%;"></div>																					
	10.b. Project scope covered by the cost containment commitment <div style="background-color: #d9e1f2; height: 40px; width: 100%;"></div>																					
Provide, in present year dollars and year of occurrence dollars, the Proposing Entity's proposed binding cap on capital expenditures.	10.b.i. Cost cap in present year dollars <div style="background-color: #d9e1f2; height: 15px; width: 80%;"></div>																					
	Cost cap in in-service year dollars <div style="background-color: #d9e1f2; height: 15px; width: 80%;"></div>																					
Provide any additional information related to the cap on capital expenditures, including but not limited to: if AFUDC is included in the cap, if all costs prior to commercial operation date are included in the cap, if the cap includes a variable or fixed inflation rate, etc.	10.b.ii. Additional Information on cost cap: <div style="background-color: #d9e1f2; height: 40px; width: 100%;"></div>																					
	10.b.iii. Cost containment capital expenditure exemptions <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #444; color: white;">Capital cost component</th> <th style="background-color: #444; color: white;">Component covered by cost containment</th> </tr> </thead> <tbody> <tr> <td>Engineering and design</td> <td>Choose Yes or No</td> </tr> <tr> <td>Permitting / routing / siting</td> <td>Choose Yes or No</td> </tr> <tr> <td>ROW / land acquisition</td> <td>Choose Yes or No</td> </tr> <tr> <td>Materials and equipment</td> <td>Choose Yes or No</td> </tr> <tr> <td>Construction and commissioning</td> <td>Choose Yes or No</td> </tr> <tr> <td>Construction management</td> <td>Choose Yes or No</td> </tr> <tr> <td>Overheads and miscellaneous costs</td> <td>Choose Yes or No</td> </tr> <tr> <td>Taxes</td> <td>Choose Yes or No</td> </tr> <tr> <td>AFUDC</td> <td>Choose Yes or No</td> </tr> <tr> <td>Escalation</td> <td>Choose Yes or No</td> </tr> </tbody> </table>	Capital cost component	Component covered by cost containment	Engineering and design	Choose Yes or No	Permitting / routing / siting	Choose Yes or No	ROW / land acquisition	Choose Yes or No	Materials and equipment	Choose Yes or No	Construction and commissioning	Choose Yes or No	Construction management	Choose Yes or No	Overheads and miscellaneous costs	Choose Yes or No	Taxes	Choose Yes or No	AFUDC	Choose Yes or No	Escalation
Capital cost component	Component covered by cost containment																					
Engineering and design	Choose Yes or No																					
Permitting / routing / siting	Choose Yes or No																					
ROW / land acquisition	Choose Yes or No																					
Materials and equipment	Choose Yes or No																					
Construction and commissioning	Choose Yes or No																					
Construction management	Choose Yes or No																					
Overheads and miscellaneous costs	Choose Yes or No																					
Taxes	Choose Yes or No																					
AFUDC	Choose Yes or No																					
Escalation	Choose Yes or No																					
Indicate which components of capital costs fall under the cost cap.																						



Cost Containment Commitment

10. Cost Containment Commitment

Instructions

Describe any other cost containment measures not detailed above.

Provide language to be included in the Designated Entity Agreement that expresses the legally binding commitment of the developer to the construction cost cap.

Inputs

10.c. Describe any other Cost Containment Measures not covered above:

[Empty input box for 10.c.]

10.d. Cost Commitment Legal Language

[Empty input box for 10.d.]