

## **Executive Summary**

Instructions		Inpu	uts	
rovide the name of the Proposing Entity. If there are multiple entities, please identify each party.	1.a.	Proposing Entity name		
rovide the RTEP Proposal Window in which this proposal is being submitted.	1.b.	Proposal window	2018/19 RTEP Long-	Term Proposal Window
rovide the Proposing Entity project proposal id. Use "A, B, C,", etc. to differentiate between proposals.	1.c.	Proposal identification		
JM proposal identification	1.d.	PJM proposal identification	20181	9_1-506
rovide a general description of the scope of this project (e.g. Project is a new line between X and Y ubstations utilizing AAA structures. A new bay will be created within the existing substation X footprint. ubstation Y will be reconfigured to a breaker and a half with accomodations for the new line.)		A new 345 kV line will be constructed between the constructed entirely on existing right-of-way and the Marblehead 161 kV line and a Marblehead – Herlamiles of greenfield transmission line between the constructed on existing right-of-way. At the Palmy kV line will be rebuilt as a 345 kV/161 kV, double the river crossing has already been constructed a installed hard in parallel on river crossing. The 16 while the 345 kV circuit will bypass the Marblehea kV transmission line will also be rebuilt as a 345 k circuit into the Herleman Substation. When the p – Herleman 345 kV transmission line that is const	ne project will include a teman 138 kV line. In act Maywood and Palmyra teman Substation, the exist circuit line. This line will a a 345 kV double circuit kV circuit will terminated Substation. The existic V/138 kV, double circuit roject is commissioned,	rebuild of an existing Palr Idition, there will be rough Substations that will be ing Palmyra – Marblehea cross the Mississippi Riv t line. The conductors ar te at the Marblehead Sub- ing Marblehead – Herlema line and will carry the 34- the result will be a 2nd M
roposal topology connects equipment owned by more than one Transmission Owner. This group	1.f.	Tie line impact	Yes	
dentify if the proposal or a proposal component span two PJM Transmission Owner zones. I.e. The roposal topology connects equipment owned by more than one Transmission Owner. This group acludes transmission that spans two or more affiliated companies (e.g. Meted and Allegheny Power).  Indicate if the project is being proposed as a solution to a cross-border (e.g. PJM to MISO, PJM to YISO) issue. (Note: The Proposing Entity is responsible for initiating and satisfying all regional and interregional requirements.)	1.f. 1.g.	Tie line impact Interregional project	Yes Yes	
dicate if the project is being proposed as a solution to a cross-border (e.g. PJM to MISO, PJM to YISO) issue. (Note: The Proposing Entity is responsible for initiating and satisfying all regional and				
oposal topology connects equipment owned by more than one Transmission Owner. This group cludes transmission that spans two or more affiliated companies (e.g. Meted and Allegheny Power).  dicate if the project is being proposed as a solution to a cross-border (e.g. PJM to MISO, PJM to YISO) issue. (Note: The Proposing Entity is responsible for initiating and satisfying all regional and terregional requirements.)  dicate if the Proposing Entity intends to construct, own, operate, and maintain the infrastructure built	1.g.	Interregional project	Yes	34,634,265



## **Executive Summary**

1.k.	Project schedule duration 46
1.l.	Cost containment commitment No
1.m.	Additional benefits
1.n.	Technical analysis files provided
1.0.	Project diagram files provided
1.p.	Company evaluation and operations and maintenance information provided
	If the answer to the cross-border question above at 1.g. was yes, complete the questions
1.q.i.	Interregional Cost Allocation Evaluation Yes
1.q.ii.	Evaluated in interregional analysis under PJM  Tariff or Operating Agreement provisions  Yes
	If 'yes,' specify analysis and applicable Tariff or Operating Agreement provisions
	The Project should be evaluated according to the MISO-PJM JOA and the PJM Operating Agree Tariff
1.q.iii.	Regional and Interregional violations and issues from the Regional and/or Interregional a that identified the violations and issues addressed by the proposal.
	1.m. 1.o. 1.p. 1.q.i.



## **Overloaded Facilities**

#### 2. Overloaded Facilities

Facilities addressed by the proposed project
Instructions: Identify the criteria violation(s) or system constraint(s) that the proposed project solves or mitigates.

FG# Analysis Type Bus# Facility Name To Bus # To Bus Name Voltage 2.a. CKT Area



2.b.

#### **Overloaded Facilities**

## 2. Overloaded Facilities

Facilities not addressed/caused by the proposed project Identify the criteria violation(s) or system constraint(s) that the proposed project causes or does not address. Instructions: Unique Proposer Analysis Type Bus# Facility Name To Bus # CKT Voltage To Bus Name Area Generated ID



2.c.

#### **Overloaded Facilities**

. Overloaded Facilities

Market Efficiency flowgate(s) addressed by the proposed project Identify the Market Efficiency flowgate(s) the proposed project mitigates. Instructions: Market Congestion (\$ Frequency Frequency Market Congestion FG# **Facility Name** Type Area (Hours) millions) (Hours) (\$ millions) Marblehead XFMR 1.18 ME-6 AMIL Transformer 195 1.41 138



# **Major Project Components**

. Major Project Components					
Instructions			Component 1	Component 2	Component 3
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).	3.a.	Component description(s)	Add a breaker to the Herleman ring bus to accommodate the new line position. There is a position available so no expansion is needed.	Rebuild the Palmyra – Marblehead 161 kV line and the Marblehead – Herleman 138 kV line as double circuit lines. On the open position run a 345 kV line from Palmyra to Herleman creating a new Palmyra – Herleman 345 kV line.	Add a new leg to the Breaker and a Half substation at Maywood.
Provide a component project cost breakdown into the identified categories along with a total component cost. Costs should be in current year dollars.	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	\$ 2,200,339	\$ 27,957,298	\$ 4,476,628
If this proposal is being submitted as Market Efficiency project, provide an in- service year component project total cost.	3.c.	Component cost (in-service year)	\$ 2,282,873	\$ 29,095,024	\$ 4,640,182
Identify the entity who will be designated the component.	3.d.	Construction responsibility			



# **Substation Upgrade Component**

Instructions		Inputs-1
Provide the corresponding component number from the "Project Components" tab of the proposal ten	nplat <b>5.a.</b>	Component number 1
Identify the name of the existing substation where the upgrade will take place.	5.b.	Substation Herleman
	5.c.	Substation upgrade scope
Describe the scope of the upgrade work at the identified substation.		Upgrade Herleman substation ring bus to include 4th postion.
	5.d.	New equipment description
Describe any new substation equipment and provide the equipment ratings.		One (1) New 345kV Circuit Breaker Three (3) New 345kV Disconnect Switches
bescribe any new substation equipment and provide the equipment rutings.		Bus, Conductor, and Instrument Transformers
	5.e.	Substation assumptions
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.		ATXI has confirmed that there is room in the substation to add the breaker position at Herleman. ATX the Herleman substaiton.
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
tab under the appropriate project component.	5.g.	Real-estate plan
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.		The fence line will not need to be expanded
	5.h.	Redacted information



# Reconductor/Rebuild Transmission Line Component

Instructions		Inputs - 1
Provide the corresponding component number from the "Project Components" tab of the proposal template.	4.a.	Component number 2
Identify the line terminal points. Add additional spaces if required.	4.b.	Terminal points  Palmyra 345 kV Substation  Palmyra 161 kV Substation  Marblehead 136/138 kV substation  Herleman 345 kV substation
Provide the size and type conductor that will be removed.	4.c. 4.d.	Existing Line Physical Characteristics  Existing conductor size and type  954 kcmil 45/7 Rail ACSR  Existing hardware plan
Indicate whether the existing line hardware will be reused. If so, provide the age and condition of the hardware.		All new hardware
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.e.	Existing tower line characteristics  With the exception of the structures that span the Mississippi River all other structure will be replaced as the scope of this project. The Mississippi River crossing is constructed on steal lattice towers and is in g condiction
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.	4.f.	Terrain description  Generally flat farmfield with little elevation change with a 4650 ft river crossing. The river corssing is alreconstructed for a double circuit 345 kV line. It will not require any additional work.
Provide the target ratings for the line.	4.g.	Reconductor/Rebuild Component Plan  Component target ratings 345kV line: 2600 A, 161kV line: 1600
Provide the type and size of the conductor to be installed.	4.h.	Proposed conductor size and type  345kV: Bundled (2 cond.) 795 kcm 26/7 Drake ACSS 161kV: 795 kcm 26/7 Drake ACSS



# Reconductor/Rebuild Transmission Line Component

nsmission 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 2
If the shield wire is to be replaced, identify the type and size to be used.	4.i.	Proposed shield wire size and type 7#7 Alumoweld
Describe the amount of the line that is anticipated to be rebuilt versus reconductored. 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  Except for the section of the line that spans the Mississippi River the entire line will be rebuilt as a double circuit (one 345kV circuit and one 161kV circuit) line on steel monopole structures. Tangents and angles up to 20°line angles will be suspension structures utilizing V-string hardware assemblies. Above 20° line angles will be strain structures.
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.k.	Right of way  No new right of way is required to construct this project.
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	<b>4.</b> I.	Redacted information



# **Greenfield Transmission Line Component**

6. Transmission Line Component			
Provide the corresponding component number from the "Project Components" tab of	th <b>∈6.a.</b>	Component Number	
Provide the substation endpoints for the proposed transmission line component.	6.b.	Line terminal points	Palmyra 345 kV Substation
			Maywood 345 kV Substation
Provide the target ratings for the proposed line.	6.c.	Project ratings	3000 A
Provide the proposed conductor type and size.	6.d.	Conductor type and size	Bundled (2 cond.) 795 kcm 26/7 Drake ACSS
	6.e.	General line description	
Provide a general description of the line, including nominal voltage, whether the facility will be AC or DC and if the construction will be overhead, underground, submarine or some combination.		2.5 mi single circuit, 345kV AC transmis	ssion line built on wood h-frame structures (overhead)
Provide a general description of the evaluated routes or routing study area. Provide a Google Earth .KMZ file with the evaluated routes or study plan.	6.f.	General route description  The route will parallel 3 existing 345kV includes no line angles outside of those	lines (1 single circuit and 1 double circuit line). The line required to get into each substation.
Describe the terrain traversed by the proposed new line.	6.g.	Terrain description Flat farmfield.	
Route description by segment that includes lengths and widths and classified by whether the segment will be new right of way, an expansion of an existing right of way or use an existing right of way. This information may be included with the Google Earth .KMZ.	6.h.	Right of way plan by segment  The complete route will utilize existing elines.	easement that runs along side 3 existing Ameren 345kV



# Greenfield Transmission Line Component

6. Transmission Line Component		
Provide the project right of way and land acquisition plan and approach for both public and private lands.	6.i.	ROW and land acquisition plan no new ROW will be required.
Provide the location and plan for any transmission facility crossings.	6.j.	Transmission facility crossings  There is potential for crossing under a 345kV line immediately outside of the Palmyra substation.
Provide an assessment of the potential environmental impacts (i.e. environmental impact study requirements, environmental permitting, sediment, and erosion control issues).	6.k.	At this time we do not believe a formal Federal Environmental Impact Statement will be required for this project. will review the project site for potential wetlands, threatened and endangered species and habitat, and cultural resource concerns and will work with the appropriate regulatory agencies to avoid, minimize, and mitigate any potential impacts and obtain any permits required for the planned construction activities.  will also review and comply with State and Local regulatory agency requirements regarding sediment and erosion control from the construction activities as well as any storm water design or control requirements for operation of the site after construction.  will review the property for potential floodplain impacts and will work with the appropriate State and Local agencies to minimize any impacts and obtain any required permits.  will review the property to determine if there are any drainage district or levee district assets that may be impacted by the construction of this project.  will consult with the appropriate USACE District office and local authorities to obtain any permits or reviews required for construction.
Proposed tower characteristics such as monopole, lattice, wood h-frame design, double or single circuit, and horizontal, vertical or delta conductor configurations. Note, preliminary drawings for proposed structure types are acceptable in place of a written description.	6.I.	Tower characteristics wood h-frame structures, single circuit, horizontal configuration.
Describe any files or information that has been redacted from this section and provid	6.m.	Redacted information



# **Substation Upgrade Component**

Instructions		Inputs-1
Provide the corresponding component number from the "Project Components" tab of the propo	sal templat <b>5.a.</b>	Component number 3
Identify the name of the existing substation where the upgrade will take place.	5.b.	Substation Maywood
Describe the scope of the upgrade work at the identified substation.	5.c.	Substation upgrade scope  Construct new leg of breaker and half layout. Will relocate the terminal connection for Maywood - Palymat the same time.
Describe any new substation equipment and provide the equipment ratings.	5.d.	New equipment description  Three (3) new 345kV Circuit Breakers Seven (7) new 345kV Disconnect Switches Misc. bus, conductor, instrument transformers
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 an open area within the substation or the relocation of existing equipment.		Substation assumptions  ATXI has confirmed that there is room in the substation to add the breaker and a half leg at Maywood. A owns the Maywood substaiton.
If the upgrade changes or expands upon the substation configuration provide a single line diagram and station general arrangement drawing. These documents should be provided on the 'Redacted Information to the upgrade project component.	ion'	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  The fence line will not need to be expanded
	5.h.	Redacted information



9. Project Financial Information					
Instructions		Inputs			
Provide the planned construction period, include the month and	9.a.	Project Schedule  Capital spend start date (Mo-Yr)  Jan-19			
year of when capital spend will begin, when construction will begin and when construction will end. The final construction	J.u.	Construction start date (Mo-Yr)  Jan-22			
month should be the month preceding the commercial operation month.		Commercial operation date (Mo-Yr) Jun-23			
		Project Capital Expenditures			
Provide, in present year dollars, capital expenditure estimates by	9.b.	Capital expenditure details Total 2019 2020 20	21 2022	2023	2024
year for the Proposing Entity, work to be completed by others		Engineering and design			
(e.g. incumbent TO) and total project. Capital expenditure estimates should include all capital expenditure, including any		Permitting / routing / siting			
ongoing expenditures, for which the Proposing Entity plans to		ROW / land acquisition			
seek FERC approval for recovery.		Materials and equipment			
		Construction and commissioning			
		Construction management Overheads and miscellaneous costs			
		Contingency			
		Proposer total capex			
		Work by others capex			
			61,219 \$ 24,553,757	\$ 6,840,256	
Even if AFUDC is not going to be employed, provide a yearly	9.c.	Total 2019 2020 20	21 2022	2023	2024
AFUDC cash flow.		AFUDC \$ 1,649,251 \$ 11,489 \$	68,061 \$ 1,227,688	\$ 342,013	
Provide any assumptions for the capital expenditure estimate	9.d.	Assumptions for the capital expenditure estimate			
(e.g. design assumptions, weather, manpower needed and work		project cost estimate is based upon the following assumptions:			
		<ul> <li>Schedule float to account for typical amount of in climate weather for the region;</li> </ul>			
		A typical construction work schedule;			
		Design based upon and in accordance with transmission design standards;			
		Vendor standard delivery times for material components;			
		<ul> <li>Reasonable access to the construction area;</li> <li>Blanket pricing for key material components that is in place with strategic suppliers;</li> </ul>			
		Contingency covering the degree of unknowns currently in place at this stage.			
		Reasonable availability for outages to make interconnections.			
Describe any files or information that has been redacted from	9.e.	Redacted information			
this section and provide the basis for the redaction.					



#### **Cost Containment Commitment**

t Containment Commitment Instructions		Inputs
	10.a.	Cost containment commitment description
Provide a description of the cost containment mechanism being proposed.	10.b.	Project scope covered by the cost containment commitment
Indicate what project scope is covered by the proposed cost containment commitment. Identify the components covered by number.		NA NA
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  Cost cap in in-service year dollars
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:
	10.b.iii.	Cost containment capital expenditure exemptions
		Component covered by cost containment  Engineering and design Choose Yes or No Permitting / routing / siting Component covered by cost containment Choose Yes or No

ROW / land acquisition

Taxes **AFUDC** 

**Escalation** 

Materials and equipment

**Construction management** 

**Construction and commissioning** 

Overheads and miscellaneous costs

Choose Yes or No

Choose Yes or No

Choose Yes or No

Choose Yes or No

Choose Yes or No Choose Yes or No

Choose Yes or No

Choose Yes or No

Indicate which components of capital costs fall under the cost cap.



# **Cost Containment Commitment**

10. Cost Containment Commitment		
Instructions		Inputs
Describe any other cost containment measures not detailed above.	10.c.	Describe any other Cost Containment  Measures not covered 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.	10.d.	Cost Commitment Legal Language
Explain any plans the proposing entity has in place to address the situation where project actual costs exceed the proposed cost containment commitment.	10.e.	Actuals Exceed Commitment
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	10.f.	Redacted information