Executive Summary

1. Executive Summary

Instructions		Inputs	
Provide the name of the Proposing Entity. If there are multiple entities, please identify each party.	1.a.	Proposing Entity name	[redacted]
Provide the RTEP Proposal Window in which this proposal is being submitted.	1.b.	Proposal window	2018/19 RTEP Long-Term Proposal Window
Provide the Proposing Entity project proposal id. Use "A, B, C, …", etc. to differentiate between proposals.	1.c.	Proposal identification	[redacted]
PJM proposal identification	1.d.	PJM proposal identification	201819_1-322
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 accomodations for the new line.)	1.e.	General project description	A new 345 kV line will be constructed between the Palmyra and Herleman Substations. The Palmyra Substation and surrounding property is owned by Associated Electric Cooperative Inc. ("AECI") and the Herleman Substation is owned by ATXI. The line will be constructed entirely on existing right-of-way and the project will include a rebuild of an existing Palmyra – Marblehead 161 kV line and a Marblehead – Herleman 138 kV line. At the Palmyra Substation the existing Palmyra – Marblehead 161 kV line will be rebuilt as a 345 kV/161 kV, double circuit line. This line will cross the Mississippi River. But, the river crossing has already been constructed as a 345 kV double circuit line. The conductors are installed hard in parallel on river crossing. The 161 kV circuit will terminate at the Marblehead Substation while the 345 kV circuit will bypass the Marblehead Substation. The existing Marblehead – Herleman 138 kV transmission line will also be rebuilt as a 345 kV/138 kV, double circuit line and will carry the 345 kV circuit into the Herleman Substation. When the project is commissioned, the result will be a 2nd Maywood – Herleman 345 kV transmission line that is constructed entirely on existing right-of-way. AECI will be submitting a Letter of Support to PJM for the proposed project.
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	*Yes*
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	*Yes*

Executive Summary

1. Executive Summary

Instructions		Inputs	
Total current year project cost estimate including estimates for any required Transmission Owner upgrades	**1.i.**	**Project cost estimate (current year)**	$ 33,763,669
Total in-service year project cost estimate including estimates for any required Transmission Owner upgra	**1.j.**	**Project cost estimate (in-service year)**	$ 35,952,795
Project estimated schedule duration in months.	**1.k.**	**Project schedule duration**	46
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.**	[redacted]	
Confirm that all technical analysis files have been provided for this proposal.	**1.n.**	**Technical analysis files provided**	☑
Confirm that all necessary project diagrams have been provided for this proposal.	**1.o.**	**Project diagram files provided**	☑
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**	☑
		If the answer to the cross-border question above at 1.g. was yes, complete the questions below.	
Indicate if an evaluation for interregional cost allocation is desired.	**1.q.i.**	**Interregional Cost Allocation Evaluation**	*Yes*
	1.q.ii.	**Evaluated in interregional analysis under PJM Tariff or Operating Agreement provisions**	*Yes*

1. Executive Summary

Instructions		Inputs
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.		**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 Agreement and Tariff
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.**
		The Marblehead Transformer is a targeted flowgate in both MISO and PJM

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.

2.a.

FG #	Analysis Type	Bus #	Facility Name	To Bus #	To Bus Name	CKT	Voltage	Area

2. Overloaded Facilities

2.b.

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

Overloaded Facilities

2. Overloaded Facilities

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

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)	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.	Construct a 345 kV three (3) position ring bus at the existing Palmyra substation. The property is already owned so no new property will need to be purchased.
3.b.	Component cost (current year)			
	Engineering and design	[redacted]		
	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	$ 25,926,280	$ 5,637,049
3.c.	Component cost (in-service year)	$ 2,282,873	$ 26,979,576	$ 6,690,345
3.d.	Construction responsibility	[redacted]		

Substation Upgrade Component

5. Substation Upgrade Component

Instructions		Inputs-1	
Provide the corresponding component number from the "Project Components" tab of the	**5.a.**	**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 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. ATXI owns 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**	
	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**	
Describe any files or information that has been redacted from this section and provide the basis for the redaction.		N/A	

Reconductor/Rebuild Transmission Line Component

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	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
		Existing Line Physical Characteristics	
Provide the size and type conductor that will be removed.	4.c.	Existing conductor size and type	954 kcmil 45/7 Rail 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	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 part of the scope of this project. The Mississippi River crossing is constructed on steal lattice towers and is in good 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 already constructed for a double circuit 345 kV line. It will not require any additional work.
		Reconductor/Rebuild Component Plan	
Provide the target ratings for the line.	4.g.	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

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	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	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.	4.l. Redacted information	

Substation Upgrade Component

5. Substation Upgrade Component

Instructions		Inputs-1	
Provide the corresponding component number from the "Project Components" tab of the	**5.a.**	**Component number**	3
Identify the name of the existing substation where the upgrade will take place.	**5.b.**	**Substation**	Palmyra 3 Position 4 Ultimate Ring Bus
Describe the scope of the upgrade work at the identified substation.	**5.c.**	**Substation upgrade scope**	Construct new 345kV ring bus at existing Palmyra substation.
Describe any new substation equipment and provide the equipment ratings.	**5.d.**	**New equipment description**	Control enclosure Three (3) new 345kV Circuit Breakers Six (6) 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 of an open area within the substation or the relocation of existing equipment.	**5.e.**	**Substation assumptions**	1. Site work inside fence is construction ready. 2. Substation fence does not require modifications or property expansion 3. Ground grid assumed to be adequate at existing substation expansion area.
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**	The fence line will not need to be expanded
Describe any files or information that has been redacted from this section and provide the basis for the redaction.	**5.h.**	**Redacted information**	N/A

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)	Jan-19
Construction start date (Mo-Yr)	Jan-22
Commercial operation date (Mo-Yr)	Jun-23

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	2019	2020	2021	2022	2023	2024
Engineering and design	[redacted]						
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	$ 32,155,875	$ -	$ 219,680	$ 1,128,923	$ 21,168,814	$ 9,638,458	$ -

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

9.c.

	Total	2019	2020	2021	2022	2023	2024
AFUDC	$ 1,607,794		$ 10,984	$ 56,446	$ 1,058,441	$ 481,923	

9.d.

Assumptions for the capital expenditure estimate

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 access, etc.).

[redacted] project cost estimate is based upon the following assumptions:

- Schedule float to account for typical amount of in climate weather for the region;
- A typical construction work schedule;
- Design based upon and in accordance with [redacted] transmission design standards;
- Vendor standard delivery times for material components;
- Reasonable access to the construction area;
- Blanket pricing for key material components that is in place with strategic suppliers;
- Contingency covering the degree of unknowns currently in place at this stage.
- Reasonable availability for outages to make interconnections.
- Palmyra Ring Bus – Assumed ground grid is existing in the AECI yard

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**: NA
Indicate what project scope is covered by the proposed cost containment commitment. Identify the components covered by number.	10.b.	**Project scope covered by the cost containment commitment**: 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:**

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

10.b.iii. **Cost containment capital expenditure exemptions**

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*

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