

Shawville 230/115-17.2 kV Transformer - Replace 2A transformer with standalone 230/115 kV transformer and install a new 2B transformer for the plant

General Information

Proposing entity name	Company specific
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	Company specific
PJM Proposal ID	100
Project title	Shawville 230/115-17.2 kV Transformer - Replace 2A transformer with standalone 230/115 kV transformer and install a new 2B transformer for the plant
Project description	Install a new 230/115 kV transformer and associated facilities. Replace the Plant's 2B 115-17.2 kV transformer with a larger 230/17.2 kV transformer.
Email	Company specific
Project in-service date	06/2026
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	This project will separate the Plant's generation path from the transmission transformer. This project will install a dedicated 230/115 kV transmission transformer and the Plant's Unit 2 will have a dedicated 230-17.2 kV transformer. In the current configuration of the substation, the 2A transformer serves as one of two GSUs for the unit (via the 17.2 kV tertiary winding). The other outlet is the Plant's 2B 115-17.2 kV transformer (which is not capable of accepting the entire output of the unit). Any time the unit is placed online, taken offline, or trips, the transmission through path is interrupted with the current configuration. This project will eliminate this legacy configuration.

Project Components

1. Shawville Substation: Install new 230/115 kV Transformer
2. Shawville Plant: Purchase new 2B Transformer
3. Garman Substation: Review and revise relay settings
4. Philipsburg Substation: Review and revise relay settings
5. Dubois Substation: Review and revise relay settings
6. Moshannon Substation: Review and revise relay settings
7. Shingletown Substation: Review and revise relay settings
8. Elko Substation: Review and revise relay settings

Substation Upgrade Component

Component title	Shawville Substation: Install new 230/115 kV Transformer
Project description	Install a new 180/240/300 MVA 230/115 kV transformer.
Substation name	Shawville
Substation zone	Penelec
Substation upgrade scope	Install a new 180/240/300 MVA 230/115 kV transformer. Install a new 230 kV breaker to terminate the high side of the new transformer. The low side of the new transformer will be terminated at the former 2A position (and this terminal will be upgraded such that the new transformer will be the most limiting element in the circuit).

Transformer Information

	Name		Capacity (MVA)
Transformer	No. 2A Transformer		180/240/300 MVA
	High Side	Low Side	Tertiary
Voltage (kV)	230	115	

New equipment description	Install a new 180/240/300 MVA 230/115 kV transformer. Install a new 230 kV breaker to terminate the high side of the new transformer. The low side of the new transformer will be terminated at the former 2A position. All equipment will be sized such that the transformer will be the most limiting element of the circuit.
Substation assumptions	- Generation owner will take possession of the existing 230 kV 2A transformer breaker and associated equipment. - 230 kV main bus does not have to be reconducted. - AC station service, relay house floor plan and SCADA RTU are adequate. - 115 kV bus-tie breaker, its DSW's & by-pass switch all have to be replaced for loadability.
Real-estate description	Not Application - No substation expansion is proposed.
Construction responsibility	Company specific
Benefits/Comments	This project will separate the Plant's generation path from the transmission transformer. This project will install a dedicated 230/115 kV transmission transformer and the Plant's Unit 2 will have a dedicated 230-17.2 kV transformer. In the current configuration of the substation, the 2A transformer serves as one of two GSUs for the unit (via the 17.2 kV tertiary winding). The other outlet is the Plant's 2B 115-17.2 kV transformer (which is not capable of accepting the entire output of the unit). In the current configuration, any time the unit is placed online, taken offline, or trips, the transmission through path is interrupted. This project will eliminate this legacy configuration.

Component Cost Details - In Current Year \$

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$4,866,656.35
Component cost (in-service year)	\$5,587,177.60

Substation Upgrade Component

Component title	Shawville Plant: Purchase new 2B Transformer
Project description	Purchase and install a new 140 MVA 230-17.2 kV transformer to replace the Plant's 2B transformer.
Substation name	Shawville Plant
Substation zone	Penelec
Substation upgrade scope	Purchase and install a new 140 MVA 230-17.2 kV transformer and associated facilities to replace the Plant's 2B transformer. Modify the Unit 2 isophase bus for connection to the new transformer and upgrade, as necessary, to meet Plant loadability requirements.

Transformer Information

	Name	Capacity (MVA)		
Transformer	2B	140 MVA		
	High Side	Low Side	Tertiary	
Voltage (kV)	230	17.2		
New equipment description	Purchase and install a new 140 MVA 230-17.2 kV transformer and associated facilities to replace the Plant's 2B transformer. Modify the Unit 2 isophase bus for connection to the new transformer and upgrade, as necessary, to meet Plant loadability requirements.			
Substation assumptions	- Generation owner will take possession of the existing 230 kV 2A transformer breaker and associated equipment. - New transformer purchase will be coordinated with the Plant. - Plant will be responsible for installing new relays to protect the transformer.			
Real-estate description	Not Applicable			
Construction responsibility	Company specific			
Benefits/Comments	This information is considered confidential and proprietary			
Component Cost Details - In Current Year \$				
Engineering & design	This information is considered confidential and proprietary			

Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$3,739,694.78
Component cost (in-service year)	\$4,294,921.45

Substation Upgrade Component

Component title	Garman Substation: Review and revise relay settings
Project description	Review and update relay settings at Garman Substation
Substation name	Garman
Substation zone	Penelec
Substation upgrade scope	Review and update relay settings, as necessary, at Garman Substation.

Transformer Information

None	
New equipment description	No new equipment is required.
Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable
Construction responsibility	Company specific
Benefits/Comments	

Component Cost Details - In Current Year \$

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$26,479.25
Component cost (in-service year)	\$30,582.52

Substation Upgrade Component

Component title	Philipsburg Substation: Review and revise relay settings
Project description	Review and update relay settings at Philipsburg Substation.
Substation name	Philipsburg
Substation zone	Penelec
Substation upgrade scope	Review and update relay settings, as necessary, at Philipsburg Substation.

Transformer Information

None	
New equipment description	No new equipment is required.
Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable

Construction responsibility

Company specific

Benefits/Comments

Component Cost Details - In Current Year \$

Engineering & design

This information is considered confidential and proprietary

Permitting / routing / siting

This information is considered confidential and proprietary

ROW / land acquisition

This information is considered confidential and proprietary

Materials & equipment

This information is considered confidential and proprietary

Construction & commissioning

This information is considered confidential and proprietary

Construction management

This information is considered confidential and proprietary

Overheads & miscellaneous costs

This information is considered confidential and proprietary

Contingency

This information is considered confidential and proprietary

Total component cost

\$26,479.25

Component cost (in-service year)

\$30,582.52

Substation Upgrade Component

Component title

Dubois Substation: Review and revise relay settings

Project description

Review and update relay settings at Dubois Substation

Substation name

Dubois

Substation zone

Penelec

Substation upgrade scope

Review and update relay settings, as necessary, at Dubois Substation.

Transformer Information

None

New equipment description

No new equipment is required.

Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable
Construction responsibility	Company specific
Benefits/Comments	
Component Cost Details - In Current Year \$	
Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$26,479.25
Component cost (in-service year)	\$30,582.52
Substation Upgrade Component	
Component title	Moshannon Substation: Review and revise relay settings
Project description	Review and update relay settings at Moshannon Substation
Substation name	Moshannon
Substation zone	APS
Substation upgrade scope	Review and update relay settings, as necessary, at Moshannon Substation.

Transformer Information

None	
New equipment description	No new equipment is required.
Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable
Construction responsibility	Company specific
Benefits/Comments	

Component Cost Details - In Current Year \$

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$29,857.33
Component cost (in-service year)	\$34,497.19

Substation Upgrade Component

Component title	Shingletown Substation: Review and revise relay settings
Project description	Review and update relay settings at Shingletown Substation
Substation name	Shingletown

Substation zone	APS
Substation upgrade scope	Review and update relay settings, as necessary, at Shingletown Substation

Transformer Information

None	
New equipment description	No new equipment is required.
Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable
Construction responsibility	Company specific
Benefits/Comments	

Component Cost Details - In Current Year \$

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$29,857.33
Component cost (in-service year)	\$34,497.19

Substation Upgrade Component

Component title	Elko Substation: Review and revise relay settings
-----------------	---------------------------------------------------

Project description	Review and update relay settings at Elko Substation
Substation name	Elko
Substation zone	APS
Substation upgrade scope	Review and update relay settings, as necessary, at Elko Substation.

Transformer Information

None	
New equipment description	No new equipment is required.
Substation assumptions	Existing relays will be re-used and settings updated as necessary.
Real-estate description	Not Applicable
Construction responsibility	Company specific
Benefits/Comments	

Component Cost Details - In Current Year \$

Engineering & design	This information is considered confidential and proprietary
Permitting / routing / siting	This information is considered confidential and proprietary
ROW / land acquisition	This information is considered confidential and proprietary
Materials & equipment	This information is considered confidential and proprietary
Construction & commissioning	This information is considered confidential and proprietary
Construction management	This information is considered confidential and proprietary
Overheads & miscellaneous costs	This information is considered confidential and proprietary
Contingency	This information is considered confidential and proprietary
Total component cost	\$29,857.33
Component cost (in-service year)	\$34,497.19

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
GD-LL45	999337	26SHAWVL 2	200726	26SHAWVL 2	2A	115/230	226	Light Load Gen Deliv	Included
GD-LL46	999337	26SHAWVL 2	200726	26SHAWVL 2	2A	115/230	226	Light Load Gen Deliv	Included
N1-LLT20	999337	26SHAWVL 2	200726	26SHAWVL 2	2A	115/230	226	Thermal Light Load	Included
N1-LLT21	999337	26SHAWVL 2	200726	26SHAWVL 2	2A	115/230	226	Thermal Light Load	Included

New Flowgates

None

Financial Information

Capital spend start date 09/2024

Construction start date 02/2026

Project Duration (In Months) 21

Additional Comments

Clone of proposal 2021-W1-449 due to data validation/constraint issue. Purchase requisition for \$5k references 2021-W1-449.