

***PJM Generator Interconnection
U2-060 Camden 5 MW
Feasibility / Impact Study Re-study***

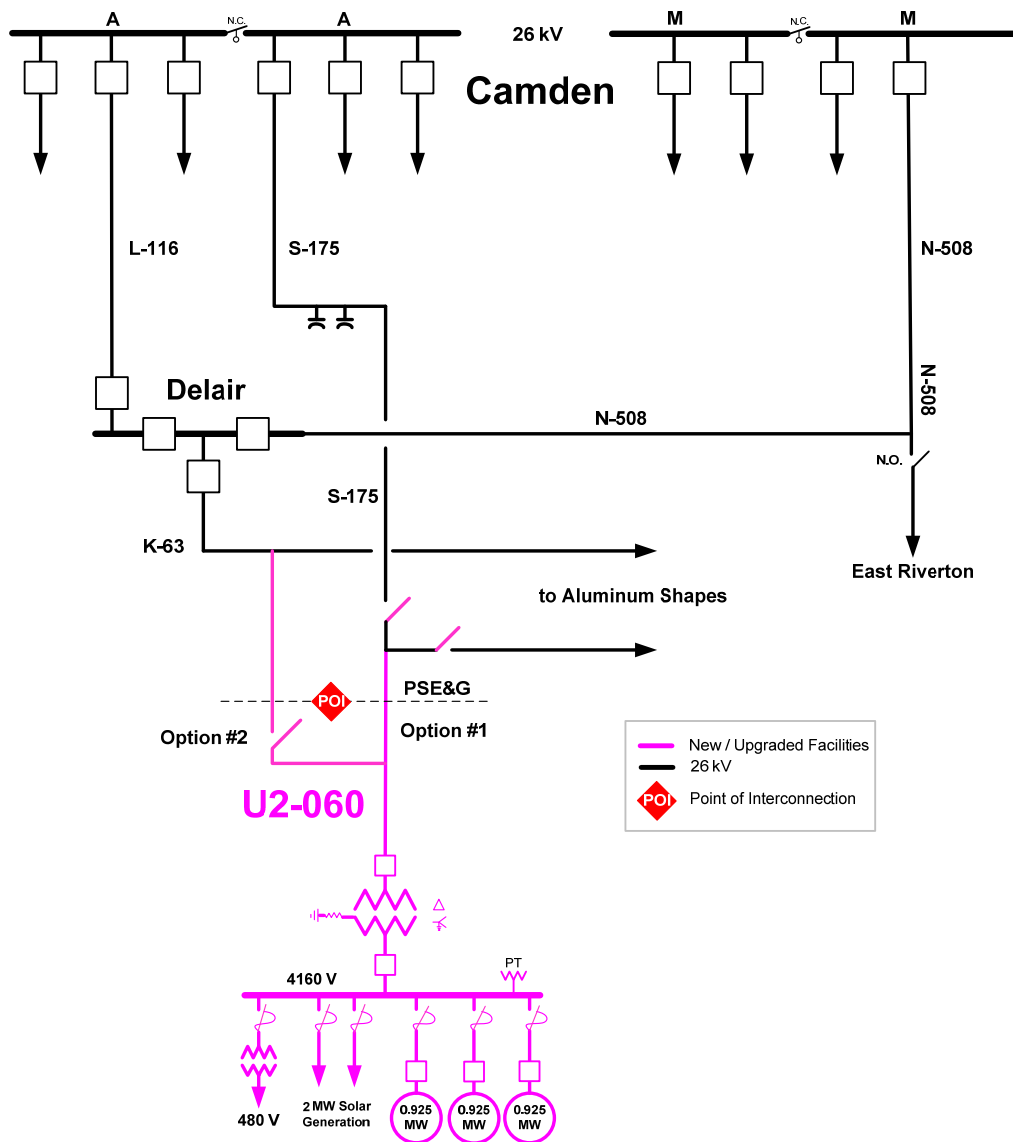
January 2009
DMS # 522501

General

Queue U2-060 is a PPL Renewable Energy, LLC request to change the POI (Point of Interconnection) for 5 MW (Net Capacity) of existing generation presently connected at the Aluminum Shapes 26 kV substation. The existing generation consists of three 1 MW landfill gas generators and 2 MW of solar generation. Project U2-060 is located at Pennsauken Landfill, 9600 River Road, Delair, Camden County, New Jersey.

Direct Connection

The U2-060 generation project can be interconnected to Camden 26 kV line S-175 (Option #1) or K-63 (Option #2) as shown on the one diagram below.



Queue U2-060 can connect to either 26 kV line S-175 (Option #1) or K-63 (Option #2). A third option (Option #3) would be to have a connection to both lines (operation with normal connection to one line and alternate transfer to the other line).

PSE&G Scope of Direct Connection Work

Option #1:

\$ 0	No new Camden sub work – DTT (direct transfer trip) already installed
<u>\$120,000</u>	26 kV Disc Switch and line tap from S-175 line to Queue U2-060
\$120,000	Total estimated cost

Option #2:

\$150,000	Delair & Camden* subs – Install DTT (direct transfer trip) equipment
<u>\$190,000</u>	Line tap from K-63 line to Queue U2-060
\$340,000*	Total estimated cost*

*** Estimated cost can be reduced by \$60,000 to a Total of \$280,000 by eliminating the need to install DTT at Camden. However U2-060 will then not be permitted to generate into circuit K-63 during a planned or forced outage of either circuit L-116 or N-508 (Camden – Delair).**

Option #3:

\$150,000	Delair & Camden* subs – Install DTT (direct transfer trip) equipment
<u>\$260,000</u>	Line taps from S-175 line and K-63 line to Queue U2-060
\$410,000*	Total estimated cost*

*** Estimated cost can be reduced by \$60,000 to a Total of \$350,000 by eliminating the need to install DTT at Camden. However U2-060 will then not be permitted to generate into circuit K-63 during a planned or forced outage of either circuit L-116 or N-508 (Camden – Delair).**

Network Impacts

Queue U2-060 was studied as an injection of a 5 MW Capacity Resource into the Camden 26 kV S-175 or K-63 lines. Project U2-060 was evaluated for compliance with reliability criteria for summer peak conditions in 2012. Potential network impacts were as follows:

NETWORK IMPACTS

Generator Deliverability

(Normal system, all transmission facilities in-service, and single or N-1 contingencies for only the Capacity portion of the interconnection)

No problems were identified.

Multiple Facility Contingency

(Double circuit tower line, stuck breaker and bus fault contingencies were performed for the full energy output)

No problems were identified

Short Circuit Analysis

No problems were identified

Stability Analysis

Not required due to size and location of generation.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queues)

None identified.

NETWORK UPGRADE REQUIREMENTS

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts", initially caused by the addition of this project generation)

None required.

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None required.

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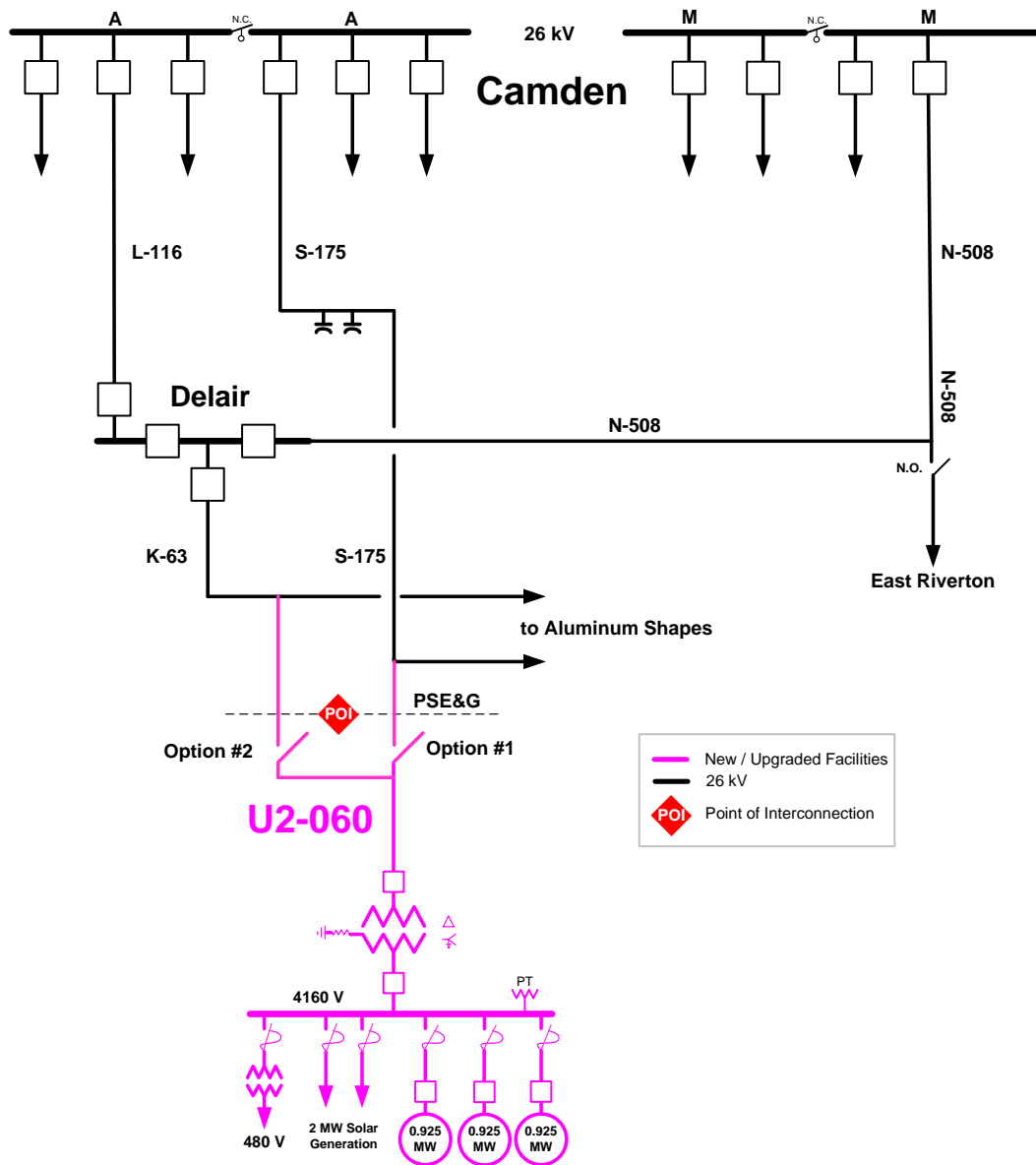
November 2008
DMS # 513375

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PSE&G Scope of Direct Connection Work

Option #1:

\$ 0	No new Camden sub work – DTT (direct transfer trip) already installed
<u>\$ 90,000</u>	Line tap from S-175 line to U2-060
\$ 90,000	Total estimated cost

Option #2:

\$150,000	Delair & Camden subs – Install DTT (direct transfer trip) equipment
<u>\$190,000</u>	Line tap from K-63 line to U2-060
\$340,000	Total estimated cost

Option #3:

\$150,000	Delair & Camden subs – Install DTT (direct transfer trip) equipment
<u>\$260,000</u>	Line taps from S-175 line and K-63 line to U2-060
\$410,000	Total estimated cost

Network Impacts

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