



**Generation Interconnection  
Feasibility Study Report  
for  
Queue Project AE2-126  
DUBOIS-CURWENSVILLE 34.5 KV  
12 MW Capacity / 20 MW Energy**

July, 2019

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## 1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Penelec.

## 2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

PJM utilizes manufacturer models to ensure the performance of turbines is properly captured during the simulations performed for stability verification and, where applicable, for compliance with low voltage ride through requirements. Turbine manufacturers provide such models to their customers. The list of manufacturer models PJM has already validated is contained in Attachment B of Manual 14G. Manufacturer models may be updated from time to time, for various reasons such as to reflect changes to the control systems or to more accurately represent the capabilities turbines and controls which are currently available in the field. Additionally, as new turbine models are developed, turbine manufacturers provide such new models which must be used in the conduct of these studies. PJM needs adequate time to evaluate the new models in order to reduce delays to the System Impact Study process timeline for the Interconnection Customer as well as other Interconnection Customers in the study group. Therefore, PJM will require that any Interconnection Customer with a new manufacturer model must supply that model to PJM, along with a \$10,000 fully refundable deposit, no later than three (3) months prior to the starting date of the System Impact Study (See Section 4.3 for starting dates) for the Interconnection Request which shall specify the use of the new model.

The Interconnection Customer will be required to submit a completed dynamic model study request form (Attachment B-1 of Manual 14G) in order to document the request for the study.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

### 3 General

The Interconnection Customer (IC) has proposed a Solar generating facility located in Clearfield County, Pennsylvania. The installed facilities will have a total capability of 20 MW with 12 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is September 1, 2021. This study does not imply a Transmission Owner (TO) commitment to this in-service date.

<b>Queue Number</b>	<b>AE2-126</b>
<b>Project Name</b>	<b>DUBOIS-CURWENSVILLE 34.5 KV</b>
<b>Interconnection Customer</b>	
<b>State</b>	PA
<b>County</b>	Clearfield
<b>Transmission Owner</b>	PENELEC
<b>MFO</b>	20
<b>MWE</b>	20
<b>MWC</b>	12
<b>Fuel</b>	Solar
<b>Basecase Study Year</b>	2022

## 4 Point of Interconnection

AE2-126 will interconnect with the Penelec distribution system via a tap on the 34.5 kV Curwensville circuit at pole # DC-31421. The IC's proposed generating unit site is approximately 2.0 miles south of Rockton, PA., near 1636 Viaduct Road.

Attachment 1 shows a one-line diagram of the proposed primary direct connection facilities for the AE2-126 generation project to connect to the Penelec distribution system. Attachment 2 provides the proposed location for the point of interconnection. IC will be responsible for constructing all of the facilities on its side of the POI, including the attachment facilities which connect the generator to the Penelec distribution system's direct connection facilities.

## 5 Cost Summary

The AE2-126 project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	\$ 138,800
Direct Connection Network Upgrade	\$ 0
Non Direct Connection Network Upgrades	\$ 29,000
Total Costs	\$ 167,800

In addition, the AE2-126 project may be responsible for a contribution to the following costs

Description	Total Cost
System Upgrades	\$22,230,000

Cost allocations for these upgrades will be provided in the System Impact Study Report.

The costs provided above exclude the Contribution in Aid of Construction ("CIAC") Federal Income Tax Gross Up charge. If, at a future date, it is determined that the CIAC Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

The required Attachment Facilities and Direct and Non-Direct Connection work for the interconnection of the AE2-126 generation project to the Penelec Distribution System is detailed in the following sections. The associated one-line with the generation project Attachment Facilities and the Primary Direct Connection facilities are shown in Attachment 1.

## 6 Transmission Owner Scope of Work

The AE2-126 project will interconnect with the Penelec distribution system via a tap on the 34.5 kV Curwensville circuit at pole # DC-31421. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct the new interconnection station and the associated facilities.

Attachment 1 shows a one-line diagram of the proposed primary direct connection facilities for the AE2-126 generation project to connect to the Penelec distribution system. Attachment 2 provides the proposed location for the point of interconnection. The IC will be responsible for constructing all of the facilities on its side of the POI, including the attachment facilities which connect the generator to the FE distribution system's direct connection facilities.

## 7 Attachment Facilities

The total preliminary cost estimate for the Attachment work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Tap point DC-31421 on Dubois-Curwensville 34.5 kV, add SCADA switch, and primary metering	\$ 138,800
<b>Total Attachment Facility Costs</b>	<b>\$ 138,800</b>

## 8 Direct Connection Cost Estimate

The total preliminary cost estimate for the Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

None

## 9 Non-Direct Connection Cost Estimate

The total preliminary cost estimate for the Non-Direct Connection work is given in the table below. These costs do not include CIAC Tax Gross-up.

Description	Total Cost
Dubois 34.5kV SS. Adjust Remote Relay and Metering Settings.	\$ 14,500
Curwensville 34.5kV SS. Adjust Remote Relay and Metering Settings.	\$ 14,500
<b>Total Non-Direct Connection Facility Costs</b>	<b>\$ 29,000</b>

## 10 System Reinforcements Cost Estimate

Facility	Upgrade Description	Cost
26WARREN 230.0 kV - 26ERIE S TIE 230.0 kV Ckt 1	PN-0012 (472) : Upgrade 1033 ASCR bus conductor at Glade and Warren substations Project Type : FAC Cost : \$130,000 Time Estimate : 9.0 Months	\$130,000
AE2-113 TAP 115.0 kV - 26FARM VLY 115.0 kV Ckt 1	PN-0007 (465) : Reconductor line with high temperature conductor (5.55 miles - 336 ACSS; 6.79 miles 636 ACSS). Project Type : FAC Cost : \$22,100,000 Time Estimate : 20.0 Months	\$22,100,000
	TOTAL COST	\$22,230,000

## 11 Schedule

Based on the scope of work for the Direct and Non-Direct Connection facilities, it is expected to take a minimum of 6 months after the signing of an Interconnection Construction Service Agreement to complete the installation. This includes the requirement for the IC to make a preliminary payment that compensates FE for the first three months of the engineering design work that is related to the construction of the Attachment Facilities. Full initial deposit will be required for the Non-Direct Connection work. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined direct connection and that any distribution system outages will be allowed when requested.

The schedule for the required Network Impact Reinforcements will be more clearly identified in future study phases. The estimate elapsed time to complete each of the required reinforcements is identified in the “System Reinforcements” section of the report.

## 12 Transmission Owner Analysis

Penelec performed an analysis of its distribution system. The AE2-126 project did not contribute to any overloads on the distribution system.

## 13 Interconnection Customer Requirements

### 13.1 System Protection

An analysis was conducted to assess the impact of the Dubois-Curwensville 34.5 kV (AE2-126) Project on the system protection requirements in the area. The results of this review show that the following relay additions will be required:

Proposed single line diagrams show the IC constructing a generation facility they call “UN-Viaduct” tapping Penelec’s Dubois - 34.5kV Curwensville at pole DC-31421.

The 34.5kV interconnection proposal will require Developer to meet applicable "Technical Requirements" as outlined in First Energy's document titled “Technical Requirements for the Interconnection of Customer-Owned Generation to the FirstEnergy Distribution System”.

Protection requirements are included in the "Technical Requirements" document.

### 13.2 General Concerns

It is to be understood, for abnormal operation of the Penelec system, which could cause Developer’s generation facility to be electrically isolated from the Penelec system synchronous source via the tripping of a interconnecting primary voltage line or device, Developer will, via Penelec’s direction, be required to disconnect the generation from Penelec’s system and remain disconnected (**units are required to be OFF LINE**), until the Penelec system normal circuitry is restored. These abnormal conditions will be reviewed by Penelec system operators as to the need for the generation facility to be disconnected.

### 13.3 Requirements for Owner’s/Developer’s generation IPP Facility

The proposed interconnection Owner’s/Developer’s facilities must be designed in accordance with the document titled FirstEnergy Distribution Engineering Practices Interconnection of Customer-Owned Generation to the FirstEnergy Distribution System dated 11/17/14 located at the following link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>

The document is referred to as engineering practice EP(# 02-280) with section 4 part C specifically referencing the “interconnection technical requirements”. Certain protection requirement are shown.

Additionally, Owner/Developer is responsible to provide adequate protection (for their equipment) under any distribution system operating condition' - which includes 'Separation from supply' (i.e. tripping of F.E. circuit breakers) and 'Re-synchronizing the generation after electric restoration of the supply' (i.e. reclosing of F.E. circuit breakers).

Owner's/Developer's protection must be designed to coordinate with the reclosing practices of FirstEnergy line protective devices. The generator must cease to energize the FirstEnergy circuit to which it is connected prior to reclosing of any (FE) automatic reclosing devices.

Owners/Developer's electrical protection and control schematics shall be provided to FE for consideration. FE may request modifications, if required, to meet the technical requirements.

## **14 Compliance Issues**

IC will be responsible for meeting a power factor between 0.95 lagging (producing MVARs) to 0.95 leading (absorbing MVARs) and assure that voltage deviation will be less than 1.0 volt as measured at the POI under all Solar Gen operating conditions due to the inherent dynamic reactive power capability of this solar facility.

Generators with no inherent VAR (reactive power) control capability, or those that have a restricted VAR capability less than the defined requirements, must provide dynamic supplementary reactive support located at the generation facility with electrical characteristics equivalent to that provided by a similar sized synchronous generator. A Dynamic Reactive Compensation (either Static VAR Compensator (SVC) or STATCOM) or other method be applied in order to maintain the required specifications at the POI. IC is responsible for the installation of equipment on its side of the POI in order to adhere to the criteria stated above by FirstEnergy.

## **15 Revenue Metering and SCADA Requirements**

### **15.1 PJM Requirements**

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

### **15.2 PENELEC Requirements**

IC will be required to comply with all FE Revenue Metering Requirements for Generation Interconnection Customers. These FE requirements are the following:

The FE operating company (Penelec) shall provide, own, operate, test, and maintain the revenue metering equipment at the Interconnection Customer's (IC) expense. The revenue metering equipment includes, but is not limited to, current transformers, voltage transformers, secondary wires, meter socket, bidirectional revenue meter, and associated devices. The IC shall mount the instrument transformers unless otherwise agreed to by Penelec. The instrument transformers and meter socket shall be installed in a location that is readily accessible to authorized Penelec representatives. Penelec will provide the IC access to bidirectional kWh and kVARh pulses from the Penelec meter at the IC's expense if requested. The IC shall, at its expense, install, own, operate, test, and maintain any metering and telemetry equipment that may be required to provide real-time meter data to FE or PJM.

## 16 Network Impacts

The Queue Project AE2-126 was evaluated as a 20 MW (Capacity 12 MW) injection at the Dubois 34.5 kV Substation (physical connection at a tap on the 34.5 kV Curwensville circuit at pole # DC-31421) in the PENELEC area. Project AE2-126 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE2-126 was studied with a commercial probability of 53%. Potential network impacts were as follows:

## Summer Peak Load Flow

## 17 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

None

## 18 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1492930	200811	26WARREN	PENELEC	200918	26ERIE S TIE	PENELEC	1	PN-P2-3-PN-345-003A	breaker	621.0	99.81	100.17	DC	2.19
7021654	941190	AE2-113 TAP	PENELEC	200668	26FARM VLY	PENELEC	1	PN-P2-3-PN-230-8M_SUM_WIN	breaker	160.0	98.19	100.24	DC	3.27

## 19 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 Queue)

None

## 20 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

None

## 21 System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
1492930	1	26WARREN 230.0 kV - 26ERIE S TIE 230.0 kV Ckt 1	PN-0012 (472) : Upgrade 1033 ASCR bus conductor at Glade and Warren substations Project Type : FAC Cost : \$130,000 Time Estimate : 9.0 Months	\$130,000
7021654	2	AE2-113 TAP 115.0 kV - 26FARM VLY 115.0 kV Ckt 1	PN-0007 (465) : Reconductor line with high temperature conductor (5.55 miles - 336 ACSS; 6.79 miles 636 ACSS). Project Type : FAC Cost : \$22,100,000 Time Estimate : 20.0 Months	\$22,100,000
			TOTAL COST	\$22,230,000

## 22 Flow Gate Details

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact. It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

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## 22.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
1492930	200811	26WARREN	PENELEC	200918	26ERIE S TIE	PENELEC	1	PN-P2-3-PN-345-003A	breaker	621.0	99.81	100.17	DC	2.19

Bus #	Bus	MW Impact
200642	26SENECA#1	7.63
200643	26SENECA#2	8.12
200644	26SENECA#3	0.61
200649	26PENNTech	0.71
200894	26K02	2.99
201201	26WRREN CT	2.23
236828	01GRAYMONT	0.29
290086	Q-036 E	2.39
914101	Y2-055	9.33
915952	Y3-092 FTWR	51.58
915953	Y3-092 NFTWR	51.58
916202	Z1-069 E	4.25
919491	AA2-000	35.13
923821	AB2-019	2.89
925512	AC1-025 E	0.11
930411	AB1-082	2.08
930511	AB1-092	1.29
931092	AB1-160 E	1.22
932571	AC2-077	1.46
936421	AD2-055	2.66
936991	AD2-133 C	1.08
936992	AD2-133 E	4.92
939171	AE1-147 C	0.89
939172	AE1-147 E	0.59
940201	AE2-001 C	0.89
940202	AE2-001 E	0.59
940681	AE2-055 C	0.85
940682	AE2-055 E	0.56
940861	AE2-074 C O1	1.58
940862	AE2-074 E O1	2.08
941191	AE2-113 C O1	8.24
941192	AE2-113 E O1	8.87
941251	AE2-119 C	1.02
941252	AE2-119 E	0.68
941261	AE2-120 C	0.88
941262	AE2-120 E	0.59
941271	AE2-121 C	0.47
941272	AE2-121 E	0.32
941321	AE2-126 C	1.31
941322	AE2-126 E	0.88

941331	AE2-129 C	0.86
941332	AE2-129 E	0.57
941351	AE2-131 C	0.86
941352	AE2-131 E	0.57
941491	AE2-146 C	6.58
941492	AE2-146 E	9.28
942351	AE2-248 C	0.69
942352	AE2-248 E	0.46
942491	AE2-262 C	4.23
942492	AE2-262 E	2.84
942501	AE2-263 C	3.98
942502	AE2-263 E	2.66
942813	AE2-299 BAT	17.61
942961	AE2-316 C	3.27
942962	AE2-316 E	4.66
BLUEG	BLUEG	5.17
CALDERWOOD	CALDERWOOD	0.45
CANNELTON	CANNELTON	0.31
CATAWBA	CATAWBA	0.24
CBM-N	CBM-N	1.01
CHEOAH	CHEOAH	0.41
CHILHOWEE	CHILHOWEE	0.15
COFFEEN	COFFEEN	0.55
COTTONWOOD	COTTONWOOD	1.91
DUCKCREEK	DUCKCREEK	1.24
EDWARDS	EDWARDS	0.57
ELMERSMITH	ELMERSMITH	0.53
FARMERCITY	FARMERCITY	0.36
G-007A	G-007A	2.37
GIBSON	GIBSON	0.22
HAMLET	HAMLET	0.35
NEWTON	NEWTON	1.44
NYISO	NYISO	4.33
PRAIRIE	PRAIRIE	2.61
SANTEETLA	SANTEETLA	0.12
SMITHLAND	SMITHLAND	0.2
TATANKA	TATANKA	0.66
TILTON	TILTON	0.68
TRIMBLE	TRIMBLE	0.57
TVA	TVA	1.55
UNIONPOWER	UNIONPOWER	0.68
VFT	VFT	6.5

## 22.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
7021654	941190	AE2-113 TAP	PENELEC	200668	26FARM VLY	PENELEC	1	PN-P2-3-PN-230-8M_SUM_WIN	breaker	160.0	98.19	100.24	DC	3.27

Bus #	Bus	MW Impact
200649	26PENNTech	1.29
236828	01GRAYMONT	0.26
290086	Q-036 E	2.13
919491	AA2-000	27.18
925512	AC1-025 E	0.09
930511	AB1-092	1.0
936421	AD2-055	2.05
936991	AD2-133 C	0.96
936992	AD2-133 E	4.37
939171	AE1-147 C	0.77
939172	AE1-147 E	0.52
940201	AE2-001 C	0.77
940202	AE2-001 E	0.51
940681	AE2-055 C	0.73
940682	AE2-055 E	0.49
941191	AE2-113 C O1	35.95
941192	AE2-113 E O1	38.71
941251	AE2-119 C	1.08
941252	AE2-119 E	0.72
941261	AE2-120 C	0.77
941262	AE2-120 E	0.51
941271	AE2-121 C	0.41
941272	AE2-121 E	0.28
941321	AE2-126 C	1.96
941322	AE2-126 E	1.31
941331	AE2-129 C	0.84
941332	AE2-129 E	0.56
941351	AE2-131 C	0.84
941352	AE2-131 E	0.56
942351	AE2-248 C	0.6
942352	AE2-248 E	0.4
942491	AE2-262 C	3.74
942492	AE2-262 E	2.51
942501	AE2-263 C	3.52
942502	AE2-263 E	2.35
942961	AE2-316 C	2.67
942962	AE2-316 E	3.81
BLUEG	BLUEG	0.96
CALDERWOOD	CALDERWOOD	0.08
CANNELTON	CANNELTON	0.06
CARR	CARR	0.27

CATAWBA	CATAWBA	0.04
CHEOAH	CHEOAH	0.07
CHILHOWEE	CHILHOWEE	0.03
COFFEEN	COFFEEN	0.1
COTTONWOOD	COTTONWOOD	0.35
DUCKCREEK	DUCKCREEK	0.23
EDWARDS	EDWARDS	0.11
ELMERSMITH	ELMERSMITH	0.1
FARMERCITY	FARMERCITY	0.07
G-007A	G-007A	0.58
GIBSON	GIBSON	0.04
HAMLET	HAMLET	0.06
NEWTON	NEWTON	0.27
PRAIRIE	PRAIRIE	0.48
RENSSELAER	RENSSELAER	0.2
SANTEETLA	SANTEETLA	0.02
SMITHLAND	SMITHLAND	0.04
TATANKA	TATANKA	0.12
TILTON	TILTON	0.13
TRIMBLE	TRIMBLE	0.11
TVA	TVA	0.28
UNIONPOWER	UNIONPOWER	0.12
VFT	VFT	1.55

## Affected Systems

## **23 Affected Systems**

### **23.1 LG&E**

LG&E Impacts to be determined during later study phases (as applicable).

### **23.2 MISO**

MISO Impacts to be determined during later study phases (as applicable).

### **23.3 TVA**

TVA Impacts to be determined during later study phases (as applicable).

### **23.4 Duke Energy Progress**

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

### **23.5 NYISO**

NYISO Impacts to be determined during later study phases (as applicable).

## 24 Contingency Descriptions

Contingency Name	Contingency Definition
PN-P2-3-PN-345-003A	CONTINGENCY 'PN-P2-3-PN-345-003A' /* WAYNE 345KV STUCK BREAKER DISCONNECT BUS 200595 /* 26WAYNE 345 END
PN-P2-3-PN-230-8M_SUM_WIN	CONTINGENCY 'PN-P2-3-PN-230-8M_SUM_WIN' /* GLADE STUCK BREAKER B42 (FOREST/SENECA) DISCONNECT BRANCH FROM BUS 200581 TO BUS 200593 CKT 1 /* 26FOREST 230 26GLADE 230 DISCONNECT BRANCH FROM BUS 200593 TO BUS 200594 CKT 1 /* 26GLADE 230 26SENECA 230 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200642 CKT 1 /* 26SENECA 230 26SENECA#1 14 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200643 CKT 1 /* 26SENECA 230 26SENECA#2 14 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200644 CKT 1 /* 26SENECA 230 26SENECA#3 14 REMOVE MACHINE 1G FROM BUS 200642 /* 26SENECA#1 14 REMOVE MACHINE 2G FROM BUS 200643 /* 26SENECA#2 14 REMOVE MACHINE 3 FROM BUS 200644 /* 26SENECA#3 14 END

## Short Circuit

## 25 Short Circuit

The following Breakers are overduty:

None

## 26 Attachment 1 – One Line

## 27 Attachment 2 – Project Location