Generation Interconnection

Feasibility Study Report

for

Queue Project AG1-329

CONNEAUT 12.47 KV

4.4 MW Capacity / 5 MW Energy

January 2021

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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 Mid-Atlantic Interstate Transmission, LLC (MAIT) (PENELEC Zone).

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.

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; Storage generating facility located in Crawford County, Pennsylvania. The installed facilities will have a total capability of 5 MW with 4.4 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is July 31, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-329
Project Name	CONNEAUT 12.47 KV
State	Pennsylvania
County	Crawford
Transmission Owner	MAIT (PENELEC)
MFO	5
MWE	5
MWC	4.4
Fuel	Solar; Storage
Basecase Study Year	2024

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AG1-329 will interconnect with the PENELEC distribution system at the Conneaut 69 kV substation. The site is located on the 12.47kV Wye distribution circuit, W174, fed from Conneaut Substation. The point of common coupling (PCC) is proposed to be located at 7646 Atlantic Lake Road, Hartstown PA, 1613.

5 Cost Summary

The AG1-329 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$4,835,500
TO Identified System Network Upgrade Costs	$104,061,673[1]
PJM Identified System Network Upgrade Costs	$0
Total Costs	$108,897,173

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 2016-36, 2016-25 I.R.B. (6/20/2016). If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Cost allocations for any System Upgrades will be provided in the System Impact Study Report.

[1] This project currently causes and/or contributes to overloads of the Transmission System (see Transmission Owner Analysis section below) and therefore has potential to have cost allocation for the system reinforcements listed in the report. This will be re-evaluated in the System Impact phase. The results may vary with queue customers withdrawing from the queue and other generators deactivating over time. If a customer is the first to cause the need for a project (causes loading to exceed 100% of rating), then the customer is responsible. If a customer contributes to a facility that is already overloaded by a prior queue, then they may receive cost allocation.

6 Transmission Owner Scope of Work

AG1-329 will interconnect with the PENELEC distribution system at the Conneaut 69 kV substation. The site is located on the 12.47kV Wye distribution circuit, W174, fed from Conneaut Substation. The point of common coupling (PCC) is proposed to be located at 7646 Atlantic Lake Road, Hartstown PA, 1613.

The total physical interconnection costs is given in the table below:

Description	**Total Cost**
Construct new 69/12.5kV mod Substation	$3,250,000
Construct new 69kV tap to sub	$725,000
Construct new 1.3 mile dedicated 12.5kV feeder to DER from substation	$808,000
Primary metering costs, SCADA tie-in, and commissioning	52,500
Total Physical Interconnection Costs	$4,835,500

7 Schedule

Based on the scope of work for the interconnection facilities, it is expected to take a minimum of **24 months** after the signing of an Interconnection Agreement and construction kickoff call to complete the installation. 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 work and that any system outages will be allowed when requested.

If the customer is ultimately responsible for network upgrades, then the schedule for those upgrades will be refined in future study phases. The customer would need to wait for those upgrades to be completed prior to commercial operation unless determined deliverable by an interim deliverability study. The elapsed time to complete any network upgrades is provided in the System Reinforcements table of this report[1].

8 Transmission Owner Analysis[2]

8.1 Transmission Owner Identified Network Impacts to Distribution Facilities

Potential TO identified network impacts to Transmission Owner distribution facilities were as follows:

None

8.2 Transmission Owner Identified Network Impacts to Sub-Regional Facilities

Potential TO identified network impacts to Transmission Owner Sub-Regional facilities were as follows:

Idx	Overloaded Element	Contingency	Rating [MVA]	Loading Before %	Loading After %	Contribution [MW]
33	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	53	217.71%	221.55%	2.04
47	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-A	53	133.82%	137.07%	1.72
44	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-B	53	142.67%	145.92%	1.72
51	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-027-A	53	124.88%	127.43%	1.35
39	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	Base Case	32	152.78%	156.50%	1.19
30	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	43	281.46%	286.22%	2.05
42	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-B	43	129.14%	133.90%	2.05
35	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	ATSI-P1-2-OEE-69-024	43	181.01%	185.02%	1.72
36	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	ATSI-P1-2-OEE-69-027-A	43	173.53%	176.69%	1.36
40	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	ATSI-P1-2-OEE-69-027-B	43	153.56%	156.72%	1.36
32	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	Base Case	27	214.51%	218.95%	1.20
43	239861 02CP.REYN+ 69.0 239104 02SHARON 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	72	152.76%	155.61%	2.05

[2] For TO Distribution Facilities that need upgrades, the TO has applied their cost allocation rules. For TO Sub-Regional Facilities in need of upgrades, PJM Cost Allocation Criteria has been applied.

Idx	Overloaded Element	Contingency	Rating [MVA]	Loading Before %	Loading After %	Contribution [MW]
64	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	ATSI-P1-2-OEE-138-005-B-A	46	104.43%	105.61%	0.54
46	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	46	153.07%	155.06%	0.92
66	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-A	46	102.98%	104.50%	0.70
59	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-B	46	109.67%	111.19%	0.70
62	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	ATSI-P1-2-OEE-69-024	46	106.02%	107.55%	0.70
58	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	Base Case	47	110.36%	111.85%	0.55
50	239870 02HEMPFIEL 69.0 239871 02HART.TAP 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	46	134.54%	136.53%	0.92
48	239893 02Y299+ 69.0 239104 02SHARON 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	76	138.42%	141.10%	2.04
41	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	48	169.46%	171.37%	0.92
57	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-B	48	108.38%	110.29%	0.92
56	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-A	48	118.77%	120.23%	0.70
53	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-B	48	125.18%	126.64%	0.70
54	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	ATSI-P1-2-OEE-69-024	48	121.68%	123.14%	0.70
68	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	Base Case	47	106.06%	107.24%	0.55
29	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	43	298.06%	302.82%	2.05
37	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-B	43	145.74%	150.50%	2.05
34	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-024	43	193.95%	197.96%	1.72
45	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-026	43	150.39%	153.17%	1.20
38	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	ATSI-P1-2-OEE-69-027-B	43	163.02%	166.18%	1.36
31	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	Base Case	27	227.01%	231.45%	1.20
49	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	ATSI-P1-2-OEE-138-012-A	56	150.29%	151.93%	0.92
65	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-A	56	106.99%	108.24%	0.70
60	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	ATSI-P1-2-OEE-69-022-B	56	112.49%	113.74%	0.70
63	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	ATSI-P1-2-OEE-69-024	56	109.49%	110.74%	0.70
61	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	Base Case	47	112.31%	113.49%	0.55

8.3 System Reinforcements on Distribution Facilities

None

8.4 System Reinforcements on Sub-Regional Facilities

Idx	Facility	Upgrade ID	Upgrade Description	Cost
33,47,44, 51,39	238949 02MAYSVL 69.0 239893 02Y299+ 69.0 Ckt 1	OEE-014B	**ATSI** **OEE-014B:** Reconductor the Maysville-Sharon Tap 69 kV Line segment (9.4 miles). Upgrade remote ends so that the TL is the most limiting element of the circuit. Time Estimate: 48 Cost: $23,707,472 Ratings: 177.0/203.0/203.0 MVA	$23,707,472
30,42,35, 36,40,32	238949 02MAYSVL 69.0 938580 AE1-079 TAP 69.0 Ckt 1	OEE-012A, OEE-012B, OEE-012C	**ATSI** **OEE-012A:** Reconductor the portion of the Maysville-AE1-079 Tap 69 kV Line segment. The AE1-079 generator is roughly 1.25 miles from Maysville and 2.35 from Camp Raynolds (near structure 62 of the Maysville-Sharon Y-301 69 kV Line). Time Estimate: 30 Cost: $3,234,264 Ratings: 69.0/83.0/83.0 MVA **OEE-012B:** Reconductor the Maysville-AE1-079 Tap 69 kV Line segment (1.25 miles) . The AE1-079 generator is roughly 1.25 miles from Maysville and 2.35 from Camp Raynolds (near structure 62 of the Maysville-Sharon Y-301 69 kV Line). Time Estimate: 30 Cost: $3,140,063 Ratings: 111.0/134.0/134.0 MVA **OEE-012C:** Reconductor the Maysville-AE1-079 Tap 69 kV Line segment (1.25 miles). The AE1-079 generator is roughly 1.25 miles from Maysville and 2.35 from Camp Raynolds (near structure 62 of the Maysville-Sharon Y-301 69 kV Line) Time Estimate: 30 Cost: $3,140,063 Ratings: 177.0/203.0/203.0 MVA	$9,514,390
43	239861 02CP.REYN+ 69.0 239104 02SHARON 69.0 Ckt 1	OEE-013A, OEE-013C	**ATSI** **OEE-013A:** Upgrade the RT at Sharon so that the TL is limiting the circuit. Time Estimate: 12 Cost: $502,410 Ratings: 69.0/83.0/83.0 MVA **OEE-013C:** Reconductor the Camp Reynolds-Sharon 69 kV Line segment. Time Estimate: 54 Cost: $27,381,345 Ratings: 121.0/146.0/146.0 MVA	$27,883,755
64,46,66, 59,62,58, 50	239869 02GRNVLY80 69.0 239870 02HEMPFIEL 69.0 Ckt 1	OEE-017A	**ATSI** **OEE-017A:** Reconductor the Greenville-Hempfield 69 kV Line segment (2.1 miles). Upgrade remote ends so that the TL is the most limiting element of the circuit. Time Estimate: 30 Cost: $5,997,519 Ratings: 80.0/96.0/96.0 MVA	$5,997,519
50	239870 02HEMPFIEL 69.0 239871 02HART.TAP 69.0 Ckt			

Idx	Facility	Upgrade ID	Upgrade Description	Cost
48	239893 02Y299+ 69.0 239104 02SHARON 69.0 Ckt 1	OEE-015AA, OEE-015A	**ATSI** **OEE-015AA:** Upgrade RT at Sharon to exceed TL ratings Time Estimate: 12 Cost: $502,410 Ratings: 72.0/91.0/91.0 MVA **OEE-015A:** Reconductor the Sharon-Sharon Tap 69 kV Line segment (3.3 miles). Upgrade remote ends so that the TL is the most limiting element of the circuit. Time Estimate: 36 Cost: $9,074,781 Ratings: 111.0/134.0/134.0 MVA	$9,577,191
41,57,56, 53,54,68	239941 02HNDERSN 69.0 238955 02MCDOWL 69.0 Ckt 1	OEE-018A, OEE-018C	**ATSI** **OEE-018A:** Replace the metering ay McDowell so that the TL is the most limiting element Time Estimate: 12 Cost: $376,808 Ratings: 47.0/56.0/56.0 MVA **OEE-018C:** Reconductor the Henderson-McDowell 69 kV Line segment. Upgrade remote ends so that the TL is the most limiting element of the circuit. Time Estimate: 42 Cost: $16,077,120 Ratings: 80.0/96.0/96.0 MVA	$16,453,928
29,37,34, 45,38,31	938580 AE1-079 TAP 69.0 239861 02CP.REYN+ 69.0 Ckt 1	OEE-011C	**ATSI** **OEE-011C:** Reconductor the AE1-079 Tap-Camp Reynolds 69 kV Line segment (2.35 miles). The AE1-079 generator is roughly 1.25 miles from Maysville and 2.35 from Camp Raynolds (near structure 62 of the Maysville-Sharon Y-301 69 kV Line) Time Estimate: 30 Cost: $5,903,318 Ratings: 177.0/203.0/203.0 MVA	$5,903,318
49,65,60, 63,61	939540 AE1-183 TAP 69.0 239941 02HNDERSN 69.0 Ckt 1	OEE-016B	**ATSI** **OEE-016B:** Reconductor the AE1-183 Tap-Henderson Tap 69 kV Line segment. The AE1-183 generator is roughly 8.1 miles from McDowell (near structure 108 of the Maysville-McDowell 69 kV Line) . Time Estimate: 30 Cost: $5,024,100 Ratings: 111.0/134.0/134.0 MVA	$5,024,100
			TOTAL COST	**$104,061,673**[1]

9 Interconnection Customer Requirements

9.1 General

In addition to the IC requirements identified in various options described in this report, the CG's interconnection must conform with all the requirements identified in IEEE Std. 1547-2018, unless a requirement has been specifically waived or altered, in writing, by The Company. The IC is advised to review all of the interconnection

guidance provided in the document titled, Customer Guide for Retail Interconnection of Electric Power Producing and Storage Facilities, Commercial/Industrial located on the FirstEnergy/Company website for any additional requirements beyond those provided in IEEE-1547-2018.

9.2 Power Factor

The CG shall design its facility to maintain a power factor as defined and specified by The Company for all real power export levels as measured at the POC or PCC, as specified by The Company. The specified power factor requirements may vary between 85% lagging to 90% leading and may be fixed, or variable. DER power factor requirements specified by The Company will be defined in the Interconnection Agreement.

9.3 Metering and Communications

A bi-directional revenue meter and the metering current transformers will need to be installed. All costs incurred by The Company associated with the meter upgrades shall be the responsibility of the IC.

The IC must provide Scada Control and Telemetry for the proposed installation.

1) Provide trip capability to support circuit reconfigurations in distribution automation or manual reconfiguration scenarios.
2) Provide key locational production, voltage and var data to assist in circuit management and planning.

FirstEnergy has standardized on DNP3 as the communications interface protocol and developed a common set of DNP3 points to be communicated between the Customer's remote terminal unit (RTU) and FirstEnergy for distribution connected DER. Additional information regarding customer SCADA is provided in Appendix A. (From EP 02-280 DEP Review and Analysis of Interconnection Applications)

10 Revenue Metering and SCADA Requirements

10.1 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.

10.2 Meteorological Data Reporting Requirements

The solar generation facility shall provide the Transmission Provider with site-specific meteorological data including:

- Back Panel temperature (Fahrenheit) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Irradiance (Watts/meter^2) - (Required for plants with Maximum Facility Output of 3 MW or higher)
- Ambient air temperature (Fahrenheit) - (Accepted, not required)
- Wind speed (meters/second) - (Accepted, not required)

- Wind direction (decimal degrees from true north) - (Accepted, not required)

10.3 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

http://www.pjm.com/planning/design-engineering/to-tech-standards/

11 Summer Peak - Load Flow Analysis

The Queue Project AG1-329 was evaluated as a 5.0 MW (Capacity 4.4 MW) injection at the Conneaut 69 kV substation in the ATSI area. Project AG1-329 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-329 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

None

11.2 Multiple Facility Contingency

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

None

11.3 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

11.4 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.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONTNAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
16793897	238948	02MAYSVL	138.0	ATSI	958850	AF2-176 TAP	138.0	ATSI	1	ATSI-P1-2-OEE-69-022-B	operation	124.0	112.38	114.46	DC	2.58
16997969	958850	AF2-176 TAP	138.0	ATSI	238944	02MASURY	138.0	ATSI	1	ATSI-P1-2-OEE-69-022-B	operation	124.0	151.14	153.22	DC	2.58
16997969	958850	AF2-176 TAP	138.0	ATSI	238944	02MASURY	138.0	ATSI	1	Base Case	operation	124.0	129.57	131.23	DC	2.06

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

None

11.6 Flow Gate Details

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

None

11.7 Queue Dependencies

The Queue Projects below are listed in one or more indices for the overloads identified in your report. These projects contribute to the loading of the overloaded facilities identified in your report. The percent overload of a facility and cost allocation you may have towards a particular reinforcement could vary depending on the action of these earlier projects. The status of each project at the time of the analysis is presented in the table. This list may change as earlier projects withdraw or modify their requests.

None

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
Base Case	
ATSI-P1-2-OEE-69-022-B	CONTINGENCY 'ATSI-P1-2-OEE-69-022-B' /* MAYSVILLE - SHARON 69 [Y-301] DISCONNECT BRANCH FROM BUS 938580 TO BUS 239861 CKT 1 /* AE1-079 TAP 69 02CP.REYN+ 69 DISCONNECT BRANCH FROM BUS 239104 TO BUS 239861 CKT 1 /* 02SHARON 69 02CP.REYN+ 69 DISCONNECT BUS 239894 /* 02CP.REYNL 69 DISCONNECT BUS 239890 /* 02GRNV MTL 69 END

12 Short Circuit Analysis

The following Breakers are overdutied:

None

13 Affected Systems

13.1 NYISO

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

13.2 MISO

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

14 Attachment 1: One Line Diagram