Generation Interconnection

Feasibility Study Report

for

Queue Project AG1-511

KITTATINNY 230 KV

30 MW Capacity / 50 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 JCPL.

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.

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3 General

The Interconnection Customer (IC), has proposed a Solar; Storage generating facility located in Warren County, New Jersey. The installed facilities will have a total capability of 50 MW with 30 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 01, 2024. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-511
Project Name	KITTATINNY 230 KV
State	New Jersey
County	Warren
Transmission Owner	JCPL
MFO	50
MWE	50
MWC	30
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.

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4 Point of Interconnection

4.1 Primary Point of Interconnection

AG1-511 will interconnect at a Primary Point of Interconnection with the JCPL transmission system by constructing a new direct connection to the Kittatinny 230 kV substation.

4.2 Secondary Point of Interconnection

AG1-511 will interconnect at a Secondary Point of Interconnection with the JCPL system by tapping the Kittantinny – Andover 34.5 kV line. A full scope of work or estimated cost is not provided for the proposed Secondary POI. Only network impacts are provided for the Secondary POI in this report.

5 Cost Summary

The AG1-511 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$3,735,000
Total System Network Upgrade Costs	$0
Total Costs	$3,735,000

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.

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6 Transmission Owner Scope of Work

The interconnection of the project at the Primary POI will be accomplished by constructing a new direct connection to the Kittatinny 230 kV substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection line tap.

Attachment 1 shows a one-line diagram of the proposed primary direct connection facilities for the AG1-511 generation project to connect to the FirstEnergy ("FE") transmission system. 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 transmission system.

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

Description	Total Cost
Install disconnect switch, dead-end structure, and associated facilities for generator lead line exit at interconnection substation.	$375,000
Expand bus at Kittatinny 230 kV and install (2) new breakers and associated equipment.	$3,360,000
Total Physical Interconnection Costs	$3,735,000

7 Schedule

Based on the scope of work for the Attachment Facilities and the Direct and/or Non-Direct Connection facilities, it is expected to take a minimum of 24 months after the signing of an Interconnection Construction Service Agreement 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 direct connection and network upgrades, and that all transmission 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.

8 Transmission Owner Analysis

8.1 Power Flow Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AG1-511 project did not contribute to any overloads on the FE transmission <100 kV system.

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9 Interconnection Customer Requirements

9.1 System Protection

The IC must design it's Customer Facilities in accordance with all applicable standards, including the standards in FE's "Requirements for Transmission Connected Facilities" document located at: http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx. Preliminary Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

All new generator only and new generator plus load facilities must be isolated from the FE transmission System by a Power Transformer. Section 14.2.6 of FE's "Requirements for Transmission Connected Facilities" document specifies the winding configurations of the transformer connecting to a non-effectively grounded portion of the FE Transmission system shall be determined by FE on a case-by-case basis.

9.2 Compliance Issues and Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with FE's "Requirements for Transmission Connected Facilities" document located at: http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated 230 kV circuit breaker to protect the AG1-511 generator lead line. A single circuit breaker must be used to protect this line; if the project has several GSU transformers, the individual GSU transformer breakers cannot be used to protect this line.

2. The purchase and installation of the minimum required FE generation interconnection relaying and control facilities. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.

3. The purchase and installation of supervisory control and data acquisition ("SCADA") equipment to provide information in a compatible format to the FE Transmission System Control Center.

4. Compliance with the FE and PJM generator power factor and voltage control requirements.

5. The execution of a back-up service agreement to serve the customer load supplied from the AG1-511 generation project metering point when the units are out-of-service. This assumes the intent of the IC is to net the generation with the load.

The IC will also be required to meet all PJM, ReliabilityFirst, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and ReliabilityFirst audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the FE system.

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9.3 Power Factor Requirements

The IC shall design its non-synchronous Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the FE transmission system.

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/meter2) - (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/

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11 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AG1-511 was evaluated as a 50.0 MW (Capacity 30.0 MW) injection at the Kittatinny 230 kV substation in the JCPL area. Project AG1-511 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-511 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	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
16775738 5	206236	28GILBERT	230.0	JCP&L	208091	SFLD	230.0	PPL	1	PL:20:P12:000096	operation	801.0	104.8	105.22	DC	8.76

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
			TOTAL COST	$0

11.6 Flow Gate Details - Primary POI

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

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11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
PL:20:P12:000096	CONTINGENCY 'PL:20:P12:000096' /* HOSE-STCI 500KV LINE DISCONNECT BRANCH FROM BUS 200008 TO BUS 200043 CKT 1 /* HOSENSAK-STEELCTY 500 END

12 Short Circuit Analysis - Primary POI

The following Breakers are overdutied:

None

12.1 System Reinforcements - Short Circuit

None

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AG1-511 was evaluated as a 50.0 MW (Capacity 30.0 MW) injection tapping the Kittatinny to Andover 34.5 kV line in the JCPL area. Project AG1-511 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-511 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

13.1 Generation Deliverability

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

None

13.2 Multiple Facility Contingency

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

None

13.3 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)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
174500228	206236	28GILBERT	230.0	JCP&L	208091	SFLD	230.0	PPL	1	PL:20:P42:000143	breaker	801.0	105.67	106.08	DC	8.6

13.4 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	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
167757385	206236	28GILBERT	230.0	JCP&L	208091	SFLD	230.0	PPL	1	PL:20:P12:000096	operation	801.0	104.8	105.21	DC	8.55

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13.5 Flow Gate Details - Secondary POI

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".

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13.5.1 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
174500228	206236	28GILBERT	JCP&L	208091	SFLD	PPL	1	PL:20:P42:000143	breaker	801.0	105.67	106.08	DC	8.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200045	BETH CT2	4.3981	50/50	4.3981
200046	BETH CT3	4.3981	50/50	4.3981
200047	BETH ST4	6.7529	50/50	6.7529
200049	BETH CT6	4.3981	50/50	4.3981
200050	BETH CT7	4.3981	50/50	4.3981
206330	28GILCT9	9.4497	50/50	9.4497
206340	28GIL 4&5	4.9043	50/50	4.9043
206341	28GIL 8	5.5952	50/50	5.5952
206342	28GIL 6&7	5.0044	50/50	5.0044
206345	28N27_Y2-018	0.3307	Adder	0.39
206617	28EXXON	1.2020	Adder	1.41
206638	28PEAPACK	0.5885	Adder	0.69
206671	28HOFFMAN	0.8526	Adder	1.0
206679	28M&M S721	1.5809	Adder	1.86
206719	28W4-073	0.2711	50/50	0.2711
206741	28FR_U2-059	0.0338	50/50	0.0338
206742	**28SUX_V3-011 (Deactivation : 26/04/2020)**	**0.2604**	**Adder**	**0.31**
206743	28GAR_V4-001	0.0301	50/50	0.0301
206744	28PIT_W1-132	0.1709	Adder	0.2
206747	28DSM_X3-029	1.9014	Adder	2.24
206749	28WA_W3-044	0.2693	50/50	0.2693
206751	28HRM_W1-127	0.0482	50/50	0.0482
206757	28RH_W2-091	0.1424	50/50	0.1424
206759	28HOL_W4-097	0.0475	50/50	0.0475
207402	28AA2-082 E	4.8706	50/50	4.8706
207408	W3-077 C	0.2254	50/50	0.2254
207412	28AA2-060 E	0.7801	Adder	0.92
207413	28AA2-061 E	1.0402	Adder	1.22
207437	AD2-070 C	0.1502	50/50	0.1502
207438	AD2-070 E	1.1696	50/50	1.1696
207440	AE1-081 E O1	0.1832	Adder	0.22
207442	**AE1-156 C (Suspended)**	**0.3503**	**Adder**	**0.41**
207443	**AE1-156 E (Suspended)**	**0.2990**	**Adder**	**0.35**
208905	LMBE CT1	7.3009	50/50	7.3009
208906	LMBE CT2	7.3009	50/50	7.3009
208908	LMBE ST1	8.7538	50/50	8.7538
208909	MACR G3	31.0290	50/50	31.0290
208910	MACR G4	31.0290	50/50	31.0290
208980	BEPO IPP	6.7754	50/50	6.7754
209028	**N31 IPP (Deactivation : 31/08/2019)**	**0.9102**	**Adder**	**1.07**

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
290131	U2-059E	0.3324	50/50	0.3324
292683	V3-070 E	0.3926	Adder	0.46
902062	W1-127E	0.5093	50/50	0.5093
902292	W2-016E	1.3417	Adder	1.58
902742	W2-061 E	0.1589	Adder	0.19
902932	W2-080 E	0.1360	Adder	0.16
903222	W3-003 E	0.8543	Adder	1.01
903482	W3-029 E	0.8971	Adder	1.06
903632	W3-044 E OP1	0.2695	50/50	0.2695
903672	W3-106 E	0.8091	Adder	0.95
903682	W3-110 E	0.6115	Adder	0.72
903962	W3-077 E	2.3309	50/50	2.3309
904002	V4-001 E	0.5024	50/50	0.5024
904682	V4-069 E	0.1589	Adder	0.19
904692	V4-070 E	0.1589	Adder	0.19
905442	W4-046 E	1.1395	Adder	1.34
905542	W4-064 E	0.2400	Adder	0.28
905602	W4-073 E	2.8194	50/50	2.8194
905762	W4-097 E	0.4653	50/50	0.4653
907012	X1-012 E	0.8020	Adder	0.94
907394	X1-095 E OP1	0.2219	Adder	0.26
909252	X2-075 E	0.3349	Adder	0.39
921662	**AA2-017 C (Suspended)**	**1.4891**	**Adder**	**1.75**
921663	**AA2-017 E (Suspended)**	**10.0013**	**Adder**	**11.77**
924141	AB2-058 C	0.1424	50/50	0.1424
924142	AB2-058 E	1.6040	50/50	1.6040
933322	**AC2-144 E (Suspended)**	**0.0412**	**Adder**	**0.05**
933332	**AC2-145 E (Suspended)**	**0.0228**	**Adder**	**0.03**
933582	AC2-175 E	0.2187	Adder	0.26
935071	**AD1-143 C1 (Suspended)**	**0.7998**	**Adder**	**0.94**
935072	**AD1-143 E1 (Suspended)**	**4.7932**	**Adder**	**5.64**
935081	**AD1-143 C2 (Suspended)**	**0.0280**	**Adder**	**0.03**
935082	**AD1-143 E2 (Suspended)**	**0.6712**	**Adder**	**0.79**
935091	**AD1-143 C3 (Suspended)**	**0.7998**	**Adder**	**0.94**
935092	**AD1-143 E3 (Suspended)**	**4.7932**	**Adder**	**5.64**
935101	**AD1-143 C4 (Suspended)**	**0.0280**	**Adder**	**0.03**
935102	**AD1-143 E4 (Suspended)**	**0.6712**	**Adder**	**0.79**
937512	**AD2-210 E (Suspended)**	**0.1953**	**Adder**	**0.23**
937522	AD2-213 E O1	1.8188	Adder	2.14
937563	AD2-077 BAT	26.0000	Merchant Transmission	26.0000
938412	AE1-060 E	2.6401	Adder	3.11
940012	AE1-243 E	5.4206	50/50	5.4206
940441	AE2-028 C	0.0958	50/50	0.0958
940442	AE2-028 E	0.0838	50/50	0.0838
941751	AE2-175 C	6.1759	Adder	7.27
941752	AE2-175 E	4.1173	Adder	4.84
942251	AE2-237 C	2.8886	Adder	3.4
942252	AE2-237 E	11.5543	Adder	13.59
943482	AF1-019 E	2.5646	Adder	3.02
943551	AF1-026	0.5412	50/50	0.5412
944401	AF1-105 O1	5.0244	50/50	5.0244
944431	AF1-108 O1	1.7087	Adder	2.01

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944681	AF1-133 C	2.0463	Adder	2.41
944682	AF1-133 E	1.3642	Adder	1.6
945301	AF1-195	0.0622	50/50	0.0622
945311	AF1-196 1	0.2487	50/50	0.2487
945321	AF1-196 2	0.6529	50/50	0.6529
945921	AF1-257	0.0547	50/50	0.0547
946561	AF1-320 C O1	7.1786	Adder	8.45
946562	AF1-320 E O1	4.7857	Adder	5.63
946602	**AF1-324 E (Withdrawn : 12/03/2020)**	**2.1768**	**Adder**	**2.56**
946612	AF1-325 E	2.6683	Adder	3.14
946622	**AF1-326 E (Withdrawn : 12/03/2020)**	**3.2655**	**Adder**	**3.84**
946632	**AF1-327 E (Withdrawn : 12/03/2020)**	**3.1875**	**Adder**	**3.75**
946642	AF1-328 E O1	3.1431	Adder	3.7
957363	AF2-030 BAT	2.8168	Merchant Transmission	2.8168
958441	AF2-138 C	1.1976	Adder	1.41
958442	AF2-138 E	1.6539	Adder	1.95
958451	AF2-139 C	1.0064	50/50	1.0064
958452	AF2-139 E	1.3872	50/50	1.3872
959011	AF2-192 C	0.2905	Adder	0.34
959012	AF2-192 E	0.3076	Adder	0.36
959361	AF2-227 C	6.9528	Adder	8.18
959362	AF2-227 E	4.6352	Adder	5.45
959813	AF2-272 BAT	0.1893	Merchant Transmission	0.1893
959863	AF2-277 BAT	0.4089	50/50	0.4089
959903	AF2-281 BAT	0.2077	Merchant Transmission	0.2077
960631	AF2-354 C	1.0377	50/50	1.0377
960632	AF2-354 E	1.4331	50/50	1.4331
961373	AF2-428 BAT	0.2189	Merchant Transmission	0.2189
961383	AF2-429 BAT	0.2004	Merchant Transmission	0.2004
961393	AF2-430 BAT	0.2078	Merchant Transmission	0.2078
961403	AF2-431 BAT	0.1664	Merchant Transmission	0.1664
961511	AF2-442 NFTI	13.3333	Merchant Transmission	13.3333
961521	AF2-443 NFTI	13.3392	Merchant Transmission	13.3392
962171	AG1-062 C	0.7496	Adder	1.66
962172	AG1-062 E	0.4998	Adder	1.11
962662	AG1-115 BAT	6.8900	Merchant Transmission	6.8900
963082	AG1-157 E	0.3239	Adder	0.72
963421	AG1-191 C	0.5974	Adder	1.33
963422	AG1-191 E	0.8250	Adder	1.83
964071	AG1-262 C	9.2552	50/50	9.2552
964072	AG1-262 E	13.8828	50/50	13.8828
964091	AG1-267 C	0.7733	Adder	1.72
964092	AG1-267 E	1.1599	Adder	2.57
964221	AG1-283 C O2	1.1640	Adder	2.58
964222	AG1-283 E O2	0.7760	Adder	1.72
964851	AG1-348 C	0.7720	Adder	1.71
964852	AG1-348 E	1.0653	Adder	2.36
966111	AG1-480 C	1.3754	Adder	3.05
966112	AG1-480 E	0.0590	Adder	0.13
966181	AG1-487	7.8810	50/50	7.8810

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Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966261	AG1-495 C	0.7616	Adder	1.69
966262	AG1-495 E	1.0518	Adder	2.33
966271	AG1-496 C	0.1255	Adder	0.28
966272	AG1-496 E	0.1733	Adder	0.38
966291	AG1-498 C	0.3554	Adder	0.79
966292	AG1-498 E	0.4898	Adder	1.09
966411	AG1-510 C O2	0.9531	Adder	2.12
966412	AG1-510 E O2	0.6354	Adder	1.41
966421	AG1-511 C O2	2.3239	Adder	5.16
966422	AG1-511 E O2	1.5493	Adder	3.44
G-007A	G-007A	12.3567	Confirmed LTF	12.3567
VFT	VFT	44.1760	Confirmed LTF	44.1760
CALDERWOOD	CALDERWOOD	0.6178	Confirmed LTF	0.6178
PRAIRIE	PRAIRIE	3.1151	Confirmed LTF	3.1151
CHEOAH	CHEOAH	0.6231	Confirmed LTF	0.6231
CBM-N	CBM-N	6.6240	Confirmed LTF	6.6240
COTTONWOOD	COTTONWOOD	2.5767	Confirmed LTF	2.5767
HAMLET	HAMLET	0.7513	Confirmed LTF	0.7513
GIBSON	GIBSON	0.6530	Confirmed LTF	0.6530
BLUEG	BLUEG	2.0780	Confirmed LTF	2.0780
TRIMBLE	TRIMBLE	0.6656	Confirmed LTF	0.6656
CATAWBA	CATAWBA	0.4487	Confirmed LTF	0.4487

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13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
PL:20:P42:000143	CONTINGENCY 'PL:20:P42:000143' / 860 OPEN BRANCH FROM BUS 200001 TO BUS 200008 CKT 1 / 200001 ALBURTIS 500 200008 HOSENSACK 500 1 OPEN BRANCH FROM BUS 200008 TO BUS 200043 CKT 1 / 200008 HOSENSACK 500 200043 STEELCTY 500 1 END
PL:20:P12:000096	CONTINGENCY 'PL:20:P12:000096' / 8 OPEN BRANCH FROM BUS 200008 TO BUS 200043 CKT 1 / 200008 HOSENSACK 500 200043 STEELCTY 500 1 END

14 Affected Systems

14.1 NYISO

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

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