



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-355
SCALP LEVEL-HOOVERSVILLE 115 KV
32.4 MW Capacity / 54 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 (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 generating facility located in Somerset County, Pennsylvania. The installed facilities will have a total capability of 54 MW with 32.4 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 31, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-355
Project Name	SCALP LEVEL-HOOVERSVILLE 115 KV
State	Pennsylvania
County	Somerset
Transmission Owner	MAIT - PENELEC
MFO	54
MWE	54
MWC	32.4
Fuel	Solar
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

The interconnection of the project will be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the Hooversville – Rachel Hill 115 kV line into the new station. The new substation will be located approximately 1.6 miles from Hooversville Substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection switching station and the associated facilities. The IC will also be responsible for the rough grade of the property and an access road to the proposed three-breaker ring bus site. The project will also require upgrades at Hooversville Substation and Rachel Hill Substation.

Attachment 1 shows a one-line diagram of the proposed primary interconnection facilities for the AG1-355 generation project to connect to the FirstEnergy (“FE”) Transmission System. The IC will be responsible for constructing the facilities on its side of the POI, including the Attachment Facilities which connect the generator to the FE Transmission System’s interconnection facilities.

5 Cost Summary

The AG1-355 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$9,680,000
Total System Network Upgrade Costs	\$340,628,820 ¹
Total Costs	\$350,308,820

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 Summer Peak Load Flow 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

The interconnection of the project will be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the Hooversville – Rachel Hill 115 kV line into the new station. The new substation will be located approximately 1.6 miles from Hooversville Substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection switching station and the associated facilities. The IC will also be responsible for the rough grade of the property and an access road to the proposed three-breaker ring bus site. The project will also require upgrades at Hooversville Substation and Rachel Hill Substation.

Attachment 1 shows a one-line diagram of the proposed primary interconnection facilities for the AG1-355 generation project to connect to the FirstEnergy (“FE”) Transmission System. The IC will be responsible for constructing the facilities on its side of the POI, including the Attachment Facilities which connect the generator to the FE Transmission System’s interconnection facilities.

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

Description	Total Cost
Construct a 115 kV three breaker ring bus interconnection substation.	\$6,070,000
Loop the Hooversville – Rachel Hill 115 kV line into the new interconnection substation.	\$790,000
Install OPGW between Hooversville and the new interconnection substation.	\$1,360,000
Upgrade relaying at Hooversville Substation.	\$730,000
Upgrade relaying at Rachel Hill Substation.	\$730,000
Total Physical Interconnection Costs	\$9,680,000

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 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 interconnection substation. 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 interconnection 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 report¹.

8 Transmission Owner Analysis

8.1 Power Flow Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AG1-355 project did not contribute to any overloads on the FE transmission <100 kV system.

9 Interconnection Customer Requirements

9.1 System Protection

The IC must design its 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.

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 115 kV circuit breaker to protect the AG1-355 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 AG1-355 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 Transmission System.

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 FE revenue metering requirements for generation interconnection customers which can be found in FE's "Requirements for Transmission Connected Facilities" document located at: <http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>.

11 Summer Peak - Load Flow Analysis

The Queue Project AG1-355 was evaluated as a 54.0 MW (Capacity 32.4 MW) injection tapping the Hooversville to Scalp Level 115 kV line in the PENELEC area. Project AG1-355 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-355 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)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
166002353	200766	26FLORENCE	115.0	PENELEC	200740	26BLRSVLE	115.0	PENELEC	1	PN-P2-3-PN-230-0183-208	breaker	282.0	99.29	101.64	DC	6.64
165048110	200810	26KEYSTONE	230.0	PENELEC	999332	KEYSTONE	1.0	PENELEC	4	ATSI-P7-1-CEI-345-012	tower	634.0	99.98	101.05	DC	6.71
165048111	200810	26KEYSTONE	230.0	PENELEC	999332	KEYSTONE	1.0	PENELEC	4	AP-P7-1-WPP-138-83	tower	634.0	99.7	100.81	DC	6.94
165048125	999332	KEYSTONE	1.0	PENELEC	200011	KEYSTONE	500.0	PENELEC	4	ATSI-P7-1-CEI-345-012	tower	634.0	99.49	100.56	DC	6.71
165048126	999332	KEYSTONE	1.0	PENELEC	200011	KEYSTONE	500.0	PENELEC	4	AP-P7-1-WPP-138-83	tower	634.0	99.21	100.32	DC	6.94

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)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
166002272	200501	26BDFORDN	115.0	PENELEC	200523	26SNAKE SP	115.0	PENELEC	1	PN-P2-3-PN-115-11F	breaker	152.0	112.03	112.98	DC	3.19
166602451	200505	26CLYSBURG	115.0	PENELEC	200525	26SUMMIT	115.0	PENELEC	1	PN-P7-1-PN-230-001	tower	252.0	110.51	115.44	DC	12.41
166002268	200523	26SNAKE SP	115.0	PENELEC	200521	26SAXTON	115.0	PENELEC	1	PN-P2-3-PN-115-11F	breaker	160.0	112.92	113.82	DC	3.19
166602444	200734	26SCALP L	115.0	PENELEC	200749	26RACHEL H	115.0	PENELEC	1	PN-P7-1-PN-230-001	tower	245.0	103.22	115.39	DC	29.84

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
1660022 96	20074 1	26SEWAR D	115. 0	PENELE C	20076 6	26FLORENC E	115. 0	PENELE C	1	PN-P2-3-PN-230-0183-208	breaker	263. 0	106.54	109.06	DC	6.64
1660022 97	20074 1	26SEWAR D	115. 0	PENELE C	20076 6	26FLORENC E	115. 0	PENELE C	1	PN-P2-3-PN-230-0183-209	breaker	263. 0	104.74	107.03	DC	6.03
1660022 98	20074 1	26SEWAR D	115. 0	PENELE C	20076 6	26FLORENC E	115. 0	PENELE C	1	PN-P2-3-PN-230-0347-A	breaker	263. 0	104.48	106.91	DC	6.39
1660023 32	20074 4	26SOMERS T	115. 0	PENELE C	96588 0	AG1-457 TAP	115. 0	PENELE C	1	PN-P2-3-PN-230-0183-208	breaker	179. 0	101.51	105.5	DC	7.13
1660023 33	20074 4	26SOMERS T	115. 0	PENELE C	96588 0	AG1-457 TAP	115. 0	PENELE C	1	PN-P2-3-PN-115-11A	breaker	179. 0	101.39	104.63	DC	5.79
1666024 71	20074 4	26SOMERS T	115. 0	PENELE C	96588 0	AG1-457 TAP	115. 0	PENELE C	1	PN-P7-1-PN-230-001	tower	179. 0	108.5	114.56	DC	10.85
1666024 27	20074 9	26RACHEL H	115. 0	PENELE C	20075 1	26HILLCLAY	115. 0	PENELE C	1	PN-P7-1-PN-230-001	tower	217. 0	103.68	117.43	DC	29.84
1666024 50	20075 1	26HILLCLAY	115. 0	PENELE C	20075 2	26HILLTOP	115. 0	PENELE C	1	PN-P7-1-PN-230-001	tower	282. 0	106.22	115.95	DC	27.43
1645607 81	20076 3	26BLAIRSV L	138. 0	PENELE C	23525 3	01SOCIAL	138. 0	AP	1	PN-P2-3-PN-201A-0201A-20	breaker	287. 0	118.78	120.77	DC	5.71
1675261 25	20076 7	26HOMER CT	230. 0	PENELE C	20079 5	26SHELOCT A	230. 0	PENELE C	1	ATSI-P2-3-CEI-345-004C	breaker	923. 0	195.86	197.31	DC	13.17
1675261 26	20076 7	26HOMER CT	230. 0	PENELE C	20079 5	26SHELOCT A	230. 0	PENELE C	1	ATSI-P2-3-CEI-345-004D	breaker	923. 0	194.11	195.56	DC	13.18
1676897 74	20076 7	26HOMER CT	230. 0	PENELE C	20079 5	26SHELOCT A	230. 0	PENELE C	1	PN-P1-2-PN-230-025	single	923. 0	126.73	127.84	DC	10.11
1676897 75	20076 7	26HOMER CT	230. 0	PENELE C	20079 5	26SHELOCT A	230. 0	PENELE C	1	PN-P1-3-PN-500-003	single	923. 0	126.73	127.84	DC	10.11
1675261 23	20079 5	26SHELOCTA	230. 0	PENELE C	20081 0	26KEYSTON E	230. 0	PENELE C	1	ATSI-P2-3-CEI-345-004D	breaker	923. 0	193.01	194.61	DC	14.61
1675261 24	20079 5	26SHELOCTA	230. 0	PENELE C	20081 0	26KEYSTON E	230. 0	PENELE C	1	ATSI-P2-3-CEI-345-004C	breaker	923. 0	191.89	193.48	DC	14.6
1676897 61	20079 5	26SHELOCTA	230. 0	PENELE C	20081 0	26KEYSTON E	230. 0	PENELE C	1	PN-P1-2-PN-230-025	single	923. 0	120.6	121.81	DC	11.12
1676897 62	20079 5	26SHELOCTA	230. 0	PENELE C	20081 0	26KEYSTON E	230. 0	PENELE C	1	PN-P1-3-PN-500-003	single	923. 0	120.6	121.81	DC	11.12
1650476 24	20081 0	26KEYSTON E	230. 0	PENELE C	99933 2	KEYSTONE	1.0	PENELE C	4	APS-P2-2-WP-500-DRT19	bus	634. 0	143.62	145.21	DC	9.94
1650476 25	20081 0	26KEYSTON E	230. 0	PENELE C	99933 2	KEYSTONE	1.0	PENELE C	4	PN-P2-2-PN-500-001T	bus	634. 0	125.14	126.61	DC	9.21

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
165048109	200810	26KEYSTONE	230.0	PENELEC	999332	KEYSTONE	1.0	PENELEC	4	AP-P7-1-WPP-138-53A	tower	634.0	101.32	102.4	DC	6.8
167401175	235449	01CARLOS	138.0	AP	237310	01DANSMTN	138.0	AP	1	FE-P2-3-MP-138-161	breaker	182.0	121.02	121.97	DC	3.86
167401176	235449	01CARLOS	138.0	AP	237310	01DANSMTN	138.0	AP	1	FE-P2-3-MP-138-160	breaker	182.0	121.01	121.96	DC	3.86
167401206	235469	01GARRET	138.0	AP	235449	01CARLOS	138.0	AP	1	FE-P2-3-MP-138-150	breaker	206.0	115.67	116.54	DC	3.99
167401207	235469	01GARRET	138.0	AP	235449	01CARLOS	138.0	AP	1	FE-P2-3-MP-138-160	breaker	206.0	114.64	115.53	DC	4.05
165617246	237310	01DANSMTN	138.0	AP	235504	01RIDGLY	138.0	AP	1	FE-P2-2-MP-138-101_NO N-A	bus	182.0	126.77	127.73	DC	3.85
167401097	237310	01DANSMTN	138.0	AP	235504	01RIDGLY	138.0	AP	1	FE-P2-3-MP-138-150	breaker	182.0	152.97	153.91	DC	3.79
167401098	237310	01DANSMTN	138.0	AP	235504	01RIDGLY	138.0	AP	1	FE-P2-3-MP-138-160	breaker	182.0	152.68	153.64	DC	3.85
166602443	964910	AG1-355 TAP	115.0	PENELEC	200734	26SCALP L	115.0	PENELEC	1	PN-P7-1-PN-230-001	tower	245.0	103.72	115.9	DC	29.84
166602255	965880	AG1-457 TAP	115.0	PENELEC	200746	26ROCKWOD	115.0	PENELEC	1	PN-P2-3-PN-230-0183-208	breaker	179.0	101.46	105.44	DC	7.13
166602256	965880	AG1-457 TAP	115.0	PENELEC	200746	26ROCKWOD	115.0	PENELEC	1	PN-P2-3-PN-115-11A	breaker	179.0	101.34	104.57	DC	5.79
166602438	965880	AG1-457 TAP	115.0	PENELEC	200746	26ROCKWOD	115.0	PENELEC	1	PN-P7-1-PN-230-001	tower	179.0	108.5	114.56	DC	10.85
165047629	999332	KEYSTONE	1.0	PENELEC	200011	KEYSTONE	500.0	PENELEC	4	APS-P2-2-WP-500-DRT19	bus	634.0	143.15	144.73	DC	9.94
165047630	999332	KEYSTONE	1.0	PENELEC	200011	KEYSTONE	500.0	PENELEC	4	PN-P2-2-PN-500-001T	bus	634.0	124.67	126.14	DC	9.21
165048124	999332	KEYSTONE	1.0	PENELEC	200011	KEYSTONE	500.0	PENELEC	4	AP-P7-1-WPP-138-53A	tower	634.0	100.83	101.91	DC	6.8

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	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
166234764	200505	26CLYSBURG	115.0	PENEL EC	200525	26SUMMIT	115.0	PENEL EC	1	PN-P1-2-PN-115-082	operation	252.0	109.2	111.39	DC	5.51
166234601	200742	26TOWER51	115.0	PENEL EC	200741	26SEWARD	115.0	PENEL EC	1	AP-P1-3-PE-115-010	operation	185.0	141.58	151.19	DC	17.78
166234605	200742	26TOWER51	115.0	PENEL EC	200741	26SEWARD	115.0	PENEL EC	1	Base Case	operation	147.0	121.13	132.02	DC	16.02
166234558	200743	26HOOVERS V	115.0	PENEL EC	200742	26TOWER51	115.0	PENEL EC	1	AP-P1-3-PE-115-010	operation	172.0	167.01	177.47	DC	18.0
166234562	200743	26HOOVERS V	115.0	PENEL EC	200742	26TOWER51	115.0	PENEL EC	1	Base Case	operation	137.0	146.35	158.18	DC	16.21
166234781	200744	26SOMERST	115.0	PENEL EC	965880	AG1-457 TAP	115.0	PENEL EC	1	Base Case	operation	148.0	105.88	107.49	DC	5.27
166234550	200747	26PENN-MAR	115.0	PENEL EC	200762	26GARRETT	115.0	PENEL EC	1	Base Case	operation	148.0	162.35	163.95	DC	5.27
164561012	200762	26GARRETT	115.0	PENEL EC	235470	01GARRET	115.0	AP	1	Base Case	operation	169.0	148.12	149.53	DC	5.26
164561101	200763	26BLAIRSVL	138.0	PENEL EC	235253	01SOCIAL	138.0	AP	1	PN-P1-2-PN-230-002	operation	287.0	106.75	108.69	DC	5.57
164561102	200763	26BLAIRSVL	138.0	PENEL EC	235253	01SOCIAL	138.0	AP	1	Base Case	operation	225.0	111.76	112.61	DC	4.24
167689771	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-3-PN-500-003	operation	923.0	175.74	177.61	DC	16.85
167689772	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-230-025	operation	923.0	175.74	177.61	DC	16.85
167689773	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	operation	809.0	158.06	159.58	DC	12.01
167689951	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P1-2-PN-230-002	operation	1147.0	111.93	113.39	DC	16.54
167689758	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-230-025	operation	923.0	176.11	178.14	DC	18.53
167689759	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-3-PN-500-003	operation	923.0	176.11	178.14	DC	18.53
167689760	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operation	809.0	154.68	156.35	DC	13.4
167689892	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PENEL EC	3	PN-P1-2-PN-230-002	operation	1066.0	120.44	122.01	DC	16.54
167952441	235469	01GARRET	138.0	AP	934440	AD1-068 TAP	138.0	AP	1	Base Case	operation	164.0	106.81	107.77	DC	3.48
167952323	235470	01GARRET	115.0	AP	235469	01GARRET	138.0	AP	1	Base Case	operation	169.0	148.12	149.53	DC	5.26
167952500	237310	01DANSMT N	138.0	AP	235504	01RIDGLY	138.0	AP	1	FE-P1-2-MP-138-160_N ON	operation	182.0	125.99	126.95	DC	3.87
169704993	934440	AD1-068 TAP	138.0	AP	235120	01ALBRIG	138.0	AP	1	Base Case	operation	164.0	143.5	144.46	DC	3.48

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
166234731	965880	AG1-457 TAP	115.0	PENEL EC	200746	26ROCKWOOD	115.0	PENEL EC	1	Base Case	operation	148.0	105.81	107.42	DC	5.27

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
166602450	11	26HILLCLAY 115.0 kV - 26HILLTOP 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0041A (1505) : Reconductor 4.5 miles of line Project Type : FAC Cost : \$13,850,000 Time Estimate : 36.0 Months PN-AF2-F-0041B (1506) : Replace line drops at Hilltop. Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AF2-F-0041C (1507) : Reconductor 0.23 miles of line. Project Type : FAC Cost : \$775,000 Time Estimate : 24.0 Months	\$14,825,000
166602427	10	26RACHEL H 115.0 kV - 26HILLCLAY 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0040A (1383) : Replace line drops at Rachel Hill Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AF2-F-0040B (1384) : Replace bus conductor at Rachel Hill. Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0007C (1385) : Adjust CT ratios at Rachel Hill Substation Project Type : FAC Cost : \$900,000 Time Estimate : 12.0 Months PN-AG1-F-0007D (1386) : Reconductor approximately 3.3 miles of line. Project Type : FAC Cost : \$8,100,000 Time Estimate : 32.0 Months	\$9,400,000
167401097,165 617246,167401 098	17	01DANSMTN 138.0 kV - 01RIDGLY 138.0 kV Ckt 1	<u>APS</u> n4655 (991) : Reconfigure Albright 138 kV SS to breaker-and-a-half layout Project Type : CON Cost : \$20,701,800 Time Estimate : 30.0 Months	\$20,701,800
167401206,167 401207	16	01GARRET 138.0 kV - 01CARLOS 138.0 kV Ckt 1		
167401176,167 401175	15	01CARLOS 138.0 kV - 01DANSMTN 138.0 kV Ckt 1		

ID	Idx	Facility	Upgrade Description	Cost
166002268	6	26SNAKE SP 115.0 kV - 26SAXTON 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0024 (1500) : Reconductor 18.07 miles of line. Replace line drops at Saxton and Snake Spring. Project Type : FAC Cost : \$55,275,000 Time Estimate : 42.0 Months	\$55,275,000
166002353	1	26FLORENCE 115.0 kV - 26BLRSVL E 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0028A (1490) : Reconductor 9.5 miles of line. Replace line drops at Blairsville East. Project Type : FAC Cost : \$29,050,000 Time Estimate : 36.0 Months	\$29,050,000
166602451	5	26CLYSBURG 115.0 kV - 26SUMMIT 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0006A (1377) : Rebuild approximately 11.85 miles of line. Project Type : FAC Cost : \$29,000,000 Time Estimate : 50.0 Months PN-AG1-F-0006B (1378) : Replace bus conductor at Claysburg substation. Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0006C (1379) : Adjust relay settings at Claysburg Substation. Project Type : FAC Cost : \$800,000 Time Estimate : 12.0 Months PN-AG1-F-0006D (1380) : Reconductor approximately 0.25 miles of transmission line. Replace line drops at Claysburg Substation. Project Type : FAC Cost : \$800,000 Time Estimate : 12.0 Months PN-AG1-F-0006E (1381) : Replace circuit breaker at Summit Substation. Project Type : FAC Cost : \$900,000 Time Estimate : 12.0 Months	\$31,700,000
166002272	4	26BDFORD N 115.0 kV - 26SNAKE SP 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0008 (1495) : Reconductor 7.1 miles of line. Project Type : FAC Cost : \$17,400,000 Time Estimate : 30.0 Months	\$17,400,000

ID	Idx	Facility	Upgrade Description	Cost
166602444	7	26SCALP L. 115.0 kV - 26RACHEL H 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0027B (1460) : Adjust impedance relays at Lewistown Project Type : FAC Cost : \$850,000 Time Estimate : 12.0 Months PN-AG1-F-0027A (1509) : Reconductor 2.70 miles of line. Project Type : FAC Cost : \$8,350,000 Time Estimate : 24.0 Months	\$9,200,000
166002332,166 002333,166602 471	9	26SOMERST 115.0 kV - AG1- 457 TAP 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0008 (1388) : Reconductor approximately 8.1 miles of line. Replace line drops at Somerset Substation. Project Type : FAC Cost : \$20,000,000 Time Estimate : 42.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase, though the worst case contingency driving the reinforcements listed above is valid.	\$20,000,000

ID	Idx	Facility	Upgrade Description	Cost
164560781	12	26BLAIRSVL 138.0 kV - 01SOCIAL 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0009A (1202) : Replace 750 CU bus conductor at Social Hall substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0009B (1203) : Replace relaying (CT, MT, RT) at Social Hall substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AG1-F-0009C (1204) : Reconductor 372 ft of 636 ACSR from Social Hall substation to structure 42 (1 span). Project Type : FAC Cost : \$325,631 Time Estimate : 12.0 Months WP-AG1-F-0009D (1205) : Replace 954 ACSR 45/7 SCCIR (bus, bus taps, bus side disconnect leads, line side disconnect leads) at Social Hall substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months PN-AG1-F-0009A (1389) : Reconductor 4.83 miles of line. Replace line relaying at Blairsville East. Project Type : FAC Cost : \$12,560,000 Time Estimate : 34.0 Months PN-AG1-F-0009B (1390) : Replace line trap at Blairsville East Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months	\$13,802,020
165048109,165 048111,165048 110,165047624, 165047625	2	26KEYSTONE 230.0 kV - KEYSTONE 1.0 kV Ckt 4	<u>PENELEC</u> PN-AF2-F-0005 (1358) : Construct 500 kV yard consisting of three-500 kV breakers configured in a breaker-and-a-half layout (initially a ring bus) Tap the Keystone - Conemaugh 500 kV line and loop into the new Homer City 500 kV yard Install one 500/345 kV transformer Install a new 345 kV breaker-and-a-half string using three new breakers Project Type : CON Cost : \$85,600,000 Time Estimate : 48.0 Months	\$85,600,000
167689761,167 526124,167689 762,167526123	14	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
167526125,167 526126,167689 774,167689775	13	26HOMER CT 230.0 kV - 26SHELOCTA 230.0 kV Ckt 1		
165048124,165 048125,165048 126,165047629, 165047630	3	KEYSTONE 1.0 kV - KEYSTONE 500.0 kV Ckt 4		

ID	Idx	Facility	Upgrade Description	Cost
166602438,166002256,166002255	19	AG1-457 TAP 115.0 kV - 26ROCKWOOD 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0033A (1489) : Rebuild 3 miles of line. Project Type : FAC Cost : \$7,400,000 Time Estimate : 32.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase, though the worst case contingency driving the reinforcements listed above is valid.	\$7,400,000
166602443	18	AG1-355 TAP 115.0 kV - 26SCALP L. 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0034 (1499) : Reconductor 5.4 miles of line. Project Type : FAC Cost : \$13,300,000 Time Estimate : 37.0 Months	\$13,300,000
166002297,166002296,166002298	8	26SEWARD 115.0 kV - 26FLORENCE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0029A (1487) : Replace bus conductor at Seward. Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AF2-F-0029B (1488) : Reconductor 4.15 miles of line. Project Type : FAC Cost : \$12,775,000 Time Estimate : 30.0 Months	\$12,975,000
			TOTAL COST	\$340,628,820

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".

11.6.1 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
166002353	200766	26FLORENCE	PENELEC	200740	26BLRSVL E	PENELEC	1	PN-P2-3-PN-230-0183-208	breaker	282.0	99.29	101.64	DC	6.64

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	0.8909	50/50	0.8909
200794	26CONEMAGH	0.2735	50/50	0.2735
200834	26SW_E13_K22	0.0155	50/50	0.0155
200835	26ARN_Z1-066	0.6157	Adder	0.72
200846	26FORWARD	0.0615	50/50	0.0615
200852	26WARR RDG	0.1320	Adder	0.16
200864	K-013 E	2.8269	50/50	2.8269
200883	Q-053 E	3.9870	Adder	4.69
200888	26HIGHLAND	0.1454	50/50	0.1454
200889	26STNY CRK	0.1483	50/50	0.1483
200925	26R32	0.2280	50/50	0.2280
202225	26SCI_S29B	0.0309	50/50	0.0309
203915	26BF_Z2-108	1.3853	Adder	1.63
290086	Q-036 E	2.3695	Adder	2.79
292350	K-023	2.5320	Adder	2.98
292542	L-013 1	2.4627	Adder	2.9
293301	N-039 E	4.0338	Adder	4.75
293393	V3-030E	2.1204	Adder	2.49
293432	R-040 E	0.1385	Adder	0.16
293603	O-018 E	5.9160	50/50	5.9160
293902	O-048 E	2.2164	Adder	2.61
294515	O38_P22	3.5295	Adder	4.15
294903	P-060 E	4.6439	50/50	4.6439
296332	R-032 E	6.8262	50/50	6.8262
913142	Y1-033 E OP1	1.9588	Adder	2.3
936991	AD2-133 C	1.0663	Adder	1.25
936992	AD2-133 E	4.8769	Adder	5.74
938351	AE1-053	0.7696	Adder	0.91
938881	AE1-116	0.4900	50/50	0.4900
938993	AE1-128 C	8.1036	50/50	8.1036
938994	AE1-128 E	5.4024	50/50	5.4024
941231	AE2-117 C	0.6447	Adder	0.76
941232	AE2-117 E	0.4298	Adder	0.51
941241	AE2-118 C	0.6817	Adder	0.8
941242	AE2-118 E	0.4544	Adder	0.53
941331	AE2-129 C	0.5979	Adder	0.7
941332	AE2-129 E	0.3986	Adder	0.47
941351	AE2-131 C (Suspended)	0.5979	Adder	0.7
941352	AE2-131 E (Suspended)	0.3986	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942121	AE2-224 C	3.9270	Adder	4.62
942122	AE2-224 E	2.6180	Adder	3.08
942361	AE2-249 C	0.9117	50/50	0.9117
942362	AE2-249 E	0.6078	50/50	0.6078
942511	AE2-264 C	2.4704	Adder	2.91
942512	AE2-264 E	1.6470	Adder	1.94
943711	AF1-039 C O1	0.5182	Adder	0.61
943712	AF1-039 E O1	0.3455	Adder	0.41
944181	AF1-086 C O1	1.1430	Adder	1.34
944182	AF1-086 E O1	4.9728	Adder	5.85
944691	AF1-134 C	0.5781	Adder	0.68
944692	AF1-134 E	0.3854	Adder	0.45
944751	AF1-140 C	1.0562	50/50	1.0562
944752	AF1-140 E	0.7042	50/50	0.7042
944781	AF1-143 C	4.6175	Adder	5.43
944782	AF1-143 E	2.4627	Adder	2.9
945671	AF1-232 C (Withdrawn : 01/19/2021)	11.4369	50/50	11.4369
945672	AF1-232 E (Withdrawn : 01/19/2021)	6.1583	50/50	6.1583
946571	AF1-321 C O1	1.4849	50/50	1.4849
946572	AF1-321 E O1	0.9899	50/50	0.9899
957001	AF2-001 C O1	1.4849	50/50	1.4849
957002	AF2-001 E O1	0.9899	50/50	0.9899
957011	AF2-002 C O1	0.7424	50/50	0.7424
957012	AF2-002 E O1	0.4950	50/50	0.4950
957512	AF2-045 E	2.0329	50/50	2.0329
957561	AF2-050 C	1.9635	Adder	2.31
957562	AF2-050 E	1.3090	Adder	1.54
957931	AF2-087 C (Suspended)	0.2111	Adder	0.25
957932	AF2-087 E (Suspended)	0.2906	Adder	0.34
957981	AF2-092 C	0.8031	50/50	0.8031
957982	AF2-092 E	0.5354	50/50	0.5354
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.2613	50/50	0.2613
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.1742	50/50	0.1742
958271	AF2-121 C	0.5979	Adder	0.7
958272	AF2-121 E	0.3986	Adder	0.47
958471	AF2-141	0.6157	Adder	0.72
959792	AF2-270 E	0.4188	50/50	0.4188
959802	AF2-271 E	0.1696	Adder	0.2
960051	AF2-296 C	0.5781	Adder	0.68
960052	AF2-296 E	0.3854	Adder	0.45
960451	AF2-336 C	1.3385	50/50	1.3385
960452	AF2-336 E	0.8923	50/50	0.8923
960461	AF2-337 C	1.3385	50/50	1.3385
960462	AF2-337 E	0.8923	50/50	0.8923
960471	AF2-338 C	1.3385	50/50	1.3385
960472	AF2-338 E	0.8923	50/50	0.8923
960481	AF2-339 C	1.3385	50/50	1.3385
960482	AF2-339 E	0.8923	50/50	0.8923
960901	AF2-381 C	9.7592	50/50	9.7592

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960902	AF2-381 E	5.1358	50/50	5.1358
961911	AG1-033 C	0.3842	50/50	0.3842
961912	AG1-033 E	0.2161	50/50	0.2161
961981	AG1-041 C	0.7978	50/50	0.7978
961982	AG1-041 E	0.5318	50/50	0.5318
962292	AG1-077 E	0.4406	50/50	0.4406
962411	AG1-090 C O1	1.5845	Adder	3.52
962412	AG1-090 E O1	1.0563	Adder	2.34
962641	AG1-113	0.3920	50/50	0.3920
962651	AG1-114	0.4079	Adder	0.91
962951	AG1-144 C	0.3169	Adder	0.7
962952	AG1-144 E	0.2113	Adder	0.47
963541	AG1-203 C	0.7160	50/50	0.7160
963542	AG1-203 E	0.3856	50/50	0.3856
963561	AG1-205 C	0.2651	Adder	0.59
963562	AG1-205 E	0.1428	Adder	0.32
963881	AG1-241 C	0.7805	50/50	0.7805
963882	AG1-241 E	0.4202	50/50	0.4202
963891	AG1-242 C	0.1660	Adder	0.37
963892	AG1-242 E	0.0894	Adder	0.2
964191	AG1-280 C	0.5239	Adder	1.16
964192	AG1-280 E	0.3493	Adder	0.78
964201	AG1-281 C	0.5224	Adder	1.16
964202	AG1-281 E	0.3483	Adder	0.77
964391	AG1-301 C	0.3358	Adder	0.75
964392	AG1-301 E	0.2238	Adder	0.5
964451	AG1-308 C O1	0.2037	Adder	0.45
964452	AG1-308 E O1	0.2847	Adder	0.63
964751	AG1-338 C	0.4778	50/50	0.4778
964752	AG1-338 E	0.0651	50/50	0.0651
964761	AG1-339 C	0.4995	50/50	0.4995
964762	AG1-339 E	0.0434	50/50	0.0434
964771	AG1-340 C	0.4778	50/50	0.4778
964772	AG1-340 E	0.0651	50/50	0.0651
964911	AG1-355 C	3.9820	50/50	3.9820
964912	AG1-355 E	2.6546	50/50	2.6546
964921	AG1-356 C	2.3706	50/50	2.3706
964922	AG1-356 E	1.5804	50/50	1.5804
965121	AG1-377 C O1	0.3169	Adder	0.7
965122	AG1-377 E O1	0.2113	Adder	0.47
965131	AG1-378 C O1	0.3169	Adder	0.7
965132	AG1-378 E O1	0.2113	Adder	0.47
965171	AG1-382 C	1.3248	50/50	1.3248
965172	AG1-382 E	0.8832	50/50	0.8832
965221	AG1-387 C	1.3248	50/50	1.3248
965222	AG1-387 E	0.8832	50/50	0.8832
965301	AG1-395 C	0.4072	Adder	0.9
965302	AG1-395 E	0.1210	Adder	0.27
965881	AG1-457 C	1.4138	Adder	3.14
965882	AG1-457 E	0.9425	Adder	2.09
966512	AG1-520 E	0.4950	50/50	0.4950
966783	AG1-549 BAT	3.1880	50/50	3.1880

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
G-007A	G-007A	1.3570	Confirmed LTF	1.3570
VFT	VFT	3.7410	Confirmed LTF	3.7410
CALDERWOOD	CALDERWOOD	0.2157	Confirmed LTF	0.2157
PRAIRIE	PRAIRIE	1.1908	Confirmed LTF	1.1908
CHEOAH	CHEOAH	0.2167	Confirmed LTF	0.2167
CBM-N	CBM-N	0.7380	Confirmed LTF	0.7380
COTTONWOOD	COTTONWOOD	0.9324	Confirmed LTF	0.9324
HAMLET	HAMLET	0.2171	Confirmed LTF	0.2171
GIBSON	GIBSON	0.2572	Confirmed LTF	0.2572
BLUEG	BLUEG	0.8229	Confirmed LTF	0.8229
TRIMBLE	TRIMBLE	0.2643	Confirmed LTF	0.2643
CATAWBA	CATAWBA	0.1386	Confirmed LTF	0.1386

11.6.2 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
165047624	200810	26KEYSTONE	PENELEC	999332	KEYSTONE	PENELEC	4	APS-P2-2-WP-500-DRT19	bus	634.0	143.62	145.21	DC	9.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.4562	50/50	0.4562
200794	26CONEMAGH	0.3075	50/50	0.3075
200809	26SITHE	1.4282	50/50	1.4282
200833	26SEWRDB34	14.8354	50/50	14.8354
200835	26ARN_Z1-066	0.9301	Adder	1.09
200837	26HOMER C1	24.5961	50/50	24.5961
200838	26HOMER C2	20.3806	50/50	20.3806
200839	26HOMER C3	21.5755	50/50	21.5755
200846	26FORWARD	0.0922	50/50	0.0922
200852	26WARR RDG	0.2604	Adder	0.31
200864	K-013 E	4.2361	50/50	4.2361
200883	Q-053 E	6.5672	Adder	7.73
200888	26HIGHLAND	0.2265	50/50	0.2265
200894	26K02	4.1917	Adder	4.93
200906	26KEYSTN#3	0.7604	50/50	0.7604
200925	26R32	0.3551	50/50	0.3551
202158	26CON.GEN1	0.0793	50/50	0.0793
202160	26CON.GEN2	0.0555	50/50	0.0555
203915	26BF_Z2-108	2.0927	Adder	2.46
203999	P-047 E	7.4720	Adder	8.79
235003	AC1-025 E	0.1061	Adder	0.12
236828	01GRAYMONT	0.2879	Adder	0.34
290086	Q-036 E	4.6070	Adder	5.42
292350	K-023	3.8251	Adder	4.5
292542	L-013 1	3.7204	Adder	4.38
293301	N-039 E	8.8150	Adder	10.37
293393	V3-030E	4.0181	Adder	4.73
293432	R-040 E	0.2093	Adder	0.25
293603	O-018 E	9.2165	50/50	9.2165
293902	O-048 E	3.3484	Adder	3.94
294515	O38_P22	7.7131	Adder	9.07
294903	P-060 E	5.9947	Adder	7.05
296332	R-032 E	10.6344	50/50	10.6344
913142	Y1-033 E OP1	2.9894	Adder	3.52
916202	Z1-069 E	6.0533	Adder	7.12
919201	AA1-144 OP	11.5038	Adder	13.53
920341	AA2-132 (Withdrawn : 12/07/2020)	1.5694	Adder	1.85
921642	AA2-000	36.2420	Adder	42.64
930511	AB2-092	1.3307	Adder	1.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
931092	AB1-160 E	1.7295	Adder	2.03
935191	AD1-154	2.3759	Adder	2.8
936421	AD2-055	2.7397	Adder	3.22
936991	AD2-133 C	2.0731	Adder	2.44
936992	AD2-133 E	9.4824	Adder	11.16
938351	AE1-053	1.1626	Adder	1.37
938881	AE1-116	0.6259	Adder	0.74
938951	AE1-123	1.7193	Adder	2.02
938993	AE1-128 C	10.5852	Adder	12.45
938994	AE1-128 E	7.0568	Adder	8.3
939171	AE1-147 C	0.8659	Adder	1.02
939172	AE1-147 E	0.5773	Adder	0.68
939291	AE1-160 C	1.0615	Adder	1.25
939292	AE1-160 E	0.6101	Adder	0.72
940201	AE2-001 C	0.8646	Adder	1.02
940202	AE2-001 E	0.5764	Adder	0.68
940681	AE2-055 C (Suspended)	0.8447	Adder	0.99
940682	AE2-055 E (Suspended)	0.5631	Adder	0.66
940861	AE2-074 C	1.6654	Adder	1.96
940862	AE2-074 E	2.1923	Adder	2.58
941191	AE2-113 C	6.5539	Adder	7.71
941192	AE2-113 E	7.0564	Adder	8.3
941231	AE2-117 C	1.2652	Adder	1.49
941232	AE2-117 E	0.8435	Adder	0.99
941241	AE2-118 C	1.3245	Adder	1.56
941242	AE2-118 E	0.8830	Adder	1.04
941261	AE2-120 C	0.8638	Adder	1.02
941262	AE2-120 E	0.5759	Adder	0.68
941271	AE2-121 C	0.4616	Adder	0.54
941272	AE2-121 E	0.3082	Adder	0.36
941321	AE2-126 C	1.1448	Adder	1.35
941322	AE2-126 E	0.7632	Adder	0.9
941331	AE2-129 C	1.2830	Adder	1.51
941332	AE2-129 E	0.8553	Adder	1.01
941351	AE2-131 C (Suspended)	1.2830	Adder	1.51
941352	AE2-131 E (Suspended)	0.8553	Adder	1.01
941421	AE2-139 C	2.2721	Adder	5.04
941422	AE2-139 E	1.5147	Adder	3.36
942121	AE2-224 C	8.6669	Adder	10.2
942122	AE2-224 E	5.7780	Adder	6.8
942351	AE2-248 C	0.6823	Adder	0.8
942352	AE2-248 E	0.4549	Adder	0.54
942361	AE2-249 C	1.1908	Adder	1.4
942362	AE2-249 E	0.7939	Adder	0.93
942491	AE2-262 C	3.8837	Adder	4.57
942492	AE2-262 E	2.6098	Adder	3.07
942501	AE2-263 C	3.6506	Adder	4.29
942502	AE2-263 E	2.4374	Adder	2.87
942511	AE2-264 C	5.1632	Adder	6.07
942512	AE2-264 E	3.4422	Adder	4.05
942811	AE2-299 C	2.2301	Adder	2.62
942812	AE2-299 E	8.9205	Adder	10.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942961	AE2-316 C	3.6572	Adder	4.3
942962	AE2-316 E	5.2151	Adder	6.14
943151	AE2-344 C	4.8233	Adder	5.67
943152	AE2-344 E	3.2155	Adder	3.78
943711	AF1-039 C O1	0.7909	Adder	0.93
943712	AF1-039 E O1	0.5272	Adder	0.62
943751	AF1-043	8.2190	Adder	9.67
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	0.9072	Adder	1.07
944002	AF1-068 E O1 (Withdrawn : 12/15/2020)	0.5103	Adder	0.6
944181	AF1-086 C O1	2.7629	Adder	3.25
944182	AF1-086 E O1	12.0200	Adder	14.14
944261	AF1-094 C	0.8818	Adder	1.04
944262	AF1-094 E	0.5879	Adder	0.69
944281	AF1-096 C	1.0030	Adder	1.18
944282	AF1-096 E	0.6686	Adder	0.79
944301	AF1-098 C	3.4305	Adder	4.04
944302	AF1-098 E	2.2870	Adder	2.69
944311	AF1-099 C	5.8954	Adder	6.94
944312	AF1-099 E	3.9303	Adder	4.62
944321	AF1-100 C	12.5371	Adder	14.75
944322	AF1-100 E	8.3580	Adder	9.83
944381	AF1-103 O1	1.7331	Adder	2.04
944411	AF1-106 O1	1.7177	Adder	2.02
944471	AF1-112 C	0.8552	Adder	1.01
944472	AF1-112 E	0.5701	Adder	0.67
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	0.8490	Adder	1.0
944672	AF1-132 E O1 (Withdrawn : 12/15/2020)	0.5660	Adder	0.67
944691	AF1-134 C	1.4199	Adder	1.67
944692	AF1-134 E	0.9466	Adder	1.11
944751	AF1-140 C	1.4160	Adder	1.67
944752	AF1-140 E	0.9440	Adder	1.11
944771	AF1-142 C	9.4326	Adder	11.1
944772	AF1-142 E	6.2884	Adder	7.4
944781	AF1-143 C	6.9758	Adder	8.21
944782	AF1-143 E	3.7204	Adder	4.38
944881	AF1-153 C O1	1.0402	Adder	1.22
944882	AF1-153 E O1	0.6935	Adder	0.82
944901	AF1-155 C	1.0404	Adder	1.22
944902	AF1-155 E	0.6936	Adder	0.82
945021	AF1-167 C	0.6719	Adder	0.79
945022	AF1-167 E	0.4488	Adder	0.53
945051	AF1-170 C	3.0798	Adder	3.62
945052	AF1-170 E	2.0532	Adder	2.42
945451	AF1-210 C	0.7376	Adder	0.87
945452	AF1-210 E	0.4917	Adder	0.58
945491	AF1-214 C (Withdrawn : 12/03/2020)	0.8639	Adder	1.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945492	AF1-214 E (Withdrawn : 12/03/2020)	0.5760	Adder	0.68
945671	AF1-232 C (Withdrawn : 01/19/2021)	14.7115	Adder	17.31
945672	AF1-232 E (Withdrawn : 01/19/2021)	7.9216	Adder	9.32
945751	AF1-240 C O1	1.4256	Adder	1.68
945752	AF1-240 E O1	0.9504	Adder	1.12
946071	AF1-272 C O1	15.6902	50/50	15.6902
946072	AF1-272 E O1	10.4601	50/50	10.4601
946111	AF1-276 C	7.4656	Adder	8.78
946112	AF1-276 E	3.6771	Adder	4.33
946121	AF1-277 C	7.4656	Adder	8.78
946122	AF1-277 E	3.6771	Adder	4.33
946131	AF1-278 C	5.9546	Adder	7.01
946132	AF1-278 E	2.9595	Adder	3.48
946211	AF1-286 C	0.6957	Adder	0.82
946212	AF1-286 E	0.4724	Adder	0.56
946221	AF1-287 C	0.8326	Adder	0.98
946222	AF1-287 E	0.5551	Adder	0.65
946381	AF1-302 C	1.5970	Adder	1.88
946382	AF1-302 E	2.1294	Adder	2.51
946401	AF1-304 C	5.2474	Adder	6.17
946402	AF1-304 E	3.4983	Adder	4.12
946421	AF1-306 C	4.3103	Adder	5.07
946422	AF1-306 E	17.2414	Adder	20.28
946571	AF1-321 C O1	2.2145	50/50	2.2145
946572	AF1-321 E O1	1.4763	50/50	1.4763
946771	AF1-217 C	0.8327	Adder	0.98
946772	AF1-217 E	0.5552	Adder	0.65
957001	AF2-001 C O1	2.2145	50/50	2.2145
957002	AF2-001 E O1	1.4763	50/50	1.4763
957011	AF2-002 C O1	1.1072	50/50	1.1072
957012	AF2-002 E O1	0.7382	50/50	0.7382
957161	AF2-010 C	3.4025	Adder	4.0
957162	AF2-010 E	2.2930	Adder	2.7
957451	AF2-039 C	0.7842	Adder	0.92
957452	AF2-039 E	0.5228	Adder	0.62
957512	AF2-045 E	2.6604	Adder	3.13
957561	AF2-050 C	4.3335	Adder	5.1
957562	AF2-050 E	2.8890	Adder	3.4
957571	AF2-051 C	2.5983	Adder	3.06
957572	AF2-051 E	1.3385	Adder	1.57
957931	AF2-087 C (Suspended)	0.3821	Adder	0.45
957932	AF2-087 E (Suspended)	0.5262	Adder	0.62
957941	AF2-088 C	0.3776	Adder	0.44
957942	AF2-088 E	0.2517	Adder	0.3
957981	AF2-092 C	1.0550	Adder	1.24
957982	AF2-092 E	0.7033	Adder	0.83
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.3338	Adder	0.39
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2225	Adder	0.26

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958271	AF2-121 C	1.2830	Adder	1.51
958272	AF2-121 E	0.8553	Adder	1.01
958361	AF2-130 C	1.1065	Adder	1.3
958362	AF2-130 E	0.7377	Adder	0.87
958471	AF2-141	0.9301	Adder	1.09
958731	AF2-164 C O1	4.8576	Adder	5.71
958732	AF2-164 E O1	3.2384	Adder	3.81
958741	AF2-165 C	1.0641	Adder	1.25
958742	AF2-165 E	0.7094	Adder	0.83
958751	AF2-166 C	1.1065	Adder	1.3
958752	AF2-166 E	0.7377	Adder	0.87
959061	AF2-197 C O1	2.9265	Adder	3.44
959062	AF2-197 E O1	4.3897	Adder	5.16
959441	AF2-235 C	0.5015	Adder	0.59
959442	AF2-235 E	0.3343	Adder	0.39
959471	AF2-238 C	1.0580	Adder	1.24
959472	AF2-238 E	0.7054	Adder	0.83
959481	AF2-239 C	0.7866	Adder	0.93
959482	AF2-239 E	0.6307	Adder	0.74
959491	AF2-240 C	0.3246	Adder	0.38
959492	AF2-240 E	0.2765	Adder	0.33
959501	AF2-241 C	0.9705	Adder	1.14
959502	AF2-241 E	0.7472	Adder	0.88
959521	AF2-243 C	0.7980	Adder	0.94
959522	AF2-243 E	0.5320	Adder	0.63
959741	AF2-265 C	0.7583	Adder	0.89
959742	AF2-265 E	0.5643	Adder	0.66
959792	AF2-270 E	0.5470	Adder	0.64
959802	AF2-271 E	0.3276	Adder	0.39
959822	AF2-273 E	0.2954	Adder	0.35
960022	AF2-293 E	0.0842	Adder	0.1
960031	AF2-294 C	0.9464	Adder	1.11
960032	AF2-294 E	0.6309	Adder	0.74
960041	AF2-295 C	1.0404	Adder	1.22
960042	AF2-295 E	0.6936	Adder	0.82
960051	AF2-296 C	1.4199	Adder	1.67
960052	AF2-296 E	0.9466	Adder	1.11
960271	AF2-318 C	0.8504	Adder	1.0
960272	AF2-318 E	0.5669	Adder	0.67
960451	AF2-336 C	1.7583	Adder	2.07
960452	AF2-336 E	1.1722	Adder	1.38
960461	AF2-337 C	1.7583	Adder	2.07
960462	AF2-337 E	1.1722	Adder	1.38
960471	AF2-338 C	1.7583	Adder	2.07
960472	AF2-338 E	1.1722	Adder	1.38
960481	AF2-339 C	1.7583	Adder	2.07
960482	AF2-339 E	1.1722	Adder	1.38
960901	AF2-381 C	14.7256	50/50	14.7256
960902	AF2-381 E	7.7494	50/50	7.7494
961141	AF2-405	0.8588	Adder	1.01
961151	AF2-406	6.4413	Adder	7.58
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	32.8440	Adder	38.64

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961211	AF2-412	13.1241	Adder	15.44
961911	AG1-033 C	0.5844	50/50	0.5844
961912	AG1-033 E	0.3287	50/50	0.3287
961971	AG1-040 C	0.4649	Adder	1.03
961972	AG1-040 E	0.3099	Adder	0.69
961981	AG1-041 C	0.5577	Adder	1.24
961982	AG1-041 E	0.3718	Adder	0.83
962292	AG1-077 E	0.3007	Adder	0.67
962411	AG1-090 C O1	3.3998	Adder	7.55
962412	AG1-090 E O1	2.2666	Adder	5.03
962511	AG1-100 C	0.4405	Adder	0.98
962512	AG1-100 E	0.2937	Adder	0.65
962641	AG1-113	0.2654	Adder	0.59
962651	AG1-114	0.6162	Adder	1.37
962891	AG1-138 C	0.2321	Adder	0.52
962892	AG1-138 E	0.0122	Adder	0.03
962901	AG1-139 C	0.2232	Adder	0.5
962902	AG1-139 E	0.0117	Adder	0.03
962911	AG1-140 C	0.0665	Adder	0.15
962912	AG1-140 E	0.0303	Adder	0.07
962951	AG1-144 C	0.6800	Adder	1.51
962952	AG1-144 E	0.4533	Adder	1.01
963281	AG1-177 C O1	0.4673	Adder	1.04
963282	AG1-177 E O1	0.3116	Adder	0.69
963441	AG1-193 C	0.5502	Adder	1.22
963442	AG1-193 E	0.3668	Adder	0.81
963481	AG1-197 C	0.3527	Adder	0.78
963482	AG1-197 E	0.2351	Adder	0.52
963491	AG1-198 C	0.2804	Adder	0.62
963492	AG1-198 E	0.1869	Adder	0.41
963541	AG1-203 C	0.4887	Adder	1.08
963542	AG1-203 E	0.2631	Adder	0.58
963561	AG1-205 C	0.4005	Adder	0.89
963562	AG1-205 E	0.2157	Adder	0.48
963571	AG1-206 C	0.3274	Adder	0.73
963572	AG1-206 E	0.1763	Adder	0.39
963881	AG1-241 C	1.1871	50/50	1.1871
963882	AG1-241 E	0.6392	50/50	0.6392
963891	AG1-242 C	0.4076	Adder	0.9
963892	AG1-242 E	0.2195	Adder	0.49
963941	AG1-247 C	0.2230	Adder	0.5
963942	AG1-247 E	0.1183	Adder	0.26
963991	AG1-253 C	0.0997	Adder	0.22
963992	AG1-253 E	0.0480	Adder	0.11
964031	AG1-257 C	0.3141	Adder	0.7
964032	AG1-257 E	0.4390	Adder	0.97
964041	AG1-258 C	0.3141	Adder	0.7
964042	AG1-258 E	0.4390	Adder	0.97
964191	AG1-280 C	0.8695	Adder	1.93
964192	AG1-280 E	0.5797	Adder	1.29
964201	AG1-281 C	0.8682	Adder	1.93
964202	AG1-281 E	0.5788	Adder	1.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964331	AG1-295 C	0.8622	50/50	0.8622
964332	AG1-295 E	0.4575	50/50	0.4575
964341	AG1-296 C	0.3072	Adder	0.68
964342	AG1-296 E	0.1654	Adder	0.37
964391	AG1-301 C	0.6626	Adder	1.47
964392	AG1-301 E	0.4417	Adder	0.98
964411	AG1-303 C O1	1.1017	Adder	2.45
964412	AG1-303 E O1	0.7344	Adder	1.63
964451	AG1-308 C O1	0.4567	Adder	1.01
964452	AG1-308 E O1	0.6383	Adder	1.42
964701	AG1-333 C	0.1839	Adder	0.41
964702	AG1-333 E	0.0251	Adder	0.06
964751	AG1-338 C	0.3383	Adder	0.75
964752	AG1-338 E	0.0461	Adder	0.1
964761	AG1-339 C	0.3537	Adder	0.79
964762	AG1-339 E	0.0308	Adder	0.07
964771	AG1-340 C	0.3383	Adder	0.75
964772	AG1-340 E	0.0461	Adder	0.1
964911	AG1-355 C	5.9652	50/50	5.9652
964912	AG1-355 E	3.9768	50/50	3.9768
964921	AG1-356 C	1.6139	Adder	3.58
964922	AG1-356 E	1.0759	Adder	2.39
965121	AG1-377 C O1	0.6800	Adder	1.51
965122	AG1-377 E O1	0.4533	Adder	1.01
965131	AG1-378 C O1	0.6800	Adder	1.51
965132	AG1-378 E O1	0.4533	Adder	1.01
965171	AG1-382 C	0.9204	Adder	2.04
965172	AG1-382 E	0.6136	Adder	1.36
965201	AG1-385 C	0.7089	Adder	1.57
965202	AG1-385 E	0.2100	Adder	0.47
965221	AG1-387 C	0.9204	Adder	2.04
965222	AG1-387 E	0.6136	Adder	1.36
965241	AG1-389 C O1	0.6842	Adder	1.52
965242	AG1-389 E O1	0.4562	Adder	1.01
965251	AG1-390 C O1	0.6842	Adder	1.52
965252	AG1-390 E O1	0.4562	Adder	1.01
965261	AG1-391 C O1	0.6842	Adder	1.52
965262	AG1-391 E O1	0.4562	Adder	1.01
965271	AG1-392 C O1	1.3685	Adder	3.04
965272	AG1-392 E O1	0.9123	Adder	2.03
965301	AG1-395 C	0.8738	Adder	1.94
965302	AG1-395 E	0.2595	Adder	0.58
965861	AG1-455	1.2286	Adder	2.73
965881	AG1-457 C	2.1315	Adder	4.73
965882	AG1-457 E	1.4210	Adder	3.15
966121	AG1-481	0.7133	Adder	1.58
966512	AG1-520 E	0.7382	50/50	0.7382
966771	AG1-548 C	4.4368	Adder	9.85
966772	AG1-548 E	1.3503	Adder	3.0
966781	AG1-549 C O1	31.9953	50/50	31.9953
966782	AG1-549 E O1	9.7377	50/50	9.7377
VFT	VFT	0.1032	Confirmed LTF	0.1032

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CALDERWOOD	CALDERWOOD	0.2704	Confirmed LTF	0.2704
PRAIRIE	PRAIRIE	1.2295	Confirmed LTF	1.2295
CHEOAH	CHEOAH	0.2733	Confirmed LTF	0.2733
CBM-N	CBM-N	0.1548	Confirmed LTF	0.1548
COTTONWOOD	COTTONWOOD	1.0752	Confirmed LTF	1.0752
G-007	G-007	0.0252	Confirmed LTF	0.0252
HAMLET	HAMLET	0.3465	Confirmed LTF	0.3465
GIBSON	GIBSON	0.2555	Confirmed LTF	0.2555
BLUEG	BLUEG	0.8333	Confirmed LTF	0.8333
TRIMBLE	TRIMBLE	0.2671	Confirmed LTF	0.2671
CATAWBA	CATAWBA	0.2051	Confirmed LTF	0.2051

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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
165047629	999332	KEYSTONE	PENELEC	200011	KEYSTONE	PENELEC	4	APS-P2-2-WP-500-DRT19	bus	634.0	143.15	144.73	DC	9.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.4562	50/50	0.4562
200794	26CONEMAGH	0.3075	50/50	0.3075
200809	26SITHE	1.4282	50/50	1.4282
200833	26SEWRDB34	14.8354	50/50	14.8354
200835	26ARN_Z1-066	0.9301	Adder	1.09
200837	26HOMER C1	24.5961	50/50	24.5961
200838	26HOMER C2	20.3806	50/50	20.3806
200839	26HOMER C3	21.5755	50/50	21.5755
200846	26FORWARD	0.0922	50/50	0.0922
200852	26WARR RDG	0.2604	Adder	0.31
200864	K-013 E	4.2361	50/50	4.2361
200883	Q-053 E	6.5672	Adder	7.73
200888	26HIGHLAND	0.2265	50/50	0.2265
200894	26K02	4.1917	Adder	4.93
200906	26KEYSTN#3	0.7604	50/50	0.7604
200925	26R32	0.3551	50/50	0.3551
202158	26CON.GEN1	0.0793	50/50	0.0793
202160	26CON.GEN2	0.0555	50/50	0.0555
203915	26BF_Z2-108	2.0927	Adder	2.46
203999	P-047 E	7.4720	Adder	8.79
235003	AC1-025 E	0.1061	Adder	0.12
236828	01GRAYMONT	0.2879	Adder	0.34
290086	Q-036 E	4.6070	Adder	5.42
292350	K-023	3.8251	Adder	4.5
292542	L-013 1	3.7204	Adder	4.38
293301	N-039 E	8.8150	Adder	10.37
293393	V3-030E	4.0181	Adder	4.73
293432	R-040 E	0.2093	Adder	0.25
293603	O-018 E	9.2165	50/50	9.2165
293902	O-048 E	3.3484	Adder	3.94
294515	O38_P22	7.7131	Adder	9.07
294903	P-060 E	5.9947	Adder	7.05
296332	R-032 E	10.6344	50/50	10.6344
913142	Y1-033 E OP1	2.9894	Adder	3.52
916202	Z1-069 E	6.0533	Adder	7.12
919201	AA1-144 OP	11.5038	Adder	13.53
920341	AA2-132 (Withdrawn : 12/07/2020)	1.5694	Adder	1.85
921642	AA2-000	36.2420	Adder	42.64
930511	AB2-092	1.3307	Adder	1.57
931092	AB1-160 E	1.7295	Adder	2.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935191	AD1-154	2.3759	Adder	2.8
936421	AD2-055	2.7397	Adder	3.22
936991	AD2-133 C	2.0731	Adder	2.44
936992	AD2-133 E	9.4824	Adder	11.16
938351	AE1-053	1.1626	Adder	1.37
938881	AE1-116	0.6259	Adder	0.74
938951	AE1-123	1.7193	Adder	2.02
938993	AE1-128 C	10.5852	Adder	12.45
938994	AE1-128 E	7.0568	Adder	8.3
939171	AE1-147 C	0.8659	Adder	1.02
939172	AE1-147 E	0.5773	Adder	0.68
939291	AE1-160 C	1.0615	Adder	1.25
939292	AE1-160 E	0.6101	Adder	0.72
940201	AE2-001 C	0.8646	Adder	1.02
940202	AE2-001 E	0.5764	Adder	0.68
940681	AE2-055 C (Suspended)	0.8447	Adder	0.99
940682	AE2-055 E (Suspended)	0.5631	Adder	0.66
940861	AE2-074 C	1.6654	Adder	1.96
940862	AE2-074 E	2.1923	Adder	2.58
941191	AE2-113 C	6.5539	Adder	7.71
941192	AE2-113 E	7.0564	Adder	8.3
941231	AE2-117 C	1.2652	Adder	1.49
941232	AE2-117 E	0.8435	Adder	0.99
941241	AE2-118 C	1.3245	Adder	1.56
941242	AE2-118 E	0.8830	Adder	1.04
941261	AE2-120 C	0.8638	Adder	1.02
941262	AE2-120 E	0.5759	Adder	0.68
941271	AE2-121 C	0.4616	Adder	0.54
941272	AE2-121 E	0.3082	Adder	0.36
941321	AE2-126 C	1.1448	Adder	1.35
941322	AE2-126 E	0.7632	Adder	0.9
941331	AE2-129 C	1.2830	Adder	1.51
941332	AE2-129 E	0.8553	Adder	1.01
941351	AE2-131 C (Suspended)	1.2830	Adder	1.51
941352	AE2-131 E (Suspended)	0.8553	Adder	1.01
941421	AE2-139 C	2.2721	Adder	5.04
941422	AE2-139 E	1.5147	Adder	3.36
942121	AE2-224 C	8.6669	Adder	10.2
942122	AE2-224 E	5.7780	Adder	6.8
942351	AE2-248 C	0.6823	Adder	0.8
942352	AE2-248 E	0.4549	Adder	0.54
942361	AE2-249 C	1.1908	Adder	1.4
942362	AE2-249 E	0.7939	Adder	0.93
942491	AE2-262 C	3.8837	Adder	4.57
942492	AE2-262 E	2.6098	Adder	3.07
942501	AE2-263 C	3.6506	Adder	4.29
942502	AE2-263 E	2.4374	Adder	2.87
942511	AE2-264 C	5.1632	Adder	6.07
942512	AE2-264 E	3.4422	Adder	4.05
942811	AE2-299 C	2.2301	Adder	2.62
942812	AE2-299 E	8.9205	Adder	10.49
942961	AE2-316 C	3.6572	Adder	4.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942962	AE2-316 E	5.2151	Adder	6.14
943151	AE2-344 C	4.8233	Adder	5.67
943152	AE2-344 E	3.2155	Adder	3.78
943711	AF1-039 C O1	0.7909	Adder	0.93
943712	AF1-039 E O1	0.5272	Adder	0.62
943751	AF1-043	8.2190	Adder	9.67
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	0.9072	Adder	1.07
944002	AF1-068 E O1 (Withdrawn : 12/15/2020)	0.5103	Adder	0.6
944181	AF1-086 C O1	2.7629	Adder	3.25
944182	AF1-086 E O1	12.0200	Adder	14.14
944261	AF1-094 C	0.8818	Adder	1.04
944262	AF1-094 E	0.5879	Adder	0.69
944281	AF1-096 C	1.0030	Adder	1.18
944282	AF1-096 E	0.6686	Adder	0.79
944301	AF1-098 C	3.4305	Adder	4.04
944302	AF1-098 E	2.2870	Adder	2.69
944311	AF1-099 C	5.8954	Adder	6.94
944312	AF1-099 E	3.9303	Adder	4.62
944321	AF1-100 C	12.5371	Adder	14.75
944322	AF1-100 E	8.3580	Adder	9.83
944381	AF1-103 O1	1.7331	Adder	2.04
944411	AF1-106 O1	1.7177	Adder	2.02
944471	AF1-112 C	0.8552	Adder	1.01
944472	AF1-112 E	0.5701	Adder	0.67
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	0.8490	Adder	1.0
944672	AF1-132 E O1 (Withdrawn : 12/15/2020)	0.5660	Adder	0.67
944691	AF1-134 C	1.4199	Adder	1.67
944692	AF1-134 E	0.9466	Adder	1.11
944751	AF1-140 C	1.4160	Adder	1.67
944752	AF1-140 E	0.9440	Adder	1.11
944771	AF1-142 C	9.4326	Adder	11.1
944772	AF1-142 E	6.2884	Adder	7.4
944781	AF1-143 C	6.9758	Adder	8.21
944782	AF1-143 E	3.7204	Adder	4.38
944881	AF1-153 C O1	1.0402	Adder	1.22
944882	AF1-153 E O1	0.6935	Adder	0.82
944901	AF1-155 C	1.0404	Adder	1.22
944902	AF1-155 E	0.6936	Adder	0.82
945021	AF1-167 C	0.6719	Adder	0.79
945022	AF1-167 E	0.4488	Adder	0.53
945051	AF1-170 C	3.0798	Adder	3.62
945052	AF1-170 E	2.0532	Adder	2.42
945451	AF1-210 C	0.7376	Adder	0.87
945452	AF1-210 E	0.4917	Adder	0.58
945491	AF1-214 C (Withdrawn : 12/03/2020)	0.8639	Adder	1.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945492	AF1-214 E (Withdrawn : 12/03/2020)	0.5760	Adder	0.68
945671	AF1-232 C (Withdrawn : 01/19/2021)	14.7115	Adder	17.31
945672	AF1-232 E (Withdrawn : 01/19/2021)	7.9216	Adder	9.32
945751	AF1-240 C O1	1.4256	Adder	1.68
945752	AF1-240 E O1	0.9504	Adder	1.12
946071	AF1-272 C O1	15.6902	50/50	15.6902
946072	AF1-272 E O1	10.4601	50/50	10.4601
946111	AF1-276 C	7.4656	Adder	8.78
946112	AF1-276 E	3.6771	Adder	4.33
946121	AF1-277 C	7.4656	Adder	8.78
946122	AF1-277 E	3.6771	Adder	4.33
946131	AF1-278 C	5.9546	Adder	7.01
946132	AF1-278 E	2.9595	Adder	3.48
946211	AF1-286 C	0.6957	Adder	0.82
946212	AF1-286 E	0.4724	Adder	0.56
946221	AF1-287 C	0.8326	Adder	0.98
946222	AF1-287 E	0.5551	Adder	0.65
946381	AF1-302 C	1.5970	Adder	1.88
946382	AF1-302 E	2.1294	Adder	2.51
946401	AF1-304 C	5.2474	Adder	6.17
946402	AF1-304 E	3.4983	Adder	4.12
946421	AF1-306 C	4.3103	Adder	5.07
946422	AF1-306 E	17.2414	Adder	20.28
946571	AF1-321 C O1	2.2145	50/50	2.2145
946572	AF1-321 E O1	1.4763	50/50	1.4763
946771	AF1-217 C	0.8327	Adder	0.98
946772	AF1-217 E	0.5552	Adder	0.65
957001	AF2-001 C O1	2.2145	50/50	2.2145
957002	AF2-001 E O1	1.4763	50/50	1.4763
957011	AF2-002 C O1	1.1072	50/50	1.1072
957012	AF2-002 E O1	0.7382	50/50	0.7382
957161	AF2-010 C	3.4025	Adder	4.0
957162	AF2-010 E	2.2930	Adder	2.7
957451	AF2-039 C	0.7842	Adder	0.92
957452	AF2-039 E	0.5228	Adder	0.62
957512	AF2-045 E	2.6604	Adder	3.13
957561	AF2-050 C	4.3335	Adder	5.1
957562	AF2-050 E	2.8890	Adder	3.4
957571	AF2-051 C	2.5983	Adder	3.06
957572	AF2-051 E	1.3385	Adder	1.57
957931	AF2-087 C (Suspended)	0.3821	Adder	0.45
957932	AF2-087 E (Suspended)	0.5262	Adder	0.62
957941	AF2-088 C	0.3776	Adder	0.44
957942	AF2-088 E	0.2517	Adder	0.3
957981	AF2-092 C	1.0550	Adder	1.24
957982	AF2-092 E	0.7033	Adder	0.83
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.3338	Adder	0.39
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2225	Adder	0.26

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958271	AF2-121 C	1.2830	Adder	1.51
958272	AF2-121 E	0.8553	Adder	1.01
958361	AF2-130 C	1.1065	Adder	1.3
958362	AF2-130 E	0.7377	Adder	0.87
958471	AF2-141	0.9301	Adder	1.09
958731	AF2-164 C O1	4.8576	Adder	5.71
958732	AF2-164 E O1	3.2384	Adder	3.81
958741	AF2-165 C	1.0641	Adder	1.25
958742	AF2-165 E	0.7094	Adder	0.83
958751	AF2-166 C	1.1065	Adder	1.3
958752	AF2-166 E	0.7377	Adder	0.87
959061	AF2-197 C O1	2.9265	Adder	3.44
959062	AF2-197 E O1	4.3897	Adder	5.16
959441	AF2-235 C	0.5015	Adder	0.59
959442	AF2-235 E	0.3343	Adder	0.39
959471	AF2-238 C	1.0580	Adder	1.24
959472	AF2-238 E	0.7054	Adder	0.83
959481	AF2-239 C	0.7866	Adder	0.93
959482	AF2-239 E	0.6307	Adder	0.74
959491	AF2-240 C	0.3246	Adder	0.38
959492	AF2-240 E	0.2765	Adder	0.33
959501	AF2-241 C	0.9705	Adder	1.14
959502	AF2-241 E	0.7472	Adder	0.88
959521	AF2-243 C	0.7980	Adder	0.94
959522	AF2-243 E	0.5320	Adder	0.63
959741	AF2-265 C	0.7583	Adder	0.89
959742	AF2-265 E	0.5643	Adder	0.66
959792	AF2-270 E	0.5470	Adder	0.64
959802	AF2-271 E	0.3276	Adder	0.39
959822	AF2-273 E	0.2954	Adder	0.35
960022	AF2-293 E	0.0842	Adder	0.1
960031	AF2-294 C	0.9464	Adder	1.11
960032	AF2-294 E	0.6309	Adder	0.74
960041	AF2-295 C	1.0404	Adder	1.22
960042	AF2-295 E	0.6936	Adder	0.82
960051	AF2-296 C	1.4199	Adder	1.67
960052	AF2-296 E	0.9466	Adder	1.11
960271	AF2-318 C	0.8504	Adder	1.0
960272	AF2-318 E	0.5669	Adder	0.67
960451	AF2-336 C	1.7583	Adder	2.07
960452	AF2-336 E	1.1722	Adder	1.38
960461	AF2-337 C	1.7583	Adder	2.07
960462	AF2-337 E	1.1722	Adder	1.38
960471	AF2-338 C	1.7583	Adder	2.07
960472	AF2-338 E	1.1722	Adder	1.38
960481	AF2-339 C	1.7583	Adder	2.07
960482	AF2-339 E	1.1722	Adder	1.38
960901	AF2-381 C	14.7256	50/50	14.7256
960902	AF2-381 E	7.7494	50/50	7.7494
961141	AF2-405	0.8588	Adder	1.01
961151	AF2-406	6.4413	Adder	7.58
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	32.8440	Adder	38.64

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961211	AF2-412	13.1241	Adder	15.44
961911	AG1-033 C	0.5844	50/50	0.5844
961912	AG1-033 E	0.3287	50/50	0.3287
961971	AG1-040 C	0.4649	Adder	1.03
961972	AG1-040 E	0.3099	Adder	0.69
961981	AG1-041 C	0.5577	Adder	1.24
961982	AG1-041 E	0.3718	Adder	0.83
962292	AG1-077 E	0.3007	Adder	0.67
962411	AG1-090 C O1	3.3998	Adder	7.55
962412	AG1-090 E O1	2.2666	Adder	5.03
962511	AG1-100 C	0.4405	Adder	0.98
962512	AG1-100 E	0.2937	Adder	0.65
962641	AG1-113	0.2654	Adder	0.59
962651	AG1-114	0.6162	Adder	1.37
962891	AG1-138 C	0.2321	Adder	0.52
962892	AG1-138 E	0.0122	Adder	0.03
962901	AG1-139 C	0.2232	Adder	0.5
962902	AG1-139 E	0.0117	Adder	0.03
962911	AG1-140 C	0.0665	Adder	0.15
962912	AG1-140 E	0.0303	Adder	0.07
962951	AG1-144 C	0.6800	Adder	1.51
962952	AG1-144 E	0.4533	Adder	1.01
963281	AG1-177 C O1	0.4673	Adder	1.04
963282	AG1-177 E O1	0.3116	Adder	0.69
963441	AG1-193 C	0.5502	Adder	1.22
963442	AG1-193 E	0.3668	Adder	0.81
963481	AG1-197 C	0.3527	Adder	0.78
963482	AG1-197 E	0.2351	Adder	0.52
963491	AG1-198 C	0.2804	Adder	0.62
963492	AG1-198 E	0.1869	Adder	0.41
963541	AG1-203 C	0.4887	Adder	1.08
963542	AG1-203 E	0.2631	Adder	0.58
963561	AG1-205 C	0.4005	Adder	0.89
963562	AG1-205 E	0.2157	Adder	0.48
963571	AG1-206 C	0.3274	Adder	0.73
963572	AG1-206 E	0.1763	Adder	0.39
963881	AG1-241 C	1.1871	50/50	1.1871
963882	AG1-241 E	0.6392	50/50	0.6392
963891	AG1-242 C	0.4076	Adder	0.9
963892	AG1-242 E	0.2195	Adder	0.49
963941	AG1-247 C	0.2230	Adder	0.5
963942	AG1-247 E	0.1183	Adder	0.26
963991	AG1-253 C	0.0997	Adder	0.22
963992	AG1-253 E	0.0480	Adder	0.11
964031	AG1-257 C	0.3141	Adder	0.7
964032	AG1-257 E	0.4390	Adder	0.97
964041	AG1-258 C	0.3141	Adder	0.7
964042	AG1-258 E	0.4390	Adder	0.97
964191	AG1-280 C	0.8695	Adder	1.93
964192	AG1-280 E	0.5797	Adder	1.29
964201	AG1-281 C	0.8682	Adder	1.93
964202	AG1-281 E	0.5788	Adder	1.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964331	AG1-295 C	0.8622	50/50	0.8622
964332	AG1-295 E	0.4575	50/50	0.4575
964341	AG1-296 C	0.3072	Adder	0.68
964342	AG1-296 E	0.1654	Adder	0.37
964391	AG1-301 C	0.6626	Adder	1.47
964392	AG1-301 E	0.4417	Adder	0.98
964411	AG1-303 C O1	1.1017	Adder	2.45
964412	AG1-303 E O1	0.7344	Adder	1.63
964451	AG1-308 C O1	0.4567	Adder	1.01
964452	AG1-308 E O1	0.6383	Adder	1.42
964701	AG1-333 C	0.1839	Adder	0.41
964702	AG1-333 E	0.0251	Adder	0.06
964751	AG1-338 C	0.3383	Adder	0.75
964752	AG1-338 E	0.0461	Adder	0.1
964761	AG1-339 C	0.3537	Adder	0.79
964762	AG1-339 E	0.0308	Adder	0.07
964771	AG1-340 C	0.3383	Adder	0.75
964772	AG1-340 E	0.0461	Adder	0.1
964911	AG1-355 C	5.9652	50/50	5.9652
964912	AG1-355 E	3.9768	50/50	3.9768
964921	AG1-356 C	1.6139	Adder	3.58
964922	AG1-356 E	1.0759	Adder	2.39
965121	AG1-377 C O1	0.6800	Adder	1.51
965122	AG1-377 E O1	0.4533	Adder	1.01
965131	AG1-378 C O1	0.6800	Adder	1.51
965132	AG1-378 E O1	0.4533	Adder	1.01
965171	AG1-382 C	0.9204	Adder	2.04
965172	AG1-382 E	0.6136	Adder	1.36
965201	AG1-385 C	0.7089	Adder	1.57
965202	AG1-385 E	0.2100	Adder	0.47
965221	AG1-387 C	0.9204	Adder	2.04
965222	AG1-387 E	0.6136	Adder	1.36
965241	AG1-389 C O1	0.6842	Adder	1.52
965242	AG1-389 E O1	0.4562	Adder	1.01
965251	AG1-390 C O1	0.6842	Adder	1.52
965252	AG1-390 E O1	0.4562	Adder	1.01
965261	AG1-391 C O1	0.6842	Adder	1.52
965262	AG1-391 E O1	0.4562	Adder	1.01
965271	AG1-392 C O1	1.3685	Adder	3.04
965272	AG1-392 E O1	0.9123	Adder	2.03
965301	AG1-395 C	0.8738	Adder	1.94
965302	AG1-395 E	0.2595	Adder	0.58
965861	AG1-455	1.2286	Adder	2.73
965881	AG1-457 C	2.1315	Adder	4.73
965882	AG1-457 E	1.4210	Adder	3.15
966121	AG1-481	0.7133	Adder	1.58
966512	AG1-520 E	0.7382	50/50	0.7382
966771	AG1-548 C	4.4368	Adder	9.85
966772	AG1-548 E	1.3503	Adder	3.0
966781	AG1-549 C O1	31.9953	50/50	31.9953
966782	AG1-549 E O1	9.7377	50/50	9.7377
VFT	VFT	0.1032	Confirmed LTF	0.1032

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CALDERWOOD	CALDERWOOD	0.2704	Confirmed LTF	0.2704
PRAIRIE	PRAIRIE	1.2295	Confirmed LTF	1.2295
CHEOAH	CHEOAH	0.2733	Confirmed LTF	0.2733
CBM-N	CBM-N	0.1548	Confirmed LTF	0.1548
COTTONWOOD	COTTONWOOD	1.0752	Confirmed LTF	1.0752
G-007	G-007	0.0252	Confirmed LTF	0.0252
HAMLET	HAMLET	0.3465	Confirmed LTF	0.3465
GIBSON	GIBSON	0.2555	Confirmed LTF	0.2555
BLUEG	BLUEG	0.8333	Confirmed LTF	0.8333
TRIMBLE	TRIMBLE	0.2671	Confirmed LTF	0.2671
CATAWBA	CATAWBA	0.2051	Confirmed LTF	0.2051

11.6.4 Index 4

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
166002272	200501	26BDFORD N	PENELEC	200523	26SNAKE SP	PENELEC	1	PN-P2-3-PN-115-11F	breaker	152.0	112.03	112.98	DC	3.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200835	26ARN_Z1-066	0.5329	Adder	0.63
200846	26FORWARD	0.0509	50/50	0.0509
200864	K-013 E	2.3397	50/50	2.3397
200889	26STNY CRK	0.2401	50/50	0.2401
203915	26BF_Z2-108	1.1991	Adder	1.41
292350	K-023	2.1916	Adder	2.58
292542	L-013 1	2.1317	Adder	2.51
293432	R-040 E	0.1199	Adder	0.14
293902	O-048 E	1.9185	Adder	2.26
294903	P-060 E	7.5193	50/50	7.5193
913142	Y1-033 E OP1	1.7506	Adder	2.06
938351	AE1-053	0.6661	Adder	0.78
938881	AE1-116	0.3546	Adder	0.42
938993	AE1-128 C	20.1996	50/50	20.1996
938994	AE1-128 E	13.4664	50/50	13.4664
942361	AE2-249 C	2.2725	50/50	2.2725
942362	AE2-249 E	1.5150	50/50	1.5150
943711	AF1-039 C O1	0.4631	Adder	0.54
943712	AF1-039 E O1	0.3088	Adder	0.36
944751	AF1-140 C	-1.8816	Adder	-2.21
944781	AF1-143 C	3.9969	Adder	4.7
944782	AF1-143 E	2.1317	Adder	2.51
945671	AF1-232 C (Withdrawn : 01/19/2021)	15.4710	50/50	15.4710
945672	AF1-232 E (Withdrawn : 01/19/2021)	8.3306	50/50	8.3306
946571	AF1-321 C O1	0.6571	Adder	0.77
946572	AF1-321 E O1	0.4381	Adder	0.52
957001	AF2-001 C O1	0.6571	Adder	0.77
957002	AF2-001 E O1	0.4381	Adder	0.52
957011	AF2-002 C O1	0.3285	Adder	0.39
957012	AF2-002 E O1	0.2190	Adder	0.26
957513	AF2-045 BAT	1.3162	Merchant Transmission	1.3162
957931	AF2-087 C (Suspended)	-0.2042	Adder	-0.24
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.1891	Adder	0.22
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.1261	Adder	0.15
958471	AF2-141	0.5329	Adder	0.63
959792	AF2-270 E	1.0439	50/50	1.0439
960901	AF2-381 C	12.5266	50/50	12.5266

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960902	AF2-381 E	6.5921	50/50	6.5921
962292	AG1-077 E	0.6335	50/50	0.6335
962641	AG1-113	0.1504	Adder	0.33
962651	AG1-114	0.3531	Adder	0.78
963541	AG1-203 C	1.0294	50/50	1.0294
963542	AG1-203 E	0.5543	50/50	0.5543
963561	AG1-205 C	0.2295	Adder	0.51
963562	AG1-205 E	0.1236	Adder	0.27
964753	AG1-338 BAT	1.3018	50/50	1.3018
964763	AG1-339 BAT	1.3018	50/50	1.3018
964773	AG1-340 BAT	1.3018	50/50	1.3018
964911	AG1-355 C	0.8613	Adder	1.91
964912	AG1-355 E	0.5742	Adder	1.27
964921	AG1-356 C	2.9668	50/50	2.9668
964922	AG1-356 E	1.9778	50/50	1.9778
965881	AG1-457 C	1.2160	Adder	2.7
965882	AG1-457 E	0.8107	Adder	1.8
966512	AG1-520 E	0.1161	Adder	0.26
WEC	WEC	0.0243	Confirmed LTF	0.0243
LGEE	LGEE	0.0490	Confirmed LTF	0.0490
CPL	CPL	0.0471	Confirmed LTF	0.0471
CBM-W2	CBM-W2	0.6899	Confirmed LTF	0.6899
NY	NY	0.0979	Confirmed LTF	0.0979
TVA	TVA	0.1064	Confirmed LTF	0.1064
O-066	O-066	0.9826	Confirmed LTF	0.9826
SIGE	SIGE	0.0235	Confirmed LTF	0.0235
CBM-S2	CBM-S2	0.7517	Confirmed LTF	0.7517
CBM-S1	CBM-S1	0.0293	Confirmed LTF	0.0293
G-007	G-007	0.1491	Confirmed LTF	0.1491
MEC	MEC	0.1224	Confirmed LTF	0.1224
LAGN	LAGN	0.1330	Confirmed LTF	0.1330
CBM-W1	CBM-W1	1.0515	Confirmed LTF	1.0515

11.6.5 Index 5

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
166602451	200505	26CLYSBURG	PENELEC	200525	26SUMMIT	PENELEC	1	PN-P7-1-PN-230-001	tower	252.0	110.51	115.44	DC	12.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.1264	50/50	0.1264
200834	26SW_E13_K22	0.0336	50/50	0.0336
200835	26ARN_Z1-066	1.5990	50/50	1.5990
200846	26FORWARD	0.1318	50/50	0.1318
200864	K-013 E	6.0566	50/50	6.0566
200888	26HIGHLAND	0.3683	50/50	0.3683
200889	26STNY CRK	0.4031	50/50	0.4031
200890	26BF_G21_K23	0.1608	50/50	0.1608
200891	26CSLMN_L13	0.1860	50/50	0.1860
200892	26LOOKOUT	0.1987	50/50	0.1987
200925	26R32	0.5775	50/50	0.5775
202225	26SCI_S29B	0.0672	50/50	0.0672
202652	26RGH_Y1-033	0.1217	50/50	0.1217
203915	26BF_Z2-108	3.5977	50/50	3.5977
292350	K-023	6.5757	50/50	6.5757
292542	L-013 1	6.3958	50/50	6.3958
293432	R-040 E	0.3598	50/50	0.3598
293603	O-018 E	14.9880	50/50	14.9880
293902	O-048 E	5.7563	50/50	5.7563
294903	P-060 E	12.6252	50/50	12.6252
296332	R-032 E	17.2938	50/50	17.2938
913142	Y1-033 E OP1	5.2483	50/50	5.2483
938351	AE1-053	1.9987	50/50	1.9987
938881	AE1-116	1.0644	50/50	1.0644
938993	AE1-128 C	27.0670	50/50	27.0670
938994	AE1-128 E	18.0446	50/50	18.0446
941351	AE2-131 C (Suspended)	-0.9094	Adder	-1.07
942361	AE2-249 C	3.0450	50/50	3.0450
942362	AE2-249 E	2.0300	50/50	2.0300
943711	AF1-039 C O1	1.3884	50/50	1.3884
943712	AF1-039 E O1	0.9256	50/50	0.9256
944751	AF1-140 C	4.9027	50/50	4.9027
944752	AF1-140 E	3.2685	50/50	3.2685
944781	AF1-143 C	11.9922	50/50	11.9922
944782	AF1-143 E	6.3958	50/50	6.3958
945671	AF1-232 C (Withdrawn : 01/19/2021)	28.9266	50/50	28.9266
945672	AF1-232 E (Withdrawn : 01/19/2021)	15.5758	50/50	15.5758
946571	AF1-321 C O1	2.8532	50/50	2.8532
946572	AF1-321 E O1	1.9022	50/50	1.9022

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957001	AF2-001 C O1	2.8532	50/50	2.8532
957002	AF2-001 E O1	1.9022	50/50	1.9022
957011	AF2-002 C O1	1.4266	50/50	1.4266
957012	AF2-002 E O1	0.9511	50/50	0.9511
957513	AF2-045 BAT	2.6190	50/50	2.6190
957931	AF2-087 C (Suspended)	-0.2402	Adder	-0.28
957981	AF2-092 C	2.9074	50/50	2.9074
957982	AF2-092 E	1.9383	50/50	1.9383
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.5677	50/50	0.5677
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.3785	50/50	0.3785
958471	AF2-141	1.5990	50/50	1.5990
959792	AF2-270 E	1.3988	50/50	1.3988
959803	AF2-271 BAT	0.1233	Merchant Transmission	0.1233
960451	AF2-336 C	4.8457	50/50	4.8457
960452	AF2-336 E	3.2305	50/50	3.2305
960461	AF2-337 C	4.8457	50/50	4.8457
960462	AF2-337 E	3.2305	50/50	3.2305
960471	AF2-338 C	4.8457	50/50	4.8457
960472	AF2-338 E	3.2305	50/50	3.2305
960481	AF2-339 C	4.8457	50/50	4.8457
960482	AF2-339 E	3.2305	50/50	3.2305
960901	AF2-381 C	24.1081	50/50	24.1081
960902	AF2-381 E	12.6869	50/50	12.6869
961911	AG1-033 C	0.6497	50/50	0.6497
961912	AG1-033 E	0.3655	50/50	0.3655
961981	AG1-041 C	3.0536	50/50	3.0536
961982	AG1-041 E	2.0357	50/50	2.0357
962292	AG1-077 E	1.1411	50/50	1.1411
962641	AG1-113	0.8515	50/50	0.8515
962651	AG1-114	1.9987	50/50	1.9987
963541	AG1-203 C	1.8543	50/50	1.8543
963542	AG1-203 E	0.9984	50/50	0.9984
963561	AG1-205 C	1.2992	50/50	1.2992
963562	AG1-205 E	0.6995	50/50	0.6995
963881	AG1-241 C	1.3198	50/50	1.3198
963882	AG1-241 E	0.7106	50/50	0.7106
964191	AG1-280 C	3.5288	50/50	3.5288
964192	AG1-280 E	2.3526	50/50	2.3526
964201	AG1-281 C	3.4664	50/50	3.4664
964202	AG1-281 E	2.3110	50/50	2.3110
964751	AG1-338 C	2.1353	50/50	2.1353
964752	AG1-338 E	0.2912	50/50	0.2912
964761	AG1-339 C	2.2323	50/50	2.2323
964762	AG1-339 E	0.1941	50/50	0.1941
964771	AG1-340 C	2.1353	50/50	2.1353
964772	AG1-340 E	0.2912	50/50	0.2912
964911	AG1-355 C	7.4465	50/50	7.4465
964912	AG1-355 E	4.9643	50/50	4.9643
964921	AG1-356 C	5.8249	50/50	5.8249
964922	AG1-356 E	3.8832	50/50	3.8832
965303	AG1-395 BAT	0.4050	Merchant Transmission	0.4050

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965881	AG1-457 C	6.8850	50/50	6.8850
965882	AG1-457 E	4.5900	50/50	4.5900
966512	AG1-520 E	0.9511	50/50	0.9511
WEC	WEC	0.0378	Confirmed LTF	0.0378
LGEE	LGEE	0.0785	Confirmed LTF	0.0785
CPL	CPL	0.0935	Confirmed LTF	0.0935
CBM-W2	CBM-W2	1.1290	Confirmed LTF	1.1290
NY	NY	0.2101	Confirmed LTF	0.2101
TVA	TVA	0.1820	Confirmed LTF	0.1820
O-066	O-066	1.4537	Confirmed LTF	1.4537
SIGE	SIGE	0.0357	Confirmed LTF	0.0357
CBM-S2	CBM-S2	1.4198	Confirmed LTF	1.4198
CBM-S1	CBM-S1	0.0490	Confirmed LTF	0.0490
G-007	G-007	0.2195	Confirmed LTF	0.2195
MEC	MEC	0.1939	Confirmed LTF	0.1939
LAGN	LAGN	0.2240	Confirmed LTF	0.2240
CBM-W1	CBM-W1	1.5843	Confirmed LTF	1.5843

11.6.6 Index 6

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
166002268	200523	26SNAKE SP	PENELEC	200521	26SAXTON	PENELEC	1	PN-P2-3-PN-115-11F	breaker	160.0	112.92	113.82	DC	3.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200835	26ARN_Z1-066	0.5329	Adder	0.63
200846	26FORWARD	0.0509	50/50	0.0509
200864	K-013 E	2.3397	50/50	2.3397
200889	26STNY CRK	0.2401	50/50	0.2401
203915	26BF_Z2-108	1.1991	Adder	1.41
292350	K-023	2.1916	Adder	2.58
292542	L-013 1	2.1317	Adder	2.51
293432	R-040 E	0.1199	Adder	0.14
293902	O-048 E	1.9185	Adder	2.26
294903	P-060 E	7.5193	50/50	7.5193
913142	Y1-033 E OP1	1.7506	Adder	2.06
938351	AE1-053	0.6661	Adder	0.78
938881	AE1-116	0.3546	Adder	0.42
938993	AE1-128 C	20.1996	50/50	20.1996
938994	AE1-128 E	13.4664	50/50	13.4664
942361	AE2-249 C	2.2725	50/50	2.2725
942362	AE2-249 E	1.5150	50/50	1.5150
943711	AF1-039 C O1	0.4631	Adder	0.54
943712	AF1-039 E O1	0.3088	Adder	0.36
944751	AF1-140 C	-1.8816	Adder	-2.21
944781	AF1-143 C	3.9969	Adder	4.7
944782	AF1-143 E	2.1317	Adder	2.51
945671	AF1-232 C (Withdrawn : 01/19/2021)	15.4710	50/50	15.4710
945672	AF1-232 E (Withdrawn : 01/19/2021)	8.3306	50/50	8.3306
946571	AF1-321 C O1	0.6571	Adder	0.77
946572	AF1-321 E O1	0.4381	Adder	0.52
957001	AF2-001 C O1	0.6571	Adder	0.77
957002	AF2-001 E O1	0.4381	Adder	0.52
957011	AF2-002 C O1	0.3285	Adder	0.39
957012	AF2-002 E O1	0.2190	Adder	0.26
957513	AF2-045 BAT	1.3162	Merchant Transmission	1.3162
957931	AF2-087 C (Suspended)	-0.2042	Adder	-0.24
957981	AF2-092 C	2.8096	50/50	2.8096
957982	AF2-092 E	1.8731	50/50	1.8731
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.1891	Adder	0.22
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.1261	Adder	0.15
958471	AF2-141	0.5329	Adder	0.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959792	AF2-270 E	1.0439	50/50	1.0439
959803	AF2-271 BAT	0.0819	Merchant Transmission	0.0819
960451	AF2-336 C	4.6826	50/50	4.6826
960452	AF2-336 E	3.1218	50/50	3.1218
960461	AF2-337 C	4.6826	50/50	4.6826
960462	AF2-337 E	3.1218	50/50	3.1218
960471	AF2-338 C	4.6826	50/50	4.6826
960472	AF2-338 E	3.1218	50/50	3.1218
960481	AF2-339 C	4.6826	50/50	4.6826
960482	AF2-339 E	3.1218	50/50	3.1218
960901	AF2-381 C	12.5266	50/50	12.5266
960902	AF2-381 E	6.5921	50/50	6.5921
962292	AG1-077 E	0.6335	50/50	0.6335
962641	AG1-113	0.1504	Adder	0.33
962651	AG1-114	0.3531	Adder	0.78
963541	AG1-203 C	1.0294	50/50	1.0294
963542	AG1-203 E	0.5543	50/50	0.5543
963561	AG1-205 C	0.2295	Adder	0.51
963562	AG1-205 E	0.1236	Adder	0.27
964753	AG1-338 BAT	1.3018	50/50	1.3018
964763	AG1-339 BAT	1.3018	50/50	1.3018
964773	AG1-340 BAT	1.3018	50/50	1.3018
964911	AG1-355 C	0.8613	Adder	1.91
964912	AG1-355 E	0.5742	Adder	1.27
964921	AG1-356 C	2.9668	50/50	2.9668
964922	AG1-356 E	1.9778	50/50	1.9778
965881	AG1-457 C	1.2160	Adder	2.7
965882	AG1-457 E	0.8107	Adder	1.8
966512	AG1-520 E	0.1161	Adder	0.26
WEC	WEC	0.0243	Confirmed LTF	0.0243
LGEE	LGEE	0.0490	Confirmed LTF	0.0490
CPL	CPL	0.0471	Confirmed LTF	0.0471
CBM-W2	CBM-W2	0.6899	Confirmed LTF	0.6899
NY	NY	0.0979	Confirmed LTF	0.0979
TVA	TVA	0.1064	Confirmed LTF	0.1064
O-066	O-066	0.9826	Confirmed LTF	0.9826
SIGE	SIGE	0.0235	Confirmed LTF	0.0235
CBM-S2	CBM-S2	0.7517	Confirmed LTF	0.7517
CBM-S1	CBM-S1	0.0293	Confirmed LTF	0.0293
G-007	G-007	0.1491	Confirmed LTF	0.1491
MEC	MEC	0.1224	Confirmed LTF	0.1224
LAGN	LAGN	0.1330	Confirmed LTF	0.1330
CBM-W1	CBM-W1	1.0515	Confirmed LTF	1.0515

11.6.7 Index 7

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
166602444	200734	26SCALP L.	PENELEC	200749	26RACHEL H	PENELEC	1	PN-P7-1-PN-230-001	tower	245.0	103.22	115.39	DC	29.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.2241	50/50	0.2241
200834	26SW_E13_K22	0.0596	50/50	0.0596
200835	26ARN_Z1-066	2.8383	50/50	2.8383
200840	26DEEPCRK1	0.1927	50/50	0.1927
200841	26DEEPCRK2	0.1946	50/50	0.1946
200846	26FORWARD	0.2364	50/50	0.2364
200864	K-013 E	10.8611	50/50	10.8611
200889	26STNY CRK	0.4605	50/50	0.4605
200890	26BF_G21_K23	0.2855	50/50	0.2855
200891	26CSLMN_L13	0.3303	50/50	0.3303
200892	26LOOKOUT	0.3526	50/50	0.3526
202225	26SCI_S29B	0.1193	50/50	0.1193
202652	26RGH_Y1-033	0.2159	50/50	0.2159
203915	26BF_Z2-108	6.3862	50/50	6.3862
292350	K-023	11.6726	50/50	11.6726
292542	L-013 1	11.3533	50/50	11.3533
293432	R-040 E	0.6386	50/50	0.6386
293902	O-048 E	10.2180	50/50	10.2180
294903	P-060 E	14.4211	50/50	14.4211
913142	Y1-033 E OP1	9.3096	50/50	9.3096
938351	AE1-053	3.5479	50/50	3.5479
938881	AE1-116	1.8901	50/50	1.8901
938993	AE1-128 C	18.2297	50/50	18.2297
938994	AE1-128 E	12.1531	50/50	12.1531
942361	AE2-249 C	2.0508	50/50	2.0508
942362	AE2-249 E	1.3672	50/50	1.3672
943711	AF1-039 C O1	2.4628	50/50	2.4628
943712	AF1-039 E O1	1.6419	50/50	1.6419
944781	AF1-143 C	21.2874	50/50	21.2874
944782	AF1-143 E	11.3533	50/50	11.3533
945671	AF1-232 C (Withdrawn : 01/19/2021)	38.5050	50/50	38.5050
945672	AF1-232 E (Withdrawn : 01/19/2021)	20.7334	50/50	20.7334
946571	AF1-321 C O1	6.1408	50/50	6.1408
946572	AF1-321 E O1	4.0938	50/50	4.0938
957001	AF2-001 C O1	6.1408	50/50	6.1408
957002	AF2-001 E O1	4.0938	50/50	4.0938
957011	AF2-002 C O1	3.0704	50/50	3.0704
957012	AF2-002 E O1	2.0469	50/50	2.0469
957981	AF2-092 C	1.5036	50/50	1.5036

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957982	AF2-092 E	1.0024	50/50	1.0024
958101	AF2-104 C (Withdrawn : 12/08/2020)	1.0081	50/50	1.0081
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.6720	50/50	0.6720
958471	AF2-141	2.8383	50/50	2.8383
959792	AF2-270 E	0.9421	50/50	0.9421
960451	AF2-336 C	2.5061	50/50	2.5061
960452	AF2-336 E	1.6707	50/50	1.6707
960461	AF2-337 C	2.5061	50/50	2.5061
960462	AF2-337 E	1.6707	50/50	1.6707
960471	AF2-338 C	2.5061	50/50	2.5061
960472	AF2-338 E	1.6707	50/50	1.6707
960481	AF2-339 C	2.5061	50/50	2.5061
960482	AF2-339 E	1.6707	50/50	1.6707
960901	AF2-381 C	33.2367	50/50	33.2367
960902	AF2-381 E	17.4908	50/50	17.4908
961911	AG1-033 C	2.2085	50/50	2.2085
961912	AG1-033 E	1.2423	50/50	1.2423
961981	AG1-041 C	1.2712	50/50	1.2712
961982	AG1-041 E	0.8475	50/50	0.8475
962292	AG1-077 E	1.4468	50/50	1.4468
962641	AG1-113	1.5121	50/50	1.5121
962651	AG1-114	3.5479	50/50	3.5479
963541	AG1-203 C	2.3511	50/50	2.3511
963542	AG1-203 E	1.2660	50/50	1.2660
963561	AG1-205 C	2.3061	50/50	2.3061
963562	AG1-205 E	1.2418	50/50	1.2418
963881	AG1-241 C	4.4860	50/50	4.4860
963882	AG1-241 E	2.4155	50/50	2.4155
964911	AG1-355 C	17.9013	50/50	17.9013
964912	AG1-355 E	11.9342	50/50	11.9342
964921	AG1-356 C	8.2162	50/50	8.2162
964922	AG1-356 E	5.4775	50/50	5.4775
965881	AG1-457 C	12.2232	50/50	12.2232
965882	AG1-457 E	8.1488	50/50	8.1488
966512	AG1-520 E	2.0469	50/50	2.0469
WEC	WEC	0.0447	Confirmed LTF	0.0447
LGEE	LGEE	0.0949	Confirmed LTF	0.0949
CPL	CPL	0.1276	Confirmed LTF	0.1276
CBM-W2	CBM-W2	1.3888	Confirmed LTF	1.3888
NY	NY	0.2411	Confirmed LTF	0.2411
TVA	TVA	0.2282	Confirmed LTF	0.2282
O-066	O-066	1.6287	Confirmed LTF	1.6287
SIGE	SIGE	0.0412	Confirmed LTF	0.0412
CBM-S2	CBM-S2	1.9001	Confirmed LTF	1.9001
CBM-S1	CBM-S1	0.0612	Confirmed LTF	0.0612
G-007	G-007	0.2467	Confirmed LTF	0.2467
MEC	MEC	0.2336	Confirmed LTF	0.2336
LAGN	LAGN	0.2818	Confirmed LTF	0.2818
CBM-W1	CBM-W1	1.8366	Confirmed LTF	1.8366

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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
166002296	200741	26SEWARD	PENELEC	200766	26FLORENCE	PENELEC	1	PN-P2-3-PN-230-0183-208	breaker	263.0	106.54	109.06	DC	6.64

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	0.8909	50/50	0.8909
200794	26CONEMAGH	0.2735	50/50	0.2735
200834	26SW_E13_K22	0.0155	50/50	0.0155
200835	26ARN_Z1-066	0.6157	Adder	0.72
200846	26FORWARD	0.0615	50/50	0.0615
200852	26WARR RDG	0.1320	Adder	0.16
200864	K-013 E	2.8269	50/50	2.8269
200883	Q-053 E	3.9870	Adder	4.69
200888	26HIGHLAND	0.1454	50/50	0.1454
200889	26STNY CRK	0.1483	50/50	0.1483
200925	26R32	0.2280	50/50	0.2280
202225	26SCI_S29B	0.0309	50/50	0.0309
203915	26BF_Z2-108	1.3853	Adder	1.63
290086	Q-036 E	2.3695	Adder	2.79
292350	K-023	2.5320	Adder	2.98
292542	L-013 1	2.4627	Adder	2.9
293301	N-039 E	4.0338	Adder	4.75
293393	V3-030E	2.1204	Adder	2.49
293432	R-040 E	0.1385	Adder	0.16
293603	O-018 E	5.9160	50/50	5.9160
293902	O-048 E	2.2164	Adder	2.61
294515	O38_P22	3.5295	Adder	4.15
294903	P-060 E	4.6439	50/50	4.6439
296332	R-032 E	6.8262	50/50	6.8262
913142	Y1-033 E OP1	1.9588	Adder	2.3
936991	AD2-133 C	1.0663	Adder	1.25
936992	AD2-133 E	4.8769	Adder	5.74
938351	AE1-053	0.7696	Adder	0.91
938881	AE1-116	0.4900	50/50	0.4900
938993	AE1-128 C	8.1036	50/50	8.1036
938994	AE1-128 E	5.4024	50/50	5.4024
941231	AE2-117 C	0.6447	Adder	0.76
941232	AE2-117 E	0.4298	Adder	0.51
941241	AE2-118 C	0.6817	Adder	0.8
941242	AE2-118 E	0.4544	Adder	0.53
941331	AE2-129 C	0.5979	Adder	0.7
941332	AE2-129 E	0.3986	Adder	0.47
941351	AE2-131 C (Suspended)	0.5979	Adder	0.7
941352	AE2-131 E (Suspended)	0.3986	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942121	AE2-224 C	3.9270	Adder	4.62
942122	AE2-224 E	2.6180	Adder	3.08
942361	AE2-249 C	0.9117	50/50	0.9117
942362	AE2-249 E	0.6078	50/50	0.6078
942511	AE2-264 C	2.4704	Adder	2.91
942512	AE2-264 E	1.6470	Adder	1.94
943711	AF1-039 C O1	0.5182	Adder	0.61
943712	AF1-039 E O1	0.3455	Adder	0.41
944181	AF1-086 C O1	1.1430	Adder	1.34
944182	AF1-086 E O1	4.9728	Adder	5.85
944691	AF1-134 C	0.5781	Adder	0.68
944692	AF1-134 E	0.3854	Adder	0.45
944751	AF1-140 C	1.0562	50/50	1.0562
944752	AF1-140 E	0.7042	50/50	0.7042
944781	AF1-143 C	4.6175	Adder	5.43
944782	AF1-143 E	2.4627	Adder	2.9
945671	AF1-232 C (Withdrawn : 01/19/2021)	11.4369	50/50	11.4369
945672	AF1-232 E (Withdrawn : 01/19/2021)	6.1583	50/50	6.1583
946571	AF1-321 C O1	1.4849	50/50	1.4849
946572	AF1-321 E O1	0.9899	50/50	0.9899
957001	AF2-001 C O1	1.4849	50/50	1.4849
957002	AF2-001 E O1	0.9899	50/50	0.9899
957011	AF2-002 C O1	0.7424	50/50	0.7424
957012	AF2-002 E O1	0.4950	50/50	0.4950
957512	AF2-045 E	2.0329	50/50	2.0329
957561	AF2-050 C	1.9635	Adder	2.31
957562	AF2-050 E	1.3090	Adder	1.54
957931	AF2-087 C (Suspended)	0.2111	Adder	0.25
957932	AF2-087 E (Suspended)	0.2906	Adder	0.34
957981	AF2-092 C	0.8031	50/50	0.8031
957982	AF2-092 E	0.5354	50/50	0.5354
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.2613	50/50	0.2613
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.1742	50/50	0.1742
958271	AF2-121 C	0.5979	Adder	0.7
958272	AF2-121 E	0.3986	Adder	0.47
958471	AF2-141	0.6157	Adder	0.72
959792	AF2-270 E	0.4188	50/50	0.4188
959802	AF2-271 E	0.1696	Adder	0.2
960051	AF2-296 C	0.5781	Adder	0.68
960052	AF2-296 E	0.3854	Adder	0.45
960451	AF2-336 C	1.3385	50/50	1.3385
960452	AF2-336 E	0.8923	50/50	0.8923
960461	AF2-337 C	1.3385	50/50	1.3385
960462	AF2-337 E	0.8923	50/50	0.8923
960471	AF2-338 C	1.3385	50/50	1.3385
960472	AF2-338 E	0.8923	50/50	0.8923
960481	AF2-339 C	1.3385	50/50	1.3385
960482	AF2-339 E	0.8923	50/50	0.8923
960901	AF2-381 C	9.7592	50/50	9.7592

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960902	AF2-381 E	5.1358	50/50	5.1358
961911	AG1-033 C	0.3842	50/50	0.3842
961912	AG1-033 E	0.2161	50/50	0.2161
961981	AG1-041 C	0.7978	50/50	0.7978
961982	AG1-041 E	0.5318	50/50	0.5318
962292	AG1-077 E	0.4406	50/50	0.4406
962411	AG1-090 C O1	1.5845	Adder	3.52
962412	AG1-090 E O1	1.0563	Adder	2.34
962641	AG1-113	0.3920	50/50	0.3920
962651	AG1-114	0.4079	Adder	0.91
962951	AG1-144 C	0.3169	Adder	0.7
962952	AG1-144 E	0.2113	Adder	0.47
963541	AG1-203 C	0.7160	50/50	0.7160
963542	AG1-203 E	0.3856	50/50	0.3856
963561	AG1-205 C	0.2651	Adder	0.59
963562	AG1-205 E	0.1428	Adder	0.32
963881	AG1-241 C	0.7805	50/50	0.7805
963882	AG1-241 E	0.4202	50/50	0.4202
963891	AG1-242 C	0.1660	Adder	0.37
963892	AG1-242 E	0.0894	Adder	0.2
964191	AG1-280 C	0.5239	Adder	1.16
964192	AG1-280 E	0.3493	Adder	0.78
964201	AG1-281 C	0.5224	Adder	1.16
964202	AG1-281 E	0.3483	Adder	0.77
964391	AG1-301 C	0.3358	Adder	0.75
964392	AG1-301 E	0.2238	Adder	0.5
964451	AG1-308 C O1	0.2037	Adder	0.45
964452	AG1-308 E O1	0.2847	Adder	0.63
964751	AG1-338 C	0.4778	50/50	0.4778
964752	AG1-338 E	0.0651	50/50	0.0651
964761	AG1-339 C	0.4995	50/50	0.4995
964762	AG1-339 E	0.0434	50/50	0.0434
964771	AG1-340 C	0.4778	50/50	0.4778
964772	AG1-340 E	0.0651	50/50	0.0651
964911	AG1-355 C	3.9820	50/50	3.9820
964912	AG1-355 E	2.6546	50/50	2.6546
964921	AG1-356 C	2.3706	50/50	2.3706
964922	AG1-356 E	1.5804	50/50	1.5804
965121	AG1-377 C O1	0.3169	Adder	0.7
965122	AG1-377 E O1	0.2113	Adder	0.47
965131	AG1-378 C O1	0.3169	Adder	0.7
965132	AG1-378 E O1	0.2113	Adder	0.47
965171	AG1-382 C	1.3248	50/50	1.3248
965172	AG1-382 E	0.8832	50/50	0.8832
965221	AG1-387 C	1.3248	50/50	1.3248
965222	AG1-387 E	0.8832	50/50	0.8832
965301	AG1-395 C	0.4072	Adder	0.9
965302	AG1-395 E	0.1210	Adder	0.27
965881	AG1-457 C	1.4138	Adder	3.14
965882	AG1-457 E	0.9425	Adder	2.09
966512	AG1-520 E	0.4950	50/50	0.4950
966783	AG1-549 BAT	3.1880	50/50	3.1880

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
G-007A	G-007A	1.3570	Confirmed LTF	1.3570
VFT	VFT	3.7410	Confirmed LTF	3.7410
CALDERWOOD	CALDERWOOD	0.2157	Confirmed LTF	0.2157
PRAIRIE	PRAIRIE	1.1908	Confirmed LTF	1.1908
CHEOAH	CHEOAH	0.2167	Confirmed LTF	0.2167
CBM-N	CBM-N	0.7380	Confirmed LTF	0.7380
COTTONWOOD	COTTONWOOD	0.9324	Confirmed LTF	0.9324
HAMLET	HAMLET	0.2171	Confirmed LTF	0.2171
GIBSON	GIBSON	0.2572	Confirmed LTF	0.2572
BLUEG	BLUEG	0.8229	Confirmed LTF	0.8229
TRIMBLE	TRIMBLE	0.2643	Confirmed LTF	0.2643
CATAWBA	CATAWBA	0.1386	Confirmed LTF	0.1386

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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
166602471	200744	26SOMERST	PENELEC	965880	AG1-457 TAP	PENELEC	1	PN-P7-1-PN-230-001	tower	179.0	108.5	114.56	DC	10.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200834	26SW_E13_K22	0.0404	50/50	0.0404
200835	26ARN_Z1-066	-4.1106	Adder	-4.84
200846	26FORWARD	0.1044	50/50	0.1044
200864	K-013 E	4.7966	50/50	4.7966
200888	26HIGHLAND	0.1443	50/50	0.1443
200889	26STNY CRK	0.3137	50/50	0.3137
200925	26R32	0.2262	50/50	0.2262
202225	26SCI_S29B	0.0808	50/50	0.0808
293603	O-018 E	5.8708	50/50	5.8708
294903	P-060 E	9.8259	50/50	9.8259
296332	R-032 E	6.7740	50/50	6.7740
917673	Z2-108 BAT	10.8810	50/50	10.8810
938352	AE1-053 BAT	6.0450	50/50	6.0450
938881	AE1-116	1.2798	50/50	1.2798
938993	AE1-128 C	12.5712	50/50	12.5712
938994	AE1-128 E	8.3808	50/50	8.3808
942361	AE2-249 C	1.4143	50/50	1.4143
942362	AE2-249 E	0.9428	50/50	0.9428
943301	AF1-001 C	-0.8054	Adder	-0.95
944751	AF1-140 C	1.1050	50/50	1.1050
944752	AF1-140 E	0.7367	50/50	0.7367
945671	AF1-232 C (Withdrawn : 01/19/2021)	26.1706	50/50	26.1706
945672	AF1-232 E (Withdrawn : 01/19/2021)	14.0918	50/50	14.0918
946571	AF1-321 C O1	2.5591	50/50	2.5591
946572	AF1-321 E O1	1.7061	50/50	1.7061
957001	AF2-001 C O1	2.5591	50/50	2.5591
957002	AF2-001 E O1	1.7061	50/50	1.7061
957011	AF2-002 C O1	1.2796	50/50	1.2796
957012	AF2-002 E O1	0.8530	50/50	0.8530
957981	AF2-092 C	1.1585	50/50	1.1585
957982	AF2-092 E	0.7723	50/50	0.7723
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.6826	50/50	0.6826
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.4551	50/50	0.4551
958472	AF2-141 BAT	12.0900	50/50	12.0900
959792	AF2-270 E	0.6497	50/50	0.6497
960451	AF2-336 C	1.9308	50/50	1.9308
960452	AF2-336 E	1.2872	50/50	1.2872

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960461	AF2-337 C	1.9308	50/50	1.9308
960462	AF2-337 E	1.2872	50/50	1.2872
960471	AF2-338 C	1.9308	50/50	1.9308
960472	AF2-338 E	1.2872	50/50	1.2872
960481	AF2-339 C	1.9308	50/50	1.9308
960482	AF2-339 E	1.2872	50/50	1.2872
960901	AF2-381 C	16.1695	50/50	16.1695
960902	AF2-381 E	8.5092	50/50	8.5092
961911	AG1-033 C	0.5102	50/50	0.5102
961912	AG1-033 E	0.2870	50/50	0.2870
961981	AG1-041 C	1.0866	50/50	1.0866
961982	AG1-041 E	0.7244	50/50	0.7244
962292	AG1-077 E	0.9841	50/50	0.9841
962641	AG1-113	1.0239	50/50	1.0239
962652	AG1-114 BAT	6.0450	50/50	6.0450
963541	AG1-203 C	1.5991	50/50	1.5991
963542	AG1-203 E	0.8611	50/50	0.8611
963881	AG1-241 C	1.0364	50/50	1.0364
963882	AG1-241 E	0.5581	50/50	0.5581
964191	AG1-280 C	0.4902	Adder	1.09
964192	AG1-280 E	0.3268	Adder	0.73
964201	AG1-281 C	0.4872	Adder	1.08
964202	AG1-281 E	0.3248	Adder	0.72
964751	AG1-338 C	0.5317	50/50	0.5317
964752	AG1-338 E	0.0725	50/50	0.0725
964761	AG1-339 C	0.5559	50/50	0.5559
964762	AG1-339 E	0.0483	50/50	0.0483
964771	AG1-340 C	0.5317	50/50	0.5317
964772	AG1-340 E	0.0725	50/50	0.0725
964911	AG1-355 C	6.5111	50/50	6.5111
964912	AG1-355 E	4.3407	50/50	4.3407
964921	AG1-356 C	5.5797	50/50	5.5797
964922	AG1-356 E	3.7198	50/50	3.7198
966512	AG1-520 E	0.8530	50/50	0.8530
G-007A	G-007A	1.0909	Confirmed LTF	1.0909
VFT	VFT	2.9993	Confirmed LTF	2.9993
CALDERWOOD	CALDERWOOD	0.1605	Confirmed LTF	0.1605
PRAIRIE	PRAIRIE	0.7594	Confirmed LTF	0.7594
CHEOAH	CHEOAH	0.1617	Confirmed LTF	0.1617
CBM-N	CBM-N	0.5844	Confirmed LTF	0.5844
COTTONWOOD	COTTONWOOD	0.6489	Confirmed LTF	0.6489
HAMLET	HAMLET	0.1981	Confirmed LTF	0.1981
GIBSON	GIBSON	0.1583	Confirmed LTF	0.1583
BLUEG	BLUEG	0.5086	Confirmed LTF	0.5086
TRIMBLE	TRIMBLE	0.1631	Confirmed LTF	0.1631
CATAWBA	CATAWBA	0.1186	Confirmed LTF	0.1186

11.6.10 Index 10

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
166602427	200749	26RACHEL H	PENELEC	200751	26HILLCLAY	PENELEC	1	PN-P7-1-PN-230-001	tower	217.0	103.68	117.43	DC	29.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.2241	50/50	0.2241
200834	26SW_E13_K22	0.0596	50/50	0.0596
200835	26ARN_Z1-066	2.8383	50/50	2.8383
200840	26DEEPCRK1	0.1927	50/50	0.1927
200841	26DEEPCRK2	0.1946	50/50	0.1946
200846	26FORWARD	0.2364	50/50	0.2364
200864	K-013 E	10.8611	50/50	10.8611
200889	26STNY CRK	0.4605	50/50	0.4605
200890	26BF_G21_K23	0.2855	50/50	0.2855
200891	26CSLMN_L13	0.3303	50/50	0.3303
200892	26LOOKOUT	0.3526	50/50	0.3526
202225	26SCI_S29B	0.1193	50/50	0.1193
202652	26RGH_Y1-033	0.2159	50/50	0.2159
203915	26BF_Z2-108	6.3862	50/50	6.3862
292350	K-023	11.6726	50/50	11.6726
292542	L-013 1	11.3533	50/50	11.3533
293432	R-040 E	0.6386	50/50	0.6386
293902	O-048 E	10.2180	50/50	10.2180
294903	P-060 E	14.4211	50/50	14.4211
913142	Y1-033 E OP1	9.3096	50/50	9.3096
938351	AE1-053	3.5479	50/50	3.5479
938881	AE1-116	1.8901	50/50	1.8901
938993	AE1-128 C	18.2297	50/50	18.2297
938994	AE1-128 E	12.1531	50/50	12.1531
942361	AE2-249 C	2.0508	50/50	2.0508
942362	AE2-249 E	1.3672	50/50	1.3672
943711	AF1-039 C O1	2.4628	50/50	2.4628
943712	AF1-039 E O1	1.6419	50/50	1.6419
944781	AF1-143 C	21.2874	50/50	21.2874
944782	AF1-143 E	11.3533	50/50	11.3533
945671	AF1-232 C (Withdrawn : 01/19/2021)	38.5050	50/50	38.5050
945672	AF1-232 E (Withdrawn : 01/19/2021)	20.7334	50/50	20.7334
946571	AF1-321 C O1	6.1408	50/50	6.1408
946572	AF1-321 E O1	4.0938	50/50	4.0938
957001	AF2-001 C O1	6.1408	50/50	6.1408
957002	AF2-001 E O1	4.0938	50/50	4.0938
957011	AF2-002 C O1	3.0704	50/50	3.0704
957012	AF2-002 E O1	2.0469	50/50	2.0469
957981	AF2-092 C	1.5036	50/50	1.5036

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957982	AF2-092 E	1.0024	50/50	1.0024
958101	AF2-104 C (Withdrawn : 12/08/2020)	1.0081	50/50	1.0081
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.6720	50/50	0.6720
958471	AF2-141	2.8383	50/50	2.8383
959792	AF2-270 E	0.9421	50/50	0.9421
960451	AF2-336 C	2.5061	50/50	2.5061
960452	AF2-336 E	1.6707	50/50	1.6707
960461	AF2-337 C	2.5061	50/50	2.5061
960462	AF2-337 E	1.6707	50/50	1.6707
960471	AF2-338 C	2.5061	50/50	2.5061
960472	AF2-338 E	1.6707	50/50	1.6707
960481	AF2-339 C	2.5061	50/50	2.5061
960482	AF2-339 E	1.6707	50/50	1.6707
960901	AF2-381 C	33.2367	50/50	33.2367
960902	AF2-381 E	17.4908	50/50	17.4908
961911	AG1-033 C	2.2085	50/50	2.2085
961912	AG1-033 E	1.2423	50/50	1.2423
961981	AG1-041 C	1.2712	50/50	1.2712
961982	AG1-041 E	0.8475	50/50	0.8475
962292	AG1-077 E	1.4468	50/50	1.4468
962641	AG1-113	1.5121	50/50	1.5121
962651	AG1-114	3.5479	50/50	3.5479
963541	AG1-203 C	2.3511	50/50	2.3511
963542	AG1-203 E	1.2660	50/50	1.2660
963561	AG1-205 C	2.3061	50/50	2.3061
963562	AG1-205 E	1.2418	50/50	1.2418
963881	AG1-241 C	4.4860	50/50	4.4860
963882	AG1-241 E	2.4155	50/50	2.4155
964911	AG1-355 C	17.9013	50/50	17.9013
964912	AG1-355 E	11.9342	50/50	11.9342
964921	AG1-356 C	8.2162	50/50	8.2162
964922	AG1-356 E	5.4775	50/50	5.4775
965881	AG1-457 C	12.2232	50/50	12.2232
965882	AG1-457 E	8.1488	50/50	8.1488
966512	AG1-520 E	2.0469	50/50	2.0469
WEC	WEC	0.0447	Confirmed LTF	0.0447
LGEE	LGEE	0.0949	Confirmed LTF	0.0949
CPL	CPL	0.1276	Confirmed LTF	0.1276
CBM-W2	CBM-W2	1.3888	Confirmed LTF	1.3888
NY	NY	0.2411	Confirmed LTF	0.2411
TVA	TVA	0.2282	Confirmed LTF	0.2282
O-066	O-066	1.6287	Confirmed LTF	1.6287
SIGE	SIGE	0.0412	Confirmed LTF	0.0412
CBM-S2	CBM-S2	1.9001	Confirmed LTF	1.9001
CBM-S1	CBM-S1	0.0612	Confirmed LTF	0.0612
G-007	G-007	0.2467	Confirmed LTF	0.2467
MEC	MEC	0.2336	Confirmed LTF	0.2336
LAGN	LAGN	0.2818	Confirmed LTF	0.2818
CBM-W1	CBM-W1	1.8366	Confirmed LTF	1.8366

11.6.11 Index 11

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
166602450	200751	26HILLCLAY	PENELEC	200752	26HILLTOP	PENELEC	1	PN-P7-1-PN-230-001	tower	282.0	106.22	115.95	DC	27.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.2238	50/50	0.2238
200834	26SW_E13_K22	0.0596	50/50	0.0596
200835	26ARN_Z1-066	2.8370	50/50	2.8370
200840	26DEEPCRK1	0.1921	50/50	0.1921
200841	26DEEPCRK2	0.1940	50/50	0.1940
200846	26FORWARD	0.2356	50/50	0.2356
200864	K-013 E	10.8267	50/50	10.8267
200883	Q-053 E	7.3843	50/50	7.3843
200888	26HIGHLAND	0.7062	50/50	0.7062
200889	26STNY CRK	0.5401	50/50	0.5401
200890	26BF_G21_K23	0.2853	50/50	0.2853
200891	26CSLMN_L13	0.3301	50/50	0.3301
200892	26LOOKOUT	0.3525	50/50	0.3525
200915	26CHSTN_FL	0.1553	50/50	0.1553
200925	26R32	1.1072	50/50	1.1072
202225	26SCI_S29B	0.1193	50/50	0.1193
202652	26RGH_Y1-033	0.2157	50/50	0.2157
203915	26BF_Z2-108	6.3832	50/50	6.3832
292350	K-023	11.6670	50/50	11.6670
292542	L-013 1	11.3478	50/50	11.3478
293432	R-040 E	0.6383	50/50	0.6383
293603	O-018 E	28.7352	50/50	28.7352
293902	O-048 E	10.2131	50/50	10.2131
294903	P-060 E	16.9163	50/50	16.9163
296332	R-032 E	33.1560	50/50	33.1560
913142	Y1-033 E OP1	9.3014	50/50	9.3014
938351	AE1-053	3.5462	50/50	3.5462
938881	AE1-116	1.8896	50/50	1.8896
938993	AE1-128 C	27.5472	50/50	27.5472
938994	AE1-128 E	18.3648	50/50	18.3648
942361	AE2-249 C	3.0991	50/50	3.0991
942362	AE2-249 E	2.0660	50/50	2.0660
943711	AF1-039 C O1	2.4607	50/50	2.4607
943712	AF1-039 E O1	1.6405	50/50	1.6405
944751	AF1-140 C	3.0816	50/50	3.0816
944752	AF1-140 E	2.0544	50/50	2.0544
944781	AF1-143 C	21.2772	50/50	21.2772
944782	AF1-143 E	11.3478	50/50	11.3478
945671	AF1-232 C (Withdrawn : 01/19/2021)	42.5131	50/50	42.5131

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945672	AF1-232 E (Withdrawn : 01/19/2021)	22.8917	50/50	22.8917
946571	AF1-321 C O1	5.8045	50/50	5.8045
946572	AF1-321 E O1	3.8697	50/50	3.8697
957001	AF2-001 C O1	5.8045	50/50	5.8045
957002	AF2-001 E O1	3.8697	50/50	3.8697
957011	AF2-002 C O1	2.9023	50/50	2.9023
957012	AF2-002 E O1	1.9348	50/50	1.9348
957981	AF2-092 C	2.6466	50/50	2.6466
957982	AF2-092 E	1.7644	50/50	1.7644
958101	AF2-104 C (Withdrawn : 12/08/2020)	1.0078	50/50	1.0078
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.6719	50/50	0.6719
958471	AF2-141	2.8370	50/50	2.8370
959792	AF2-270 E	1.4237	50/50	1.4237
960451	AF2-336 C	4.4111	50/50	4.4111
960452	AF2-336 E	2.9407	50/50	2.9407
960461	AF2-337 C	4.4111	50/50	4.4111
960462	AF2-337 E	2.9407	50/50	2.9407
960471	AF2-338 C	4.4111	50/50	4.4111
960472	AF2-338 E	2.9407	50/50	2.9407
960481	AF2-339 C	4.4111	50/50	4.4111
960482	AF2-339 E	2.9407	50/50	2.9407
960901	AF2-381 C	36.2244	50/50	36.2244
960902	AF2-381 E	19.0631	50/50	19.0631
961911	AG1-033 C	1.8864	50/50	1.8864
961912	AG1-033 E	1.0611	50/50	1.0611
961981	AG1-041 C	2.5680	50/50	2.5680
961982	AG1-041 E	1.7120	50/50	1.7120
962292	AG1-077 E	1.6275	50/50	1.6275
962641	AG1-113	1.5117	50/50	1.5117
962651	AG1-114	3.5462	50/50	3.5462
963541	AG1-203 C	2.6447	50/50	2.6447
963542	AG1-203 E	1.4240	50/50	1.4240
963561	AG1-205 C	2.3050	50/50	2.3050
963562	AG1-205 E	1.2412	50/50	1.2412
963881	AG1-241 C	3.8318	50/50	3.8318
963882	AG1-241 E	2.0633	50/50	2.0633
964191	AG1-280 C	2.7077	50/50	2.7077
964192	AG1-280 E	1.8051	50/50	1.8051
964201	AG1-281 C	2.6807	50/50	2.6807
964202	AG1-281 E	1.7871	50/50	1.7871
964751	AG1-338 C	1.4243	50/50	1.4243
964752	AG1-338 E	0.1942	50/50	0.1942
964761	AG1-339 C	1.4891	50/50	1.4891
964762	AG1-339 E	0.1295	50/50	0.1295
964771	AG1-340 C	1.4243	50/50	1.4243
964772	AG1-340 E	0.1942	50/50	0.1942
964911	AG1-355 C	16.4560	50/50	16.4560
964912	AG1-355 E	10.9706	50/50	10.9706
964921	AG1-356 C	8.8787	50/50	8.8787
964922	AG1-356 E	5.9191	50/50	5.9191

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965881	AG1-457 C	12.2184	50/50	12.2184
965882	AG1-457 E	8.1456	50/50	8.1456
966512	AG1-520 E	1.9348	50/50	1.9348
WEC	WEC	0.0296	Confirmed LTF	0.0296
LGEE	LGEE	0.0647	Confirmed LTF	0.0647
CPL	CPL	0.1037	Confirmed LTF	0.1037
CBM-W2	CBM-W2	0.9856	Confirmed LTF	0.9856
NY	NY	0.1919	Confirmed LTF	0.1919
TVA	TVA	0.1666	Confirmed LTF	0.1666
O-066	O-066	1.1306	Confirmed LTF	1.1306
SIGE	SIGE	0.0284	Confirmed LTF	0.0284
CBM-S2	CBM-S2	1.5034	Confirmed LTF	1.5034
CBM-S1	CBM-S1	0.0441	Confirmed LTF	0.0441
G-007	G-007	0.1711	Confirmed LTF	0.1711
MEC	MEC	0.1589	Confirmed LTF	0.1589
LAGN	LAGN	0.2030	Confirmed LTF	0.2030
CBM-W1	CBM-W1	1.1637	Confirmed LTF	1.1637

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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
164560781	200763	26BLAIRSVL	PENELEC	235253	01SOCIAL	AP	1	PN-P2-3-PN-230-0201A-20	breaker	287.0	118.78	120.77	DC	5.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	0.8489	50/50	0.8489
200636	26IUP CO-G	0.3536	50/50	0.3536
200794	26CONEMAGH	0.2400	50/50	0.2400
200805	26COLVER13 (Deactivation : 01/09/2020)	2.1933	50/50	2.1933
200835	26ARN_Z1-066	0.5207	Adder	0.61
200846	26FORWARD	0.0529	50/50	0.0529
200852	26WARR RDG	0.1401	Adder	0.16
200864	K-013 E	2.4302	50/50	2.4302
200883	Q-053 E	3.8833	Adder	4.57
200888	26HIGHLAND	0.1341	50/50	0.1341
200925	26R32	0.2103	50/50	0.2103
200945	26CT_V3-030	0.0928	50/50	0.0928
202158	26CON.GEN1	0.0626	50/50	0.0626
202160	26CON.GEN2	0.1172	50/50	0.1172
203915	26BF_Z2-108	1.1715	Adder	1.38
290086	Q-036 E	2.5473	Adder	3.0
292350	K-023	2.1413	Adder	2.52
292542	L-013 1	2.0827	Adder	2.45
293301	N-039 E	4.3286	Adder	5.09
293393	V3-030E	3.1313	50/50	3.1313
293432	R-040 E	0.1172	Adder	0.14
293603	O-018 E	5.4579	50/50	5.4579
293902	O-048 E	1.8744	Adder	2.21
294515	O38_P22	3.7875	Adder	4.46
294903	P-060 E	3.4475	Adder	4.06
296332	R-032 E	6.2976	50/50	6.2976
913142	Y1-033 E OP1	1.6199	Adder	1.91
935191	AD1-154	1.3493	Adder	1.59
936881	AD2-112 C	-2.3978	Adder	-2.82
936882	AD2-112 E	-0.9515	Adder	-1.12
936991	AD2-133 C	1.1463	Adder	1.35
936992	AD2-133 E	5.2429	Adder	6.17
938351	AE1-053	0.6508	Adder	0.77
938362	AE1-054 BAT	1.0156	Merchant Transmission	1.0156
938881	AE1-116	0.3561	Adder	0.42
938993	AE1-128 C	7.2475	50/50	7.2475
938994	AE1-128 E	4.8317	50/50	4.8317

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941231	AE2-117 C	0.6834	Adder	0.8
941232	AE2-117 E	0.4556	Adder	0.54
941241	AE2-118 C	0.7152	Adder	0.84
941242	AE2-118 E	0.4768	Adder	0.56
941321	AE2-126 C	0.5215	Adder	0.61
941322	AE2-126 E	0.3477	Adder	0.41
941331	AE2-129 C	0.6856	Adder	0.81
941332	AE2-129 E	0.4571	Adder	0.54
941351	AE2-131 C (Suspended)	0.6856	Adder	0.81
941352	AE2-131 E (Suspended)	0.4571	Adder	0.54
942121	AE2-224 C	4.2162	Adder	4.96
942122	AE2-224 E	2.8108	Adder	3.31
942361	AE2-249 C	0.8153	50/50	0.8153
942362	AE2-249 E	0.5436	50/50	0.5436
942511	AE2-264 C	2.6569	Adder	3.13
942512	AE2-264 E	1.7713	Adder	2.08
943711	AF1-039 C O1	0.4286	Adder	0.5
943712	AF1-039 E O1	0.2857	Adder	0.34
944181	AF1-086 C O1	2.1898	50/50	2.1898
944182	AF1-086 E O1	9.5267	50/50	9.5267
944691	AF1-134 C	0.8737	Adder	1.03
944692	AF1-134 E	0.5825	Adder	0.69
944751	AF1-140 C	0.9867	50/50	0.9867
944752	AF1-140 E	0.6578	50/50	0.6578
944781	AF1-143 C	3.9051	Adder	4.59
944782	AF1-143 E	2.0827	Adder	2.45
945671	AF1-232 C (Withdrawn : 01/19/2021)	8.4298	Adder	9.92
945672	AF1-232 E (Withdrawn : 01/19/2021)	4.5391	Adder	5.34
945751	AF1-240 C O1	0.8096	Adder	0.95
945752	AF1-240 E O1	0.5397	Adder	0.63
946071	AF1-272 C O1	12.3704	50/50	12.3704
946072	AF1-272 E O1	8.2469	50/50	8.2469
946571	AF1-321 C O1	1.2670	50/50	1.2670
946572	AF1-321 E O1	0.8446	50/50	0.8446
957001	AF2-001 C O1	1.2670	50/50	1.2670
957002	AF2-001 E O1	0.8446	50/50	0.8446
957011	AF2-002 C O1	0.6335	50/50	0.6335
957012	AF2-002 E O1	0.4223	50/50	0.4223
957451	AF2-039 C	0.3980	Adder	0.47
957452	AF2-039 E	0.2653	Adder	0.31
957512	AF2-045 E	1.9370	50/50	1.9370
957561	AF2-050 C	2.1081	Adder	2.48
957562	AF2-050 E	1.4054	Adder	1.65
957931	AF2-087 C (Suspended)	0.2141	Adder	0.25
957932	AF2-087 E (Suspended)	0.2949	Adder	0.35
957941	AF2-088 C	0.1916	Adder	0.23
957942	AF2-088 E	0.1278	Adder	0.15
957981	AF2-092 C	0.7251	50/50	0.7251
957982	AF2-092 E	0.4834	50/50	0.4834
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.1899	Adder	0.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.1266	Adder	0.15
958271	AF2-121 C	0.6856	Adder	0.81
958272	AF2-121 E	0.4571	Adder	0.54
958471	AF2-141	0.5207	Adder	0.61
959792	AF2-270 E	0.3746	50/50	0.3746
959802	AF2-271 E	0.1790	Adder	0.21
960051	AF2-296 C	0.8737	Adder	1.03
960052	AF2-296 E	0.5825	Adder	0.69
960451	AF2-336 C	1.2085	50/50	1.2085
960452	AF2-336 E	0.8057	50/50	0.8057
960461	AF2-337 C	1.2085	50/50	1.2085
960462	AF2-337 E	0.8057	50/50	0.8057
960471	AF2-338 C	1.2085	50/50	1.2085
960472	AF2-338 E	0.8057	50/50	0.8057
960481	AF2-339 C	1.2085	50/50	1.2085
960482	AF2-339 E	0.8057	50/50	0.8057
960901	AF2-381 C	8.4816	50/50	8.4816
960902	AF2-381 E	4.4634	50/50	4.4634
961911	AG1-033 C	0.3406	50/50	0.3406
961912	AG1-033 E	0.1916	50/50	0.1916
961981	AG1-041 C	0.7254	50/50	0.7254
961982	AG1-041 E	0.4836	50/50	0.4836
962292	AG1-077 E	0.1725	Adder	0.38
962411	AG1-090 C O1	1.8170	Adder	4.03
962412	AG1-090 E O1	1.2113	Adder	2.69
962641	AG1-113	0.1510	Adder	0.34
962651	AG1-114	0.3449	Adder	0.77
962951	AG1-144 C	0.3634	Adder	0.81
962952	AG1-144 E	0.2423	Adder	0.54
963541	AG1-203 C	0.2804	Adder	0.62
963542	AG1-203 E	0.1510	Adder	0.34
963561	AG1-205 C	0.2242	Adder	0.5
963562	AG1-205 E	0.1207	Adder	0.27
963881	AG1-241 C	0.6918	50/50	0.6918
963882	AG1-241 E	0.3725	50/50	0.3725
963891	AG1-242 C	0.2508	Adder	0.56
963892	AG1-242 E	0.1351	Adder	0.3
964191	AG1-280 C	0.5034	Adder	1.12
964192	AG1-280 E	0.3356	Adder	0.74
964201	AG1-281 C	0.5023	Adder	1.11
964202	AG1-281 E	0.3349	Adder	0.74
964331	AG1-295 C	1.8203	50/50	1.8203
964332	AG1-295 E	0.9659	50/50	0.9659
964391	AG1-301 C	0.3565	Adder	0.79
964392	AG1-301 E	0.2376	Adder	0.53
964451	AG1-308 C O1	0.2406	Adder	0.53
964452	AG1-308 E O1	0.3363	Adder	0.75
964751	AG1-338 C	0.4438	50/50	0.4438
964752	AG1-338 E	0.0605	50/50	0.0605
964761	AG1-339 C	0.4640	50/50	0.4640
964762	AG1-339 E	0.0403	50/50	0.0403
964771	AG1-340 C	0.4438	50/50	0.4438

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964772	AG1-340 E	0.0605	50/50	0.0605
964911	AG1-355 C	3.4269	50/50	3.4269
964912	AG1-355 E	2.2846	50/50	2.2846
964921	AG1-356 C	0.9235	Adder	2.05
964922	AG1-356 E	0.6156	Adder	1.37
965121	AG1-377 C O1	0.3634	Adder	0.81
965122	AG1-377 E O1	0.2423	Adder	0.54
965131	AG1-378 C O1	0.3634	Adder	0.81
965132	AG1-378 E O1	0.2423	Adder	0.54
965171	AG1-382 C	1.3036	50/50	1.3036
965172	AG1-382 E	0.8690	50/50	0.8690
965221	AG1-387 C	1.3036	50/50	1.3036
965222	AG1-387 E	0.8690	50/50	0.8690
965301	AG1-395 C	0.4670	Adder	1.04
965302	AG1-395 E	0.1387	Adder	0.31
965881	AG1-457 C	1.2007	Adder	2.67
965882	AG1-457 E	0.8005	Adder	1.78
966453	AG1-514 BAT	0.2965	Merchant Transmission	0.2965
966512	AG1-520 E	0.4223	50/50	0.4223
966781	AG1-549 C O1	25.2758	50/50	25.2758
966782	AG1-549 E O1	7.6926	50/50	7.6926
G-007A	G-007A	1.9851	Confirmed LTF	1.9851
VFT	VFT	5.4631	Confirmed LTF	5.4631
CALDERWOOD	CALDERWOOD	0.3017	Confirmed LTF	0.3017
PRAIRIE	PRAIRIE	1.6583	Confirmed LTF	1.6583
CHEOAH	CHEOAH	0.3028	Confirmed LTF	0.3028
CBM-N	CBM-N	1.0728	Confirmed LTF	1.0728
COTTONWOOD	COTTONWOOD	1.3041	Confirmed LTF	1.3041
HAMLET	HAMLET	0.3043	Confirmed LTF	0.3043
GIBSON	GIBSON	0.3587	Confirmed LTF	0.3587
BLUEG	BLUEG	1.1475	Confirmed LTF	1.1475
TRIMBLE	TRIMBLE	0.3684	Confirmed LTF	0.3684
CATAWBA	CATAWBA	0.1942	Confirmed LTF	0.1942

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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
167526125	200767	26HOMER CT	PENELEC	200795	26SHELOCTA	PENELEC	1	ATSI-P2-3-CEI-345-004C	breaker	923.0	195.86	197.31	DC	13.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200809	26SITHE	2.1681	50/50	2.1681
200823	26MHP_X3-003	5.8518	Adder	6.88
200832	26HNSMLK 5	1.9218	50/50	1.9218
200833	26SEWRDB34	21.0061	50/50	21.0061
200835	26ARN_Z1-066	1.2266	Adder	1.44
200837	26HOMER C1	37.3397	50/50	37.3397
200838	26HOMER C2	31.6582	50/50	31.6582
200839	26HOMER C3	33.5144	50/50	33.5144
200846	26FORWARD	0.1221	50/50	0.1221
200852	26WARR RDG	0.3665	Adder	0.43
200864	K-013 E	5.6093	50/50	5.6093
200883	Q-053 E	8.5978	Adder	10.12
200886	26ARWF_N39	0.3909	50/50	0.3909
200888	26HIGHLAND	0.2971	50/50	0.2971
200894	26K02	6.8415	Adder	8.05
200925	26R32	0.4658	50/50	0.4658
203034	26NA_O38_P22	0.3434	50/50	0.3434
203915	26BF_Z2-108	2.7598	Adder	3.25
203932	AA2-133 GEN	2.1515	Adder	2.53
203999	P-047 E	12.3617	Adder	14.54
235003	AC1-025 E	0.1637	Adder	0.19
236828	01GRAYMONT	0.4444	Adder	0.52
290086	Q-036 E	6.2152	Adder	7.31
292350	K-023	5.0443	Adder	5.93
292542	L-013 1	4.9063	Adder	5.77
293301	N-039 E	14.8211	50/50	14.8211
293393	V3-030E	4.1799	Adder	4.92
293432	R-040 E	0.2760	Adder	0.32
293603	O-018 E	12.0895	50/50	12.0895
293902	O-048 E	4.4157	Adder	5.19
294515	O38_P22	12.9685	50/50	12.9685
294573	P-028 E	11.3261	Adder	13.32
294903	P-060 E	7.9086	Adder	9.3
296332	R-032 E	13.9494	50/50	13.9494
913142	Y1-033 E OP1	3.9223	Adder	4.61
915951	Y3-092 FTIR	200.7700	Merchant Transmission	200.7700
916202	Z1-069 E	10.0381	Adder	11.81
919201	AA1-144 OP	19.3347	Adder	22.75
920341	AA2-132 (Withdrawn : 12/07/2020)	2.6551	Adder	3.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
921642	AA2-000	57.6748	Adder	67.85
930511	AB2-092	2.1176	Adder	2.49
931092	AB1-160 E	2.8680	Adder	3.37
935191	AD1-154	2.4786	Adder	2.92
936421	AD2-055	4.3599	Adder	5.13
936991	AD2-133 C	2.7968	Adder	3.29
936992	AD2-133 E	12.7924	Adder	15.05
938351	AE1-053	1.5332	Adder	1.8
938881	AE1-116	0.8276	Adder	0.97
938951	AE1-123	2.4006	Adder	2.82
938993	AE1-128 C	13.9291	Adder	16.39
938994	AE1-128 E	9.2861	Adder	10.92
939171	AE1-147 C	1.3370	Adder	1.57
939172	AE1-147 E	0.8913	Adder	1.05
939291	AE1-160 C	1.9800	Adder	2.33
939292	AE1-160 E	1.1381	Adder	1.34
940201	AE2-001 C	1.3350	Adder	1.57
940202	AE2-001 E	0.8900	Adder	1.05
940681	AE2-055 C (Suspended)	1.3028	Adder	1.53
940682	AE2-055 E (Suspended)	0.8686	Adder	1.02
940861	AE2-074 C	2.7716	Adder	3.26
940862	AE2-074 E	3.6484	Adder	4.29
941191	AE2-113 C	10.7814	Adder	12.68
941192	AE2-113 E	11.6081	Adder	13.66
941231	AE2-117 C	1.7727	Adder	2.09
941232	AE2-117 E	1.1818	Adder	1.39
941241	AE2-118 C	1.8499	Adder	2.18
941242	AE2-118 E	1.2332	Adder	1.45
941261	AE2-120 C	1.3338	Adder	1.57
941262	AE2-120 E	0.8892	Adder	1.05
941271	AE2-121 C	0.7128	Adder	0.84
941272	AE2-121 E	0.4759	Adder	0.56
941321	AE2-126 C	1.7168	Adder	2.02
941322	AE2-126 E	1.1445	Adder	1.35
941331	AE2-129 C	1.7502	Adder	2.06
941332	AE2-129 E	1.1668	Adder	1.37
941351	AE2-131 C (Suspended)	1.7502	Adder	2.06
941352	AE2-131 E (Suspended)	1.1668	Adder	1.37
941421	AE2-139 C	3.8058	Adder	8.45
941422	AE2-139 E	2.5372	Adder	5.63
942121	AE2-224 C	14.5704	50/50	14.5704
942122	AE2-224 E	9.7136	50/50	9.7136
942351	AE2-248 C	1.0530	Adder	1.24
942352	AE2-248 E	0.7020	Adder	0.83
942361	AE2-249 C	1.5670	Adder	1.84
942362	AE2-249 E	1.0447	Adder	1.23
942491	AE2-262 C	6.0142	Adder	7.08
942492	AE2-262 E	4.0415	Adder	4.75
942501	AE2-263 C	5.6533	Adder	6.65
942502	AE2-263 E	3.7745	Adder	4.44
942511	AE2-264 C	7.4117	Adder	8.72
942512	AE2-264 E	4.9412	Adder	5.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	5.4849	Adder	6.45
942812	AE2-299 E	21.9395	Adder	25.81
942961	AE2-316 C	5.7639	Adder	6.78
942962	AE2-316 E	8.2194	Adder	9.67
943151	AE2-344 C	11.9941	Adder	14.11
943152	AE2-344 E	7.9961	Adder	9.41
943351	AF1-006 C	2.1827	Adder	2.57
943352	AF1-006 E	1.2278	Adder	1.44
943711	AF1-039 C O1	1.0376	Adder	1.22
943712	AF1-039 E O1	0.6918	Adder	0.81
943751	AF1-043	13.0796	Adder	15.39
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	1.3997	Adder	1.65
944002	AF1-068 E O1 (Withdrawn : 12/15/2020)	0.7873	Adder	0.93
944181	AF1-086 C O1	2.4818	Adder	2.92
944182	AF1-086 E O1	10.7971	Adder	12.7
944261	AF1-094 C	1.9802	Adder	2.33
944262	AF1-094 E	1.3202	Adder	1.55
944281	AF1-096 C	1.8709	Adder	2.2
944282	AF1-096 E	1.2473	Adder	1.47
944301	AF1-098 C	8.1930	Adder	9.64
944302	AF1-098 E	5.4620	Adder	6.43
944311	AF1-099 C	9.1295	Adder	10.74
944312	AF1-099 E	6.0863	Adder	7.16
944321	AF1-100 C	19.1531	Adder	22.53
944322	AF1-100 E	12.7687	Adder	15.02
944381	AF1-103 O1	3.4267	Adder	4.03
944391	AF1-104 O1	3.4156	Adder	4.02
944411	AF1-106 O1	2.8806	Adder	3.39
944471	AF1-112 C	1.3198	Adder	1.55
944472	AF1-112 E	0.8799	Adder	1.04
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	1.3100	Adder	1.54
944672	AF1-132 E O1 (Withdrawn : 12/15/2020)	0.8733	Adder	1.03
944691	AF1-134 C	1.5185	Adder	1.79
944692	AF1-134 E	1.0123	Adder	1.19
944751	AF1-140 C	1.8520	Adder	2.18
944752	AF1-140 E	1.2346	Adder	1.45
944771	AF1-142 C	14.6072	Adder	17.18
944772	AF1-142 E	9.7382	Adder	11.46
944781	AF1-143 C	9.1994	Adder	10.82
944782	AF1-143 E	4.9063	Adder	5.77
944881	AF1-153 C O1	1.6418	Adder	1.93
944882	AF1-153 E O1	1.0945	Adder	1.29
944901	AF1-155 C	1.6416	Adder	1.93
944902	AF1-155 E	1.0944	Adder	1.29
945021	AF1-167 C	0.9946	Adder	1.17
945022	AF1-167 E	0.6643	Adder	0.78
945051	AF1-170 C	7.9750	Adder	9.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945052	AF1-170 E	5.3166	Adder	6.25
945451	AF1-210 C	1.0882	Adder	1.28
945452	AF1-210 E	0.7255	Adder	0.85
945491	AF1-214 C (Withdrawn : 12/03/2020)	1.3339	Adder	1.57
945492	AF1-214 E (Withdrawn : 12/03/2020)	0.8892	Adder	1.05
945671	AF1-232 C (Withdrawn : 01/19/2021)	19.4232	Adder	22.85
945672	AF1-232 E (Withdrawn : 01/19/2021)	10.4587	Adder	12.3
945751	AF1-240 C O1	1.4872	Adder	1.75
945752	AF1-240 E O1	0.9914	Adder	1.17
946111	AF1-276 C	12.8075	Adder	15.07
946112	AF1-276 E	6.3082	Adder	7.42
946121	AF1-277 C	12.8075	Adder	15.07
946122	AF1-277 E	6.3082	Adder	7.42
946131	AF1-278 C	10.2154	Adder	12.02
946132	AF1-278 E	5.0771	Adder	5.97
946211	AF1-286 C	1.1667	Adder	1.37
946212	AF1-286 E	0.7922	Adder	0.93
946221	AF1-287 C	2.0600	Adder	2.42
946222	AF1-287 E	1.3733	Adder	1.62
946381	AF1-302 C	2.5170	Adder	2.96
946382	AF1-302 E	3.3560	Adder	3.95
946401	AF1-304 C	9.1448	Adder	10.76
946402	AF1-304 E	6.0965	Adder	7.17
946421	AF1-306 C	6.9143	Adder	8.13
946422	AF1-306 E	27.6573	Adder	32.54
946571	AF1-321 C O1	2.9359	50/50	2.9359
946572	AF1-321 E O1	1.9573	50/50	1.9573
946771	AF1-217 C	2.0600	Adder	2.42
946772	AF1-217 E	1.3733	Adder	1.62
957001	AF2-001 C O1	2.9359	50/50	2.9359
957002	AF2-001 E O1	1.9573	50/50	1.9573
957011	AF2-002 C O1	1.4680	50/50	1.4680
957012	AF2-002 E O1	0.9786	50/50	0.9786
957161	AF2-010 C	7.5709	Adder	8.91
957162	AF2-010 E	5.1022	Adder	6.0
957451	AF2-039 C	1.0866	Adder	1.28
957452	AF2-039 E	0.7244	Adder	0.85
957512	AF2-045 E	3.4137	Adder	4.02
957561	AF2-050 C	7.2852	50/50	7.2852
957562	AF2-050 E	4.8568	50/50	4.8568
957571	AF2-051 C	5.7578	Adder	6.77
957572	AF2-051 E	2.9662	Adder	3.49
957931	AF2-087 C (Suspended)	0.5174	Adder	0.61
957932	AF2-087 E (Suspended)	0.7124	Adder	0.84
957941	AF2-088 C	0.5232	Adder	0.62
957942	AF2-088 E	0.3488	Adder	0.41
957981	AF2-092 C	1.3864	Adder	1.63
957982	AF2-092 E	0.9242	Adder	1.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.4414	Adder	0.52
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2943	Adder	0.35
958271	AF2-121 C	1.7502	Adder	2.06
958272	AF2-121 E	1.1668	Adder	1.37
958361	AF2-130 C	1.7045	Adder	2.01
958362	AF2-130 E	1.1363	Adder	1.34
958471	AF2-141	1.2266	Adder	1.44
958731	AF2-164 C O1	9.2893	Adder	10.93
958732	AF2-164 E O1	6.1929	Adder	7.29
958741	AF2-165 C	1.8326	Adder	2.16
958742	AF2-165 E	1.2218	Adder	1.44
958751	AF2-166 C	1.7045	Adder	2.01
958752	AF2-166 E	1.1363	Adder	1.34
959061	AF2-197 C O1	4.9259	Adder	5.8
959062	AF2-197 E O1	7.3889	Adder	8.69
959441	AF2-235 C	0.9354	Adder	1.1
959442	AF2-235 E	0.6236	Adder	0.73
959471	AF2-238 C	1.7521	Adder	2.06
959472	AF2-238 E	1.1680	Adder	1.37
959481	AF2-239 C	1.3267	Adder	1.56
959482	AF2-239 E	1.0638	Adder	1.25
959491	AF2-240 C	0.5444	Adder	0.64
959492	AF2-240 E	0.4638	Adder	0.55
959501	AF2-241 C	1.6276	Adder	1.91
959502	AF2-241 E	1.2531	Adder	1.47
959521	AF2-243 C	1.3745	Adder	1.62
959522	AF2-243 E	0.9163	Adder	1.08
959741	AF2-265 C	1.2556	Adder	1.48
959742	AF2-265 E	0.9344	Adder	1.1
959792	AF2-270 E	0.7199	Adder	0.85
959802	AF2-271 E	0.4533	Adder	0.53
959822	AF2-273 E	0.4364	Adder	0.51
960022	AF2-293 E	0.1300	Adder	0.15
960031	AF2-294 C	1.6011	Adder	1.88
960032	AF2-294 E	1.0674	Adder	1.26
960041	AF2-295 C	1.6416	Adder	1.93
960042	AF2-295 E	1.0944	Adder	1.29
960051	AF2-296 C	1.5185	Adder	1.79
960052	AF2-296 E	1.0123	Adder	1.19
960271	AF2-318 C	1.4343	Adder	1.69
960272	AF2-318 E	0.9562	Adder	1.12
960451	AF2-336 C	2.3106	Adder	2.72
960452	AF2-336 E	1.5404	Adder	1.81
960461	AF2-337 C	2.3106	Adder	2.72
960462	AF2-337 E	1.5404	Adder	1.81
960471	AF2-338 C	2.3106	Adder	2.72
960472	AF2-338 E	1.5404	Adder	1.81
960481	AF2-339 C	2.3106	Adder	2.72
960482	AF2-339 E	1.5404	Adder	1.81
960901	AF2-381 C	19.4652	50/50	19.4652
960902	AF2-381 E	10.2436	50/50	10.2436

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961141	AF2-405	1.4403	Adder	1.69
961151	AF2-406	10.8024	Adder	12.71
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	53.7208	Adder	63.2
961211	AF2-412	21.6116	Adder	25.43
961451	AF2-436	0.1623	Adder	0.19
961911	AG1-033 C	0.7710	50/50	0.7710
961912	AG1-033 E	0.4337	50/50	0.4337
961971	AG1-040 C	1.0995	Adder	2.44
961972	AG1-040 E	0.7330	Adder	1.63
961981	AG1-041 C	0.7322	Adder	1.63
961982	AG1-041 E	0.4882	Adder	1.08
962292	AG1-077 E	0.3970	Adder	0.88
962411	AG1-090 C O1	4.6381	Adder	10.3
962412	AG1-090 E O1	3.0921	Adder	6.86
962511	AG1-100 C	1.0931	Adder	2.43
962512	AG1-100 E	0.7288	Adder	1.62
962641	AG1-113	0.3509	Adder	0.78
962651	AG1-114	0.8126	Adder	1.8
962891	AG1-138 C	0.3576	Adder	0.79
962892	AG1-138 E	0.0188	Adder	0.04
962901	AG1-139 C	0.3845	Adder	0.85
962902	AG1-139 E	0.0202	Adder	0.04
962911	AG1-140 C	0.1635	Adder	0.36
962912	AG1-140 E	0.0745	Adder	0.17
962951	AG1-144 C	0.9276	Adder	2.06
962952	AG1-144 E	0.6184	Adder	1.37
963281	AG1-177 C O1	1.0495	Adder	2.33
963282	AG1-177 E O1	0.6997	Adder	1.55
963441	AG1-193 C	1.0618	Adder	2.36
963442	AG1-193 E	0.7079	Adder	1.57
963481	AG1-197 C	0.8260	Adder	1.83
963482	AG1-197 E	0.5507	Adder	1.22
963491	AG1-198 C	0.6297	Adder	1.4
963492	AG1-198 E	0.4198	Adder	0.93
963531	AG1-202 C	0.5992	Adder	1.33
963532	AG1-202 E	0.3087	Adder	0.69
963541	AG1-203 C	0.6451	Adder	1.43
963542	AG1-203 E	0.3473	Adder	0.77
963561	AG1-205 C	0.5282	Adder	1.17
963562	AG1-205 E	0.2844	Adder	0.63
963571	AG1-206 C	0.5006	Adder	1.11
963572	AG1-206 E	0.2696	Adder	0.6
963881	AG1-241 C	1.5662	50/50	1.5662
963882	AG1-241 E	0.8433	50/50	0.8433
963891	AG1-242 C	0.4359	Adder	0.97
963892	AG1-242 E	0.2347	Adder	0.52
963941	AG1-247 C	0.3741	Adder	0.83
963942	AG1-247 E	0.1985	Adder	0.44
963991	AG1-253 C	0.2453	Adder	0.54
963992	AG1-253 E	0.1181	Adder	0.26
964031	AG1-257 C	0.4849	Adder	1.08
964032	AG1-257 E	0.6776	Adder	1.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964041	AG1-258 C	0.4849	Adder	1.08
964042	AG1-258 E	0.6776	Adder	1.5
964191	AG1-280 C	1.1543	Adder	2.56
964192	AG1-280 E	0.7695	Adder	1.71
964201	AG1-281 C	1.1530	Adder	2.56
964202	AG1-281 E	0.7687	Adder	1.71
964341	AG1-296 C	0.4830	Adder	1.07
964342	AG1-296 E	0.2601	Adder	0.58
964391	AG1-301 C	0.9323	Adder	2.07
964392	AG1-301 E	0.6215	Adder	1.38
964411	AG1-303 C O1	2.4413	Adder	5.42
964412	AG1-303 E O1	1.6275	Adder	3.61
964451	AG1-308 C O1	0.6260	Adder	1.39
964452	AG1-308 E O1	0.8749	Adder	1.94
964701	AG1-333 C	0.3111	Adder	0.69
964702	AG1-333 E	0.0424	Adder	0.09
964751	AG1-338 C	0.4428	Adder	0.98
964752	AG1-338 E	0.0604	Adder	0.13
964761	AG1-339 C	0.4629	Adder	1.03
964762	AG1-339 E	0.0403	Adder	0.09
964771	AG1-340 C	0.4428	Adder	0.98
964772	AG1-340 E	0.0604	Adder	0.13
964911	AG1-355 C	7.8994	50/50	7.8994
964912	AG1-355 E	5.2663	50/50	5.2663
964921	AG1-356 C	2.1313	Adder	4.73
964922	AG1-356 E	1.4209	Adder	3.15
965121	AG1-377 C O1	0.9276	Adder	2.06
965122	AG1-377 E O1	0.6184	Adder	1.37
965131	AG1-378 C O1	0.9276	Adder	2.06
965132	AG1-378 E O1	0.6184	Adder	1.37
965171	AG1-382 C	1.1370	Adder	2.52
965172	AG1-382 E	0.7580	Adder	1.68
965201	AG1-385 C	1.1189	Adder	2.48
965202	AG1-385 E	0.3314	Adder	0.74
965221	AG1-387 C	1.1370	Adder	2.52
965222	AG1-387 E	0.7580	Adder	1.68
965241	AG1-389 C O1	1.1356	Adder	2.52
965242	AG1-389 E O1	0.7571	Adder	1.68
965251	AG1-390 C O1	1.1356	Adder	2.52
965252	AG1-390 E O1	0.7571	Adder	1.68
965261	AG1-391 C O1	1.1356	Adder	2.52
965262	AG1-391 E O1	0.7571	Adder	1.68
965271	AG1-392 C O1	2.2712	Adder	5.04
965272	AG1-392 E O1	1.5141	Adder	3.36
965301	AG1-395 C	1.1920	Adder	2.65
965302	AG1-395 E	0.3540	Adder	0.79
965861	AG1-455	3.1814	Adder	7.06
965881	AG1-457 C	2.8139	Adder	6.25
965882	AG1-457 E	1.8759	Adder	4.16
966041	AG1-473 C	1.6275	Adder	3.61
966042	AG1-473 E	1.0850	Adder	2.41
966121	AG1-481	1.4102	Adder	3.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966512	AG1-520 E	0.9786	50/50	0.9786
966771	AG1-548 C	10.0957	Adder	22.41
966772	AG1-548 E	3.0726	Adder	6.82
966783	AG1-549 BAT	1.9509	Merchant Transmission	1.9509
G-007A	G-007A	2.5605	Confirmed LTF	2.5605
VFT	VFT	7.3272	Confirmed LTF	7.3272
CALDERWOOD	CALDERWOOD	0.6670	Confirmed LTF	0.6670
PRAIRIE	PRAIRIE	3.6394	Confirmed LTF	3.6394
CHEOAH	CHEOAH	0.6702	Confirmed LTF	0.6702
CBM-N	CBM-N	1.5900	Confirmed LTF	1.5900
COTTONWOOD	COTTONWOOD	2.8770	Confirmed LTF	2.8770
HAMLET	HAMLET	0.7022	Confirmed LTF	0.7022
GIBSON	GIBSON	0.7813	Confirmed LTF	0.7813
BLUEG	BLUEG	2.4912	Confirmed LTF	2.4912
TRIMBLE	TRIMBLE	0.7991	Confirmed LTF	0.7991
CATAWBA	CATAWBA	0.4407	Confirmed LTF	0.4407

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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
167526123	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	923.0	193.01	194.61	DC	14.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.6646	50/50	0.6646
200805	26COLVER13 (Deactivation : 01/09/2020)	4.5894	50/50	4.5894
200809	26SITHE	2.0742	50/50	2.0742
200835	26ARN_Z1-066	1.3692	Adder	1.61
200837	26HOMER C1	35.7218	50/50	35.7218
200838	26HOMER C2	30.7825	50/50	30.7825
200839	26HOMER C3	32.5873	50/50	32.5873
200846	26FORWARD	0.1356	50/50	0.1356
200852	26WARR RDG	0.3980	Adder	0.47
200864	K-013 E	6.2294	50/50	6.2294
200883	Q-053 E	9.8263	Adder	11.56
200894	26K02	7.0491	Adder	8.29
202158	26CON.GEN1	0.1138	50/50	0.1138
203915	26BF_Z2-108	3.0808	Adder	3.62
203932	AA2-133 GEN	2.1346	Adder	2.51
203999	P-047 E	12.2344	Adder	14.39
235003	AC1-025 E	0.1776	Adder	0.21
236828	01GRAYMONT	0.4823	Adder	0.57
290086	Q-036 E	7.1437	Adder	8.4
292350	K-023	5.6310	Adder	6.62
292542	L-013 1	5.4770	Adder	6.44
293301	N-039 E	13.0930	Adder	15.4
293393	V3-030E	6.0349	Adder	7.1
293432	R-040 E	0.3081	Adder	0.36
293603	O-018 E	11.5711	Adder	13.61
293902	O-048 E	4.9293	Adder	5.8
294515	O38_P22	11.4564	Adder	13.48
294903	P-060 E	8.8350	Adder	10.39
296332	R-032 E	13.3513	Adder	15.71
913142	Y1-033 E OP1	4.4072	Adder	5.18
915951	Y3-092 FTIR	223.8400	Merchant Transmission	223.8400
916202	Z1-069 E	9.9831	Adder	11.74
919201	AA1-144 OP	19.3180	Adder	22.73
920341	AA2-132 (Withdrawn : 12/07/2020)	2.6210	Adder	3.08
921642	AA2-000	61.0711	Adder	71.85
930511	AB2-092	2.2424	Adder	2.64
931092	AB1-160 E	2.8523	Adder	3.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935191	AD1-154	3.8588	Adder	4.54
936421	AD2-055	4.6166	Adder	5.43
936991	AD2-133 C	3.2147	Adder	3.78
936992	AD2-133 E	14.7036	Adder	17.3
938351	AE1-053	1.7116	Adder	2.01
938881	AE1-116	0.9208	Adder	1.08
938951	AE1-123	3.0346	Adder	3.57
938993	AE1-128 C	15.6317	Adder	18.39
938994	AE1-128 E	10.4211	Adder	12.26
939171	AE1-147 C	1.4512	Adder	1.71
939172	AE1-147 E	0.9674	Adder	1.14
939291	AE1-160 C	2.2092	Adder	2.6
939292	AE1-160 E	1.2699	Adder	1.49
940201	AE2-001 C	1.4488	Adder	1.7
940202	AE2-001 E	0.9659	Adder	1.14
940681	AE2-055 C (Suspended)	1.4132	Adder	1.66
940682	AE2-055 E (Suspended)	0.9421	Adder	1.11
940861	AE2-074 C	2.7658	Adder	3.25
940862	AE2-074 E	3.6408	Adder	4.28
941191	AE2-113 C	11.0656	Adder	13.02
941192	AE2-113 E	11.9140	Adder	14.02
941231	AE2-117 C	1.9341	Adder	2.28
941232	AE2-117 E	1.2894	Adder	1.52
941241	AE2-118 C	2.0112	Adder	2.37
941242	AE2-118 E	1.3408	Adder	1.58
941261	AE2-120 C	1.4475	Adder	1.7
941262	AE2-120 E	0.9650	Adder	1.14
941271	AE2-121 C	0.7736	Adder	0.91
941272	AE2-121 E	0.5166	Adder	0.61
941321	AE2-126 C	1.9141	Adder	2.25
941322	AE2-126 E	1.2761	Adder	1.5
941331	AE2-129 C	2.0311	Adder	2.39
941332	AE2-129 E	1.3541	Adder	1.59
941351	AE2-131 C (Suspended)	2.0311	Adder	2.39
941352	AE2-131 E (Suspended)	1.3541	Adder	1.59
941421	AE2-139 C	3.8159	Adder	8.47
941422	AE2-139 E	2.5439	Adder	5.65
942121	AE2-224 C	12.8301	Adder	15.09
942122	AE2-224 E	8.5534	Adder	10.06
942351	AE2-248 C	1.1425	Adder	1.34
942352	AE2-248 E	0.7617	Adder	0.9
942361	AE2-249 C	1.7586	Adder	2.07
942362	AE2-249 E	1.1724	Adder	1.38
942491	AE2-262 C	6.5378	Adder	7.69
942492	AE2-262 E	4.3934	Adder	5.17
942501	AE2-263 C	6.1455	Adder	7.23
942502	AE2-263 E	4.1031	Adder	4.83
942511	AE2-264 C	7.8222	Adder	9.2
942512	AE2-264 E	5.2148	Adder	6.14
942811	AE2-299 C	5.3081	Adder	6.24
942812	AE2-299 E	21.2323	Adder	24.98
942961	AE2-316 C	6.2569	Adder	7.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942962	AE2-316 E	8.9224	Adder	10.5
943151	AE2-344 C	12.4284	Adder	14.62
943152	AE2-344 E	8.2856	Adder	9.75
943351	AF1-006 C	2.2417	Adder	2.64
943352	AF1-006 E	1.2610	Adder	1.48
943711	AF1-039 C O1	1.1659	Adder	1.37
943712	AF1-039 E O1	0.7773	Adder	0.91
943751	AF1-043	13.8498	Adder	16.29
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	1.5185	Adder	1.79
944002	AF1-068 E O1 (Withdrawn : 12/15/2020)	0.8542	Adder	1.0
944181	AF1-086 C O1	4.2272	Adder	4.97
944182	AF1-086 E O1	18.3905	Adder	21.64
944261	AF1-094 C	2.0435	Adder	2.4
944262	AF1-094 E	1.3623	Adder	1.6
944281	AF1-096 C	2.0874	Adder	2.46
944282	AF1-096 E	1.3916	Adder	1.64
944301	AF1-098 C	8.0804	Adder	9.51
944302	AF1-098 E	5.3870	Adder	6.34
944311	AF1-099 C	9.9243	Adder	11.68
944312	AF1-099 E	6.6162	Adder	7.78
944321	AF1-100 C	21.0745	Adder	24.79
944322	AF1-100 E	14.0496	Adder	16.53
944381	AF1-103 O1	3.4221	Adder	4.03
944391	AF1-104 O1	3.7072	Adder	4.36
944411	AF1-106 O1	2.8506	Adder	3.35
944471	AF1-112 C	1.4320	Adder	1.68
944472	AF1-112 E	0.9547	Adder	1.12
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	1.4211	Adder	1.67
944672	AF1-132 E O1 (Withdrawn : 12/15/2020)	0.9474	Adder	1.11
944691	AF1-134 C	2.2226	Adder	2.61
944692	AF1-134 E	1.4817	Adder	1.74
944751	AF1-140 C	2.0998	Adder	2.47
944752	AF1-140 E	1.3999	Adder	1.65
944771	AF1-142 C	15.8789	Adder	18.68
944772	AF1-142 E	10.5860	Adder	12.45
944781	AF1-143 C	10.2694	Adder	12.08
944782	AF1-143 E	5.4770	Adder	6.44
944881	AF1-153 C O1	1.7866	Adder	2.1
944882	AF1-153 E O1	1.1911	Adder	1.4
944901	AF1-155 C	1.7872	Adder	2.1
944902	AF1-155 E	1.1915	Adder	1.4
945021	AF1-167 C	1.1677	Adder	1.37
945022	AF1-167 E	0.7799	Adder	0.92
945051	AF1-170 C	8.4564	Adder	9.95
945052	AF1-170 E	5.6376	Adder	6.63
945451	AF1-210 C	1.2813	Adder	1.51
945452	AF1-210 E	0.8542	Adder	1.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945491	AF1-214 C (Withdrawn : 12/03/2020)	1.4476	Adder	1.7
945492	AF1-214 E (Withdrawn : 12/03/2020)	0.9651	Adder	1.14
945671	AF1-232 C (Withdrawn : 01/19/2021)	21.6677	Adder	25.49
945672	AF1-232 E (Withdrawn : 01/19/2021)	11.6672	Adder	13.73
945751	AF1-240 C O1	2.3153	Adder	2.72
945752	AF1-240 E O1	1.5435	Adder	1.82
946071	AF1-272 C O1	22.6670	50/50	22.6670
946072	AF1-272 E O1	15.1114	50/50	15.1114
946111	AF1-276 C	12.7727	Adder	15.03
946112	AF1-276 E	6.2911	Adder	7.4
946121	AF1-277 C	12.7727	Adder	15.03
946122	AF1-277 E	6.2911	Adder	7.4
946131	AF1-278 C	10.1877	Adder	11.99
946132	AF1-278 E	5.0633	Adder	5.96
946211	AF1-286 C	1.1545	Adder	1.36
946212	AF1-286 E	0.7839	Adder	0.92
946221	AF1-287 C	2.1338	Adder	2.51
946222	AF1-287 E	1.4226	Adder	1.67
946381	AF1-302 C	2.7323	Adder	3.21
946382	AF1-302 E	3.6430	Adder	4.29
946401	AF1-304 C	10.5218	Adder	12.38
946402	AF1-304 E	7.0145	Adder	8.25
946421	AF1-306 C	7.4222	Adder	8.73
946422	AF1-306 E	29.6889	Adder	34.93
946571	AF1-321 C O1	3.2539	50/50	3.2539
946572	AF1-321 E O1	2.1693	50/50	2.1693
946771	AF1-217 C	2.1338	Adder	2.51
946772	AF1-217 E	1.4226	Adder	1.67
957001	AF2-001 C O1	3.2539	50/50	3.2539
957002	AF2-001 E O1	2.1693	50/50	2.1693
957011	AF2-002 C O1	1.6270	50/50	1.6270
957012	AF2-002 E O1	1.0846	50/50	1.0846
957161	AF2-010 C	7.8411	Adder	9.22
957162	AF2-010 E	5.2842	Adder	6.22
957451	AF2-039 C	1.2786	Adder	1.5
957452	AF2-039 E	0.8524	Adder	1.0
957512	AF2-045 E	3.9422	Adder	4.64
957561	AF2-050 C	6.4150	Adder	7.55
957562	AF2-050 E	4.2767	Adder	5.03
957571	AF2-051 C	6.1800	Adder	7.27
957572	AF2-051 E	3.1836	Adder	3.75
957931	AF2-087 C (Suspended)	0.5746	Adder	0.68
957932	AF2-087 E (Suspended)	0.7912	Adder	0.93
957941	AF2-088 C	0.6156	Adder	0.72
957942	AF2-088 E	0.4104	Adder	0.48
957981	AF2-092 C	1.5593	Adder	1.83
957982	AF2-092 E	1.0395	Adder	1.22
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.4911	Adder	0.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.3274	Adder	0.39
958271	AF2-121 C	2.0311	Adder	2.39
958272	AF2-121 E	1.3541	Adder	1.59
958361	AF2-130 C	2.0649	Adder	2.43
958362	AF2-130 E	1.3766	Adder	1.62
958471	AF2-141	1.3692	Adder	1.61
958731	AF2-164 C O1	9.7993	Adder	11.53
958732	AF2-164 E O1	6.5329	Adder	7.69
958741	AF2-165 C	2.1235	Adder	2.5
958742	AF2-165 E	1.4157	Adder	1.67
958751	AF2-166 C	2.0649	Adder	2.43
958752	AF2-166 E	1.3766	Adder	1.62
959061	AF2-197 C O1	4.8988	Adder	5.76
959062	AF2-197 E O1	7.3483	Adder	8.65
959441	AF2-235 C	1.0437	Adder	1.23
959442	AF2-235 E	0.6958	Adder	0.82
959471	AF2-238 C	1.7410	Adder	2.05
959472	AF2-238 E	1.1607	Adder	1.37
959481	AF2-239 C	1.3189	Adder	1.55
959482	AF2-239 E	1.0575	Adder	1.24
959491	AF2-240 C	0.5388	Adder	0.63
959492	AF2-240 E	0.4589	Adder	0.54
959501	AF2-241 C	1.6106	Adder	1.89
959502	AF2-241 E	1.2400	Adder	1.46
959521	AF2-243 C	1.5927	Adder	1.87
959522	AF2-243 E	1.0618	Adder	1.25
959741	AF2-265 C	1.2477	Adder	1.47
959742	AF2-265 E	0.9286	Adder	1.09
959792	AF2-270 E	0.8079	Adder	0.95
959802	AF2-271 E	0.5015	Adder	0.59
959822	AF2-273 E	0.5133	Adder	0.6
960022	AF2-293 E	0.1411	Adder	0.17
960031	AF2-294 C	1.5805	Adder	1.86
960032	AF2-294 E	1.0537	Adder	1.24
960041	AF2-295 C	1.7872	Adder	2.1
960042	AF2-295 E	1.1915	Adder	1.4
960051	AF2-296 C	2.2226	Adder	2.61
960052	AF2-296 E	1.4817	Adder	1.74
960271	AF2-318 C	1.4259	Adder	1.68
960272	AF2-318 E	0.9506	Adder	1.12
960451	AF2-336 C	2.5989	Adder	3.06
960452	AF2-336 E	1.7326	Adder	2.04
960461	AF2-337 C	2.5989	Adder	3.06
960462	AF2-337 E	1.7326	Adder	2.04
960471	AF2-338 C	2.5989	Adder	3.06
960472	AF2-338 E	1.7326	Adder	2.04
960481	AF2-339 C	2.5989	Adder	3.06
960482	AF2-339 E	1.7326	Adder	2.04
960901	AF2-381 C	21.6798	50/50	21.6798
960902	AF2-381 E	11.4090	50/50	11.4090
961141	AF2-405	1.4253	Adder	1.68
961151	AF2-406	10.6896	Adder	12.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	52.8437	Adder	62.17
961211	AF2-412	21.3486	Adder	25.12
961451	AF2-436	0.1610	Adder	0.19
961911	AG1-033 C	0.8602	50/50	0.8602
961912	AG1-033 E	0.4838	50/50	0.4838
961971	AG1-040 C	1.1606	Adder	2.58
961972	AG1-040 E	0.7737	Adder	1.72
961981	AG1-041 C	0.8249	Adder	1.83
961982	AG1-041 E	0.5500	Adder	1.22
962292	AG1-077 E	0.4430	Adder	0.98
962411	AG1-090 C O1	5.3825	Adder	11.95
962412	AG1-090 E O1	3.5883	Adder	7.97
962511	AG1-100 C	1.1449	Adder	2.54
962512	AG1-100 E	0.7633	Adder	1.69
962641	AG1-113	0.3904	Adder	0.87
962651	AG1-114	0.9071	Adder	2.01
962891	AG1-138 C	0.4332	Adder	0.96
962892	AG1-138 E	0.0228	Adder	0.05
962901	AG1-139 C	0.4455	Adder	0.99
962902	AG1-139 E	0.0234	Adder	0.05
962911	AG1-140 C	0.1582	Adder	0.35
962912	AG1-140 E	0.0721	Adder	0.16
962951	AG1-144 C	1.0765	Adder	2.39
962952	AG1-144 E	0.7177	Adder	1.59
963281	AG1-177 C O1	1.0830	Adder	2.4
963282	AG1-177 E O1	0.7220	Adder	1.6
963441	AG1-193 C	1.1848	Adder	2.63
963442	AG1-193 E	0.7899	Adder	1.75
963481	AG1-197 C	0.8755	Adder	1.94
963482	AG1-197 E	0.5837	Adder	1.3
963491	AG1-198 C	0.6498	Adder	1.44
963492	AG1-198 E	0.4332	Adder	0.96
963531	AG1-202 C	0.6396	Adder	1.42
963532	AG1-202 E	0.3295	Adder	0.73
963541	AG1-203 C	0.7199	Adder	1.6
963542	AG1-203 E	0.3877	Adder	0.86
963561	AG1-205 C	0.5896	Adder	1.31
963562	AG1-205 E	0.3175	Adder	0.7
963571	AG1-206 C	0.5510	Adder	1.22
963572	AG1-206 E	0.2967	Adder	0.66
963881	AG1-241 C	1.7472	50/50	1.7472
963882	AG1-241 E	0.9408	50/50	0.9408
963891	AG1-242 C	0.6381	Adder	1.42
963892	AG1-242 E	0.3436	Adder	0.76
963941	AG1-247 C	0.3701	Adder	0.82
963942	AG1-247 E	0.1964	Adder	0.44
963991	AG1-253 C	0.2374	Adder	0.53
963992	AG1-253 E	0.1143	Adder	0.25
964031	AG1-257 C	0.5261	Adder	1.17
964032	AG1-257 E	0.7353	Adder	1.63
964041	AG1-258 C	0.5261	Adder	1.17
964042	AG1-258 E	0.7353	Adder	1.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964191	AG1-280 C	1.2954	Adder	2.88
964192	AG1-280 E	0.8636	Adder	1.92
964201	AG1-281 C	1.2937	Adder	2.87
964202	AG1-281 E	0.8624	Adder	1.91
964331	AG1-295 C	0.5652	Adder	1.25
964332	AG1-295 E	0.2999	Adder	0.67
964341	AG1-296 C	0.5250	Adder	1.17
964342	AG1-296 E	0.2827	Adder	0.63
964391	AG1-301 C	1.0124	Adder	2.25
964392	AG1-301 E	0.6750	Adder	1.5
964411	AG1-303 C O1	2.6203	Adder	5.82
964412	AG1-303 E O1	1.7469	Adder	3.88
964451	AG1-308 C O1	0.7292	Adder	1.62
964452	AG1-308 E O1	1.0191	Adder	2.26
964701	AG1-333 C	0.3071	Adder	0.68
964702	AG1-333 E	0.0419	Adder	0.09
964751	AG1-338 C	0.5014	Adder	1.11
964752	AG1-338 E	0.0684	Adder	0.15
964761	AG1-339 C	0.5242	Adder	1.16
964762	AG1-339 E	0.0456	Adder	0.1
964771	AG1-340 C	0.5014	Adder	1.11
964772	AG1-340 E	0.0684	Adder	0.15
964911	AG1-355 C	8.7681	50/50	8.7681
964912	AG1-355 E	5.8454	50/50	5.8454
964921	AG1-356 C	2.3765	Adder	5.28
964922	AG1-356 E	1.5843	Adder	3.52
965121	AG1-377 C O1	1.0765	Adder	2.39
965122	AG1-377 E O1	0.7177	Adder	1.59
965131	AG1-378 C O1	1.0765	Adder	2.39
965132	AG1-378 E O1	0.7177	Adder	1.59
965171	AG1-382 C	1.3685	Adder	3.04
965172	AG1-382 E	0.9123	Adder	2.03
965201	AG1-385 C	1.2176	Adder	2.7
965202	AG1-385 E	0.3606	Adder	0.8
965221	AG1-387 C	1.3685	Adder	3.04
965222	AG1-387 E	0.9123	Adder	2.03
965241	AG1-389 C O1	1.1303	Adder	2.51
965242	AG1-389 E O1	0.7535	Adder	1.67
965251	AG1-390 C O1	1.1303	Adder	2.51
965252	AG1-390 E O1	0.7535	Adder	1.67
965261	AG1-391 C O1	1.1303	Adder	2.51
965262	AG1-391 E O1	0.7535	Adder	1.67
965271	AG1-392 C O1	2.2606	Adder	5.02
965272	AG1-392 E O1	1.5070	Adder	3.35
965301	AG1-395 C	1.3833	Adder	3.07
965302	AG1-395 E	0.4109	Adder	0.91
965861	AG1-455	3.3735	Adder	7.49
965881	AG1-457 C	3.1370	Adder	6.96
965882	AG1-457 E	2.0913	Adder	4.64
966121	AG1-481	1.4083	Adder	3.13
966512	AG1-520 E	1.0846	50/50	1.0846
966771	AG1-548 C	10.3636	Adder	23.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
966772	AG1-548 E	3.1541	Adder	7.0
966781	AG1-549 C O1	45.4434	50/50	45.4434
966782	AG1-549 E O1	13.8306	50/50	13.8306
G-007A	G-007A	2.0523	Confirmed LTF	2.0523
VFT	VFT	5.9533	Confirmed LTF	5.9533
CALDERWOOD	CALDERWOOD	0.6247	Confirmed LTF	0.6247
PRAIRIE	PRAIRIE	3.3889	Confirmed LTF	3.3889
CHEOAH	CHEOAH	0.6281	Confirmed LTF	0.6281
CBM-N	CBM-N	1.3320	Confirmed LTF	1.3320
COTTONWOOD	COTTONWOOD	2.6880	Confirmed LTF	2.6880
HAMLET	HAMLET	0.6653	Confirmed LTF	0.6653
GIBSON	GIBSON	0.7267	Confirmed LTF	0.7267
BLUEG	BLUEG	2.3158	Confirmed LTF	2.3158
TRIMBLE	TRIMBLE	0.7429	Confirmed LTF	0.7429
CATAWBA	CATAWBA	0.4158	Confirmed LTF	0.4158

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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
167401176	235449	01CARLOS	AP	237310	01DANSMTN	AP	1	FE-P2-3-MP-138-160	breaker	182.0	121.01	121.96	DC	3.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.3755	50/50	0.3755
200834	26SW_E13_K22	0.0197	50/50	0.0197
200835	26ARN_Z1-066	1.8458	50/50	1.8458
200840	26DEEPCRK1	0.8682	50/50	0.8682
200841	26DEEPCRK2	0.8770	50/50	0.8770
200864	K-013 E	1.4729	Adder	1.73
200889	26STNY CRK	0.1474	50/50	0.1474
200890	26BF_G21_K23	0.1857	50/50	0.1857
200891	26CSLMN_L13	0.2148	50/50	0.2148
200892	26LOOKOUT	0.2293	50/50	0.2293
202225	26SCI_S29B	0.0395	50/50	0.0395
202652	26RGH_Y1-033	0.2719	50/50	0.2719
203915	26BF_Z2-108	4.1531	50/50	4.1531
235532	AA1-100 BAT	1.0857	Merchant Transmission	1.0857
237084	AD1-018 E (Suspended)	2.1204	50/50	2.1204
237089	AD1-018 C (Suspended)	1.2996	50/50	1.2996
292350	K-023	7.5910	50/50	7.5910
292542	L-013 1	7.3834	50/50	7.3834
293432	R-040 E	0.4153	50/50	0.4153
293902	O-048 E	6.6450	50/50	6.6450
294903	P-060 E	4.6171	50/50	4.6171
913142	Y1-033 E OP1	11.7274	50/50	11.7274
934443	AD1-068 C	7.1635	50/50	7.1635
934445	AD1-068 E	41.5677	50/50	41.5677
938351	AE1-053	2.3073	50/50	2.3073
938881	AE1-116	0.6258	50/50	0.6258
938993	AE1-128 C	4.6304	Adder	5.45
938994	AE1-128 E	3.0869	Adder	3.63
942361	AE2-249 C	0.5209	Adder	0.61
942362	AE2-249 E	0.3473	Adder	0.41
942901	AE2-309 C	3.2938	50/50	3.2938
942902	AE2-309 E	0.6287	50/50	0.6287
943301	AF1-001 C	3.9599	50/50	3.9599
943302	AF1-001 E	4.4168	50/50	4.4168
943711	AF1-039 C O1	3.1025	50/50	3.1025
943712	AF1-039 E O1	2.0683	50/50	2.0683
944781	AF1-143 C	13.8438	50/50	13.8438
944782	AF1-143 E	7.3834	50/50	7.3834
945671	AF1-232 C (Withdrawn : 01/19/2021)	12.4956	50/50	12.4956

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945672	AF1-232 E (Withdrawn : 01/19/2021)	6.7284	50/50	6.7284
946571	AF1-321 C O1	0.7599	Adder	0.89
946572	AF1-321 E O1	0.5066	Adder	0.6
957001	AF2-001 C O1	0.7599	Adder	0.89
957002	AF2-001 E O1	0.5066	Adder	0.6
957011	AF2-002 C O1	0.3800	Adder	0.45
957012	AF2-002 E O1	0.2533	Adder	0.3
957981	AF2-092 C	0.4315	Adder	0.51
957982	AF2-092 E	0.2877	Adder	0.34
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.3338	50/50	0.3338
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2225	50/50	0.2225
958471	AF2-141	1.8458	50/50	1.8458
959792	AF2-270 E	0.2393	Adder	0.28
960192	AF2-310 BAT	1.2876	Merchant Transmission	1.2876
960451	AF2-336 C	0.7192	Adder	0.85
960452	AF2-336 E	0.4795	Adder	0.56
960461	AF2-337 C	0.7192	Adder	0.85
960462	AF2-337 E	0.4795	Adder	0.56
960471	AF2-338 C	0.7192	Adder	0.85
960472	AF2-338 E	0.4795	Adder	0.56
960481	AF2-339 C	0.7192	Adder	0.85
960482	AF2-339 E	0.4795	Adder	0.56
960901	AF2-381 C	5.2190	Adder	6.14
960902	AF2-381 E	2.7465	Adder	3.23
961911	AG1-033 C	0.0880	Adder	0.2
961912	AG1-033 E	0.0495	Adder	0.11
961981	AG1-041 C	0.2165	Adder	0.48
961982	AG1-041 E	0.1444	Adder	0.32
962292	AG1-077 E	0.4676	50/50	0.4676
962501	AG1-099	0.8690	Adder	1.93
962641	AG1-113	0.5007	50/50	0.5007
962651	AG1-114	2.3073	50/50	2.3073
963541	AG1-203 C	0.7598	50/50	0.7598
963542	AG1-203 E	0.4091	50/50	0.4091
963561	AG1-205 C	1.4997	50/50	1.4997
963562	AG1-205 E	0.8076	50/50	0.8076
963881	AG1-241 C	0.1788	Adder	0.4
963882	AG1-241 E	0.0963	Adder	0.21
964911	AG1-355 C	1.0425	Adder	2.31
964912	AG1-355 E	0.6950	Adder	1.54
964921	AG1-356 C	2.6784	50/50	2.6784
964922	AG1-356 E	1.7856	50/50	1.7856
965881	AG1-457 C	6.4528	50/50	6.4528
965882	AG1-457 E	4.3019	50/50	4.3019
966512	AG1-520 E	0.1342	Adder	0.3
G-007A	G-007A	0.5994	Confirmed LTF	0.5994
VFT	VFT	1.6770	Confirmed LTF	1.6770
CALDERWOOD	CALDERWOOD	0.1088	Confirmed LTF	0.1088
PRAIRIE	PRAIRIE	0.4288	Confirmed LTF	0.4288
CHEOAH	CHEOAH	0.1106	Confirmed LTF	0.1106

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-N	CBM-N	0.3372	Confirmed LTF	0.3372
COTTONWOOD	COTTONWOOD	0.4095	Confirmed LTF	0.4095
HAMLET	HAMLET	0.1681	Confirmed LTF	0.1681
GIBSON	GIBSON	0.0835	Confirmed LTF	0.0835
BLUEG	BLUEG	0.2691	Confirmed LTF	0.2691
TRIMBLE	TRIMBLE	0.0857	Confirmed LTF	0.0857
CATAWBA	CATAWBA	0.0941	Confirmed LTF	0.0941

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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
167401206	235469	01GARRET	AP	235449	01CARLOS	AP	1	FE-P2-3-MP-138-150	breaker	206.0	115.67	116.54	DC	3.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.3877	50/50	0.3877
200834	26SW_E13_K22	0.0204	50/50	0.0204
200835	26ARN_Z1-066	1.9068	50/50	1.9068
200840	26DEEPCRK1	0.8964	50/50	0.8964
200841	26DEEPCRK2	0.9054	50/50	0.9054
200864	K-013 E	1.5251	Adder	1.79
200889	26STNY CRK	0.1525	50/50	0.1525
200890	26BF_G21_K23	0.1918	50/50	0.1918
200891	26CSLMN_L13	0.2219	50/50	0.2219
200892	26LOOKOUT	0.2369	50/50	0.2369
202225	26SCI_S29B	0.0408	50/50	0.0408
202652	26RGH_Y1-033	0.2808	50/50	0.2808
203915	26BF_Z2-108	4.2903	50/50	4.2903
235532	AA1-100 BAT	1.2210	50/50	1.2210
292350	K-023	7.8417	50/50	7.8417
292542	L-013 1	7.6272	50/50	7.6272
293432	R-040 E	0.4290	50/50	0.4290
293902	O-048 E	6.8645	50/50	6.8645
294903	P-060 E	4.7750	50/50	4.7750
913142	Y1-033 E OP1	12.1104	50/50	12.1104
934443	AD1-068 C	7.3952	50/50	7.3952
934445	AD1-068 E	42.9120	50/50	42.9120
938351	AE1-053	2.3835	50/50	2.3835
938881	AE1-116	0.6469	50/50	0.6469
938993	AE1-128 C	4.7932	Adder	5.64
938994	AE1-128 E	3.1955	Adder	3.76
942361	AE2-249 C	0.5392	Adder	0.63
942362	AE2-249 E	0.3595	Adder	0.42
942903	AE2-309 BAT	1.4234	50/50	1.4234
943301	AF1-001 C	4.0880	50/50	4.0880
943302	AF1-001 E	4.5597	50/50	4.5597
943711	AF1-039 C O1	3.2038	50/50	3.2038
943712	AF1-039 E O1	2.1359	50/50	2.1359
944781	AF1-143 C	14.3010	50/50	14.3010
944782	AF1-143 E	7.6272	50/50	7.6272
945671	AF1-232 C (Withdrawn : 01/19/2021)	12.9199	50/50	12.9199
945672	AF1-232 E (Withdrawn : 01/19/2021)	6.9569	50/50	6.9569
946571	AF1-321 C O1	0.7868	Adder	0.93
946572	AF1-321 E O1	0.5246	Adder	0.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957001	AF2-001 C O1	0.7868	Adder	0.93
957002	AF2-001 E O1	0.5246	Adder	0.62
957011	AF2-002 C O1	0.3934	Adder	0.46
957012	AF2-002 E O1	0.2623	Adder	0.31
957981	AF2-092 C	0.4468	Adder	0.53
957982	AF2-092 E	0.2979	Adder	0.35
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.3450	50/50	0.3450
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2300	50/50	0.2300
958471	AF2-141	1.9068	50/50	1.9068
959792	AF2-270 E	0.2477	Adder	0.29
960192	AF2-310 BAT	2.2200	50/50	2.2200
960451	AF2-336 C	0.7447	Adder	0.88
960452	AF2-336 E	0.4965	Adder	0.58
960461	AF2-337 C	0.7447	Adder	0.88
960462	AF2-337 E	0.4965	Adder	0.58
960471	AF2-338 C	0.7447	Adder	0.88
960472	AF2-338 E	0.4965	Adder	0.58
960481	AF2-339 C	0.7447	Adder	0.88
960482	AF2-339 E	0.4965	Adder	0.58
960901	AF2-381 C	5.4035	Adder	6.36
960902	AF2-381 E	2.8436	Adder	3.35
961911	AG1-033 C	0.0912	Adder	0.2
961912	AG1-033 E	0.0513	Adder	0.11
961981	AG1-041 C	0.2243	Adder	0.5
961982	AG1-041 E	0.1495	Adder	0.33
962292	AG1-077 E	0.4836	50/50	0.4836
962502	AG1-099 BAT	0.9298	Merchant Transmission	0.9298
962641	AG1-113	0.5175	50/50	0.5175
962651	AG1-114	2.3835	50/50	2.3835
963541	AG1-203 C	0.7858	50/50	0.7858
963542	AG1-203 E	0.4231	50/50	0.4231
963561	AG1-205 C	1.5493	50/50	1.5493
963562	AG1-205 E	0.8342	50/50	0.8342
963881	AG1-241 C	0.1852	Adder	0.41
963882	AG1-241 E	0.0997	Adder	0.22
964911	AG1-355 C	1.0795	Adder	2.4
964912	AG1-355 E	0.7197	Adder	1.6
964921	AG1-356 C	2.7693	50/50	2.7693
964922	AG1-356 E	1.8462	50/50	1.8462
965881	AG1-457 C	6.6669	50/50	6.6669
965882	AG1-457 E	4.4446	50/50	4.4446
966512	AG1-520 E	0.1390	Adder	0.31
G-007A	G-007A	0.5562	Confirmed LTF	0.5562
VFT	VFT	1.5609	Confirmed LTF	1.5609
CALDERWOOD	CALDERWOOD	0.1069	Confirmed LTF	0.1069
PRAIRIE	PRAIRIE	0.3823	Confirmed LTF	0.3823
CHEOAH	CHEOAH	0.1086	Confirmed LTF	0.1086
CBM-N	CBM-N	0.3180	Confirmed LTF	0.3180
COTTONWOOD	COTTONWOOD	0.3885	Confirmed LTF	0.3885
HAMLET	HAMLET	0.1773	Confirmed LTF	0.1773
GIBSON	GIBSON	0.0721	Confirmed LTF	0.0721

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
BLUEG	BLUEG	0.2326	Confirmed LTF	0.2326
TRIMBLE	TRIMBLE	0.0740	Confirmed LTF	0.0740
CATAWBA	CATAWBA	0.0977	Confirmed LTF	0.0977

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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
167401098	237310	01DANSMTN	AP	235504	01RIDGLY	AP	1	FE-P2-3-MP-138-160	breaker	182.0	152.68	153.64	DC	3.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUGH	0.3754	50/50	0.3754
200834	26SW_E13_K22	0.0197	50/50	0.0197
200835	26ARN_Z1-066	1.8452	50/50	1.8452
200840	26DEEPCRK1	0.8681	50/50	0.8681
200841	26DEEPCRK2	0.8769	50/50	0.8769
200864	K-013 E	1.4715	Adder	1.73
200889	26STNY CRK	0.1473	50/50	0.1473
200890	26BF_G21_K23	0.1856	50/50	0.1856
200891	26CSLMN_L13	0.2147	50/50	0.2147
200892	26LOOKOUT	0.2293	50/50	0.2293
202225	26SCI_S29B	0.0395	50/50	0.0395
202652	26RGH_Y1-033	0.2719	50/50	0.2719
203915	26BF_Z2-108	4.1517	50/50	4.1517
235532	AA1-100 BAT	1.0865	Merchant Transmission	1.0865
237084	AD1-018 E (Suspended)	2.1195	50/50	2.1195
237089	AD1-018 C (Suspended)	1.2991	50/50	1.2991
237312	01DANS_S-014	1.8203	50/50	1.8203
290229	S-014 E	46.1502	50/50	46.1502
292350	K-023	7.5884	50/50	7.5884
292542	L-013 1	7.3808	50/50	7.3808
293432	R-040 E	0.4152	50/50	0.4152
293902	O-048 E	6.6427	50/50	6.6427
294903	P-060 E	4.6141	50/50	4.6141
913142	Y1-033 E OP1	11.7250	50/50	11.7250
934443	AD1-068 C	7.1625	50/50	7.1625
934445	AD1-068 E	41.5623	50/50	41.5623
938351	AE1-053	2.3065	50/50	2.3065
938881	AE1-116	0.6255	50/50	0.6255
938993	AE1-128 C	4.6261	Adder	5.44
938994	AE1-128 E	3.0841	Adder	3.63
942361	AE2-249 C	0.5204	Adder	0.61
942362	AE2-249 E	0.3470	Adder	0.41
942901	AE2-309 C	3.2927	50/50	3.2927
942902	AE2-309 E	0.6285	50/50	0.6285
943301	AF1-001 C	3.9594	50/50	3.9594
943302	AF1-001 E	4.4163	50/50	4.4163
943711	AF1-039 C O1	3.1019	50/50	3.1019
943712	AF1-039 E O1	2.0679	50/50	2.0679
944781	AF1-143 C	13.8390	50/50	13.8390
944782	AF1-143 E	7.3808	50/50	7.3808

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945671	AF1-232 C (Withdrawn : 01/19/2021)	12.4873	50/50	12.4873
945672	AF1-232 E (Withdrawn : 01/19/2021)	6.7239	50/50	6.7239
946571	AF1-321 C O1	0.7591	Adder	0.89
946572	AF1-321 E O1	0.5061	Adder	0.6
957001	AF2-001 C O1	0.7591	Adder	0.89
957002	AF2-001 E O1	0.5061	Adder	0.6
957011	AF2-002 C O1	0.3795	Adder	0.45
957012	AF2-002 E O1	0.2530	Adder	0.3
957981	AF2-092 C	0.4311	Adder	0.51
957982	AF2-092 E	0.2874	Adder	0.34
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.3336	50/50	0.3336
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.2224	50/50	0.2224
958471	AF2-141	1.8452	50/50	1.8452
959792	AF2-270 E	0.2391	Adder	0.28
960451	AF2-336 C	0.7185	Adder	0.85
960452	AF2-336 E	0.4790	Adder	0.56
960461	AF2-337 C	0.7185	Adder	0.85
960462	AF2-337 E	0.4790	Adder	0.56
960471	AF2-338 C	0.7185	Adder	0.85
960472	AF2-338 E	0.4790	Adder	0.56
960481	AF2-339 C	0.7185	Adder	0.85
960482	AF2-339 E	0.4790	Adder	0.56
960901	AF2-381 C	5.2142	Adder	6.13
960902	AF2-381 E	2.7440	Adder	3.23
962292	AG1-077 E	0.4673	50/50	0.4673
962501	AG1-099	0.8683	Adder	1.93
962641	AG1-113	0.5004	50/50	0.5004
962651	AG1-114	2.3065	50/50	2.3065
963541	AG1-203 C	0.7594	50/50	0.7594
963542	AG1-203 E	0.4089	50/50	0.4089
963561	AG1-205 C	1.4992	50/50	1.4992
963562	AG1-205 E	0.8073	50/50	0.8073
964911	AG1-355 C	1.0414	Adder	2.31
964912	AG1-355 E	0.6943	Adder	1.54
964921	AG1-356 C	2.6769	50/50	2.6769
964922	AG1-356 E	1.7846	50/50	1.7846
965881	AG1-457 C	6.4505	50/50	6.4505
965882	AG1-457 E	4.3003	50/50	4.3003
966512	AG1-520 E	0.1341	Adder	0.3
G-007A	G-007A	0.5802	Confirmed LTF	0.5802
VFT	VFT	1.6254	Confirmed LTF	1.6254
CALDERWOOD	CALDERWOOD	0.1128	Confirmed LTF	0.1128
PRAIRIE	PRAIRIE	0.4494	Confirmed LTF	0.4494
CHEOAH	CHEOAH	0.1146	Confirmed LTF	0.1146
CBM-N	CBM-N	0.3276	Confirmed LTF	0.3276
COTTONWOOD	COTTONWOOD	0.4263	Confirmed LTF	0.4263
HAMLET	HAMLET	0.1727	Confirmed LTF	0.1727
GIBSON	GIBSON	0.0879	Confirmed LTF	0.0879
BLUEG	BLUEG	0.2830	Confirmed LTF	0.2830

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TRIMBLE	TRIMBLE	0.0902	Confirmed LTF	0.0902
CATAWBA	CATAWBA	0.0969	Confirmed LTF	0.0969

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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
166602443	964910	AG1-355 TAP	PENELEC	200734	26SCALP L	PENELEC	1	PN-P7-1-PN-230-001	tower	245.0	103.72	115.9	DC	29.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200813	26YOUUGH	0.2241	50/50	0.2241
200834	26SW_E13_K22	0.0596	50/50	0.0596
200835	26ARN_Z1-066	2.8383	50/50	2.8383
200840	26DEEPCRK1	0.1927	50/50	0.1927
200841	26DEEPCRK2	0.1946	50/50	0.1946
200846	26FORWARD	0.2364	50/50	0.2364
200864	K-013 E	10.8611	50/50	10.8611
200889	26STNY CRK	0.4605	50/50	0.4605
200890	26BF_G21_K23	0.2855	50/50	0.2855
200891	26CSLMN_L13	0.3303	50/50	0.3303
200892	26LOOKOUT	0.3526	50/50	0.3526
202225	26SCI_S29B	0.1193	50/50	0.1193
202652	26RGH_Y1-033	0.2159	50/50	0.2159
203915	26BF_Z2-108	6.3862	50/50	6.3862
292350	K-023	11.6726	50/50	11.6726
292542	L-013 1	11.3533	50/50	11.3533
293432	R-040 E	0.6386	50/50	0.6386
293902	O-048 E	10.2180	50/50	10.2180
294903	P-060 E	14.4211	50/50	14.4211
913142	Y1-033 E OP1	9.3096	50/50	9.3096
938351	AE1-053	3.5479	50/50	3.5479
938881	AE1-116	1.8901	50/50	1.8901
938993	AE1-128 C	18.2297	50/50	18.2297
938994	AE1-128 E	12.1531	50/50	12.1531
942361	AE2-249 C	2.0508	50/50	2.0508
942362	AE2-249 E	1.3672	50/50	1.3672
943301	AF1-001 C	0.4718	Adder	0.56
943302	AF1-001 E	0.5262	Adder	0.62
943711	AF1-039 C O1	2.4628	50/50	2.4628
943712	AF1-039 E O1	1.6419	50/50	1.6419
944781	AF1-143 C	21.2874	50/50	21.2874
944782	AF1-143 E	11.3533	50/50	11.3533
945671	AF1-232 C (Withdrawn : 01/19/2021)	38.5050	50/50	38.5050
945672	AF1-232 E (Withdrawn : 01/19/2021)	20.7334	50/50	20.7334
946571	AF1-321 C O1	6.1408	50/50	6.1408
946572	AF1-321 E O1	4.0938	50/50	4.0938
957001	AF2-001 C O1	6.1408	50/50	6.1408
957002	AF2-001 E O1	4.0938	50/50	4.0938
957011	AF2-002 C O1	3.0704	50/50	3.0704
957012	AF2-002 E O1	2.0469	50/50	2.0469

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957981	AF2-092 C	1.5036	50/50	1.5036
957982	AF2-092 E	1.0024	50/50	1.0024
958101	AF2-104 C (Withdrawn : 12/08/2020)	1.0081	50/50	1.0081
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.6720	50/50	0.6720
958471	AF2-141	2.8383	50/50	2.8383
959792	AF2-270 E	0.9421	50/50	0.9421
960451	AF2-336 C	2.5061	50/50	2.5061
960452	AF2-336 E	1.6707	50/50	1.6707
960461	AF2-337 C	2.5061	50/50	2.5061
960462	AF2-337 E	1.6707	50/50	1.6707
960471	AF2-338 C	2.5061	50/50	2.5061
960472	AF2-338 E	1.6707	50/50	1.6707
960481	AF2-339 C	2.5061	50/50	2.5061
960482	AF2-339 E	1.6707	50/50	1.6707
960901	AF2-381 C	33.2367	50/50	33.2367
960902	AF2-381 E	17.4908	50/50	17.4908
961981	AG1-041 C	1.2712	50/50	1.2712
961982	AG1-041 E	0.8475	50/50	0.8475
962292	AG1-077 E	1.4468	50/50	1.4468
962641	AG1-113	1.5121	50/50	1.5121
962651	AG1-114	3.5479	50/50	3.5479
963541	AG1-203 C	2.3511	50/50	2.3511
963542	AG1-203 E	1.2660	50/50	1.2660
963561	AG1-205 C	2.3061	50/50	2.3061
963562	AG1-205 E	1.2418	50/50	1.2418
964911	AG1-355 C	17.9013	50/50	17.9013
964912	AG1-355 E	11.9342	50/50	11.9342
964921	AG1-356 C	8.2162	50/50	8.2162
964922	AG1-356 E	5.4775	50/50	5.4775
965881	AG1-457 C	12.2232	50/50	12.2232
965882	AG1-457 E	8.1488	50/50	8.1488
966512	AG1-520 E	2.0469	50/50	2.0469
WEC	WEC	0.0447	Confirmed LTF	0.0447
LGEE	LGEE	0.0949	Confirmed LTF	0.0949
CPL	CPL	0.1276	Confirmed LTF	0.1276
CBM-W2	CBM-W2	1.3888	Confirmed LTF	1.3888
NY	NY	0.2411	Confirmed LTF	0.2411
TVA	TVA	0.2282	Confirmed LTF	0.2282
O-066	O-066	1.6287	Confirmed LTF	1.6287
SIGE	SIGE	0.0412	Confirmed LTF	0.0412
CBM-S2	CBM-S2	1.9001	Confirmed LTF	1.9001
CBM-S1	CBM-S1	0.0612	Confirmed LTF	0.0612
G-007	G-007	0.2467	Confirmed LTF	0.2467
MEC	MEC	0.2336	Confirmed LTF	0.2336
LAGN	LAGN	0.2818	Confirmed LTF	0.2818
CBM-W1	CBM-W1	1.8366	Confirmed LTF	1.8366

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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
166602438	965880	AG1-457 TAP	PENELEC	200746	26ROCKWOOD	PENELEC	1	PN-P7-1-PN-230-001	tower	179.0	108.5	114.56	DC	10.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200834	26SW_E13_K22	0.0404	50/50	0.0404
200835	26ARN_Z1-066	-4.1106	Adder	-4.84
200846	26FORWARD	0.1044	50/50	0.1044
200864	K-013 E	4.7966	50/50	4.7966
200888	26HIGHLAND	0.1443	50/50	0.1443
200889	26STNY CRK	0.3137	50/50	0.3137
200925	26R32	0.2262	50/50	0.2262
202225	26SCI_S29B	0.0808	50/50	0.0808
293603	O-018 E	5.8708	50/50	5.8708
294903	P-060 E	9.8259	50/50	9.8259
296332	R-032 E	6.7740	50/50	6.7740
917673	Z2-108 BAT	10.8810	50/50	10.8810
938352	AE1-053 BAT	6.0450	50/50	6.0450
938881	AE1-116	1.2798	50/50	1.2798
938993	AE1-128 C	12.5712	50/50	12.5712
938994	AE1-128 E	8.3808	50/50	8.3808
942361	AE2-249 C	1.4143	50/50	1.4143
942362	AE2-249 E	0.9428	50/50	0.9428
943301	AF1-001 C	-0.8054	Adder	-0.95
944751	AF1-140 C	1.1050	50/50	1.1050
944752	AF1-140 E	0.7367	50/50	0.7367
945671	AF1-232 C (Withdrawn : 01/19/2021)	26.1706	50/50	26.1706
945672	AF1-232 E (Withdrawn : 01/19/2021)	14.0918	50/50	14.0918
946571	AF1-321 C O1	2.5591	50/50	2.5591
946572	AF1-321 E O1	1.7061	50/50	1.7061
957001	AF2-001 C O1	2.5591	50/50	2.5591
957002	AF2-001 E O1	1.7061	50/50	1.7061
957011	AF2-002 C O1	1.2796	50/50	1.2796
957012	AF2-002 E O1	0.8530	50/50	0.8530
957981	AF2-092 C	1.1585	50/50	1.1585
957982	AF2-092 E	0.7723	50/50	0.7723
958101	AF2-104 C (Withdrawn : 12/08/2020)	0.6826	50/50	0.6826
958102	AF2-104 E (Withdrawn : 12/08/2020)	0.4551	50/50	0.4551
958472	AF2-141 BAT	12.0900	50/50	12.0900
959792	AF2-270 E	0.6497	50/50	0.6497
960451	AF2-336 C	1.9308	50/50	1.9308
960452	AF2-336 E	1.2872	50/50	1.2872

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960461	AF2-337 C	1.9308	50/50	1.9308
960462	AF2-337 E	1.2872	50/50	1.2872
960471	AF2-338 C	1.9308	50/50	1.9308
960472	AF2-338 E	1.2872	50/50	1.2872
960481	AF2-339 C	1.9308	50/50	1.9308
960482	AF2-339 E	1.2872	50/50	1.2872
960901	AF2-381 C	16.1695	50/50	16.1695
960902	AF2-381 E	8.5092	50/50	8.5092
961911	AG1-033 C	0.5102	50/50	0.5102
961912	AG1-033 E	0.2870	50/50	0.2870
961981	AG1-041 C	1.0866	50/50	1.0866
961982	AG1-041 E	0.7244	50/50	0.7244
962292	AG1-077 E	0.9841	50/50	0.9841
962641	AG1-113	1.0239	50/50	1.0239
962652	AG1-114 BAT	6.0450	50/50	6.0450
963541	AG1-203 C	1.5991	50/50	1.5991
963542	AG1-203 E	0.8611	50/50	0.8611
963881	AG1-241 C	1.0364	50/50	1.0364
963882	AG1-241 E	0.5581	50/50	0.5581
964191	AG1-280 C	0.4902	Adder	1.09
964192	AG1-280 E	0.3268	Adder	0.73
964201	AG1-281 C	0.4872	Adder	1.08
964202	AG1-281 E	0.3248	Adder	0.72
964751	AG1-338 C	0.5317	50/50	0.5317
964752	AG1-338 E	0.0725	50/50	0.0725
964761	AG1-339 C	0.5559	50/50	0.5559
964762	AG1-339 E	0.0483	50/50	0.0483
964771	AG1-340 C	0.5317	50/50	0.5317
964772	AG1-340 E	0.0725	50/50	0.0725
964911	AG1-355 C	6.5111	50/50	6.5111
964912	AG1-355 E	4.3407	50/50	4.3407
964921	AG1-356 C	5.5797	50/50	5.5797
964922	AG1-356 E	3.7198	50/50	3.7198
965881	AG1-457 C	11.5746	50/50	11.5746
965882	AG1-457 E	7.7164	50/50	7.7164
966512	AG1-520 E	0.8530	50/50	0.8530
G-007A	G-007A	1.0909	Confirmed LTF	1.0909
VFT	VFT	2.9993	Confirmed LTF	2.9993
CALDERWOOD	CALDERWOOD	0.1605	Confirmed LTF	0.1605
PRAIRIE	PRAIRIE	0.7594	Confirmed LTF	0.7594
CHEOAH	CHEOAH	0.1617	Confirmed LTF	0.1617
CBM-N	CBM-N	0.5844	Confirmed LTF	0.5844
COTTONWOOD	COTTONWOOD	0.6489	Confirmed LTF	0.6489
HAMLET	HAMLET	0.1981	Confirmed LTF	0.1981
GIBSON	GIBSON	0.1583	Confirmed LTF	0.1583
BLUEG	BLUEG	0.5086	Confirmed LTF	0.5086
TRIMBLE	TRIMBLE	0.1631	Confirmed LTF	0.1631
CATAWBA	CATAWBA	0.1186	Confirmed LTF	0.1186

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.

Queue Number	Project Name	Status
AA1-100	Warrior Run 138kV	In Service
AA1-144	East Towanda-Grover 230kV	Engineering and Procurement
AA2-000	N/A	N/A
AA2-132	Thompson 34.5kV	Withdrawn
AA2-133	Wyalusing 34.5kV	In Service
AB1-160	Gold-Sabinsville 115kV	In Service
AB2-092	Bergen 138kV	Partially in Service - Under Construction
AC1-025	Dale Summit	In Service
AD1-018	Carlos Jct - Plaza 34 kV	Suspended
AD1-068	Albright-Garrett 138 kV	Active
AD1-154	Timblin 34.5 kV	Active
AD2-055	Moshannon-East Towanda 230 kV	Active
AD2-112	Springdale CC II 138kV	Engineering and Procurement
AD2-133	Eagle Valley 115kV	Active
AE1-053	Meyersdale North	Active
AE1-054	Mill Run 25kV	Active
AE1-116	Somerset Windpower 23 kV	Active
AE1-123	Emlenton 34.5 kV	Engineering and Procurement
AE1-128	Bedford North-Wills Mounain 115 kV	Active
AE1-147	Bellefonte 46 kV	Engineering and Procurement
AE1-160	Venango 34.5 kV	Engineering and Procurement
AE2-001	Nittany-Zion 46 kV	Active
AE2-055	Shingletown-Boalsburg 46 kV	Suspended
AE2-074	Potter 46 kV	Active
AE2-113	Farmers Valley-Ridgeway 115 kV	Active
AE2-117	ABW Tap-Alexandria 46 kV	Active
AE2-118	ABW Tap-Williamsburg 46 kV	Active
AE2-120	Graymont-Zion 46 kV	Active
AE2-121	Milesburg-Tanney Junction 46 kV	Active
AE2-126	Dubois-Curwensville 34.5 kV	Engineering and Procurement
AE2-129	Philipsburg-Clarence 34.5 kV	Engineering and Procurement
AE2-131	Philipsburg-Karthaus 34.5	Suspended
AE2-139	East Towanda-Grover 230 kV	Active
AE2-224	Bearrock-Johnstown 230 kV	Active
AE2-248	Fillmore-Thompson Farm 46 kV	Active
AE2-249	Bedford North-Pennsylvania Hollow 23 kV	Engineering and Procurement
AE2-262	Moshannon-Milesburg 230 kV	Active
AE2-263	Moshannon-Milesburg 230 kV	Active
AE2-264	Altoona-Raystown 230 kV	Active

Queue Number	Project Name	Status
AE2-299	Erie East 230 kV	Active
AE2-309	Carlos Junction-Lonaconing 34.5 kV	Active
AE2-316	Brookville-Squab Hollow 138 kV	Active
AE2-344	Edinboro South-Venango Junction 115 kV	Active
AF1-001	Thayerville 34.5 kV	Engineering and Procurement
AF1-006	Fairview East 34.5 kV	Active
AF1-039	Listonburg-Highpoint 24.9 kV	Active
AF1-043	Moshannon-East Towanda 230 kV	Active
AF1-068	Boalsburg-Centre Hall 46 kV	Withdrawn
AF1-086	Madera-Westover South 115 kV	Active
AF1-094	Union City-Cambridge Springs 34.5 kV	Active
AF1-096	Titusville-Oil Creek 34.5 kV	Active
AF1-098	Four Mile Jct-Corry East 115 kV	Active
AF1-099	Moshannon-Milesburg 230 kV	Active
AF1-100	Shawville-Moshannon 230 kV	Active
AF1-103	Warren 34.5 kV	Active
AF1-104	Erie West 34.5 kV	Active
AF1-106	East Sayre 34.5 kV	Active
AF1-112	Centre Hall-Boalsburg 46 kV	Active
AF1-132	Shingletown-Boalsburg 46 kV	Withdrawn
AF1-134	Philipsburg-Madera 34.5 kV	Active
AF1-140	Claysburg 23 kV	Engineering and Procurement
AF1-142	Moshannon-Milesburg 230 kV	Active
AF1-143	Lick Run 115 kV	Active
AF1-153	Motion-Ridgeway 46 kV	Active
AF1-155	Paper City-Wilcox 46 kV	Engineering and Procurement
AF1-167	West Freedom-C&K Coal 25 kV	Active
AF1-170	Springboro-Venango Junction 115 kV	Active
AF1-210	Burma 23 kV	Engineering and Procurement
AF1-214	Nittany-Zion 46 kV	Withdrawn
AF1-217	Edinboro -Cambridge Springs 34.5 kV	Active
AF1-232	Allegheny-Somerset 115 kV	Withdrawn
AF1-240	Timblin 34.5 kV	Active
AF1-272	Lucerne 115 kV	Active
AF1-276	Lewis Run-Pierce Brook 230 kV	Active
AF1-277	Lewis Run-Pierce Brook 2 230 kV	Active
AF1-278	Lewis Run-Pierce Brook 3 230 kV	Active
AF1-286	East Sayre 34.5 kV II	Active
AF1-287	Edinboro South 34.5 kV II	Active
AF1-302	Brookville-Squab Hollow 138 kV	Active
AF1-304	Titusville-Grandview 115 kV	Active
AF1-306	Squab Hollow 230 kV	Active
AF1-321	Hooversville 115 kV I	Active
AF2-001	Hooversville 115 kV II	Active
AF2-002	Hooversville 115 kV III	Active
AF2-010	Union City-Titusville 115 kV	Active
AF2-039	Shawville-Clearfield 34.5 kV	Active
AF2-045	Cambria Nug 115 kV	Engineering and Procurement
AF2-050	Bearrock-Johnstown 230 kV	Active
AF2-051	Geneva 115 kV	Active
AF2-087	East Altoona-Pinecroft 12.47 kV	Suspended
AF2-088	Shawville-Clearfield 34.5 kV II	Active

Queue Number	Project Name	Status
AF2-092	Snake Spring-Bedford Area 23 kV	Active
AF2-104	Somerset 23 kV	Withdrawn
AF2-121	Philipsburg-Shawville 34.5 kV	Active
AF2-130	Wolfs Corners 34.5 kV	Active
AF2-141	Lick Run 115 kV	Active
AF2-164	Handsome Lake 345 kV	Active
AF2-165	Clark Summit-Emlenton 34.5 kV	Active
AF2-166	Clark Summit-Emlenton 34 kV	Active
AF2-197	East Towanda 115 kV	Active
AF2-235	Titusville-Oil Creek 34.5 kV	Active
AF2-238	Mansfield-South Troy 34.5 kV	Active
AF2-239	Wyalusing-Hollenback WRC 34.5 kV	Active
AF2-240	North Orwell 12.47 kV	Active
AF2-241	Athens-Milan 34.5 kV	Active
AF2-243	Clark Summit 34.5 kV	Active
AF2-265	South Troy-Athens 34.5 kV	Active
AF2-270	Bedford South RCB-Bedford Area 23 kV	Engineering and Procurement
AF2-271	Pemberton-Sinking Valley 12.47 kV	Engineering and Procurement
AF2-273	Sligo 25 kV	Engineering and Procurement
AF2-293	Beech Creek 12.47 kV	Active
AF2-294	Thompson 34.5 kV	Active
AF2-295	Wilcox-Paper City 46 kV	Active
AF2-296	Madera 34.5 kV	Active
AF2-310	Jennings-Hoyes Road 34.5 kV	Active
AF2-318	East Towanda-New Albany 34.5 kV	Active
AF2-336	Snake Spring 115 kV I	Active
AF2-337	Snake Spring 115 kV II	Active
AF2-338	Snake Spring 115 kV III	Active
AF2-339	Snake Spring 115 kV IV	Active
AF2-381	Bedford North-Central City West 115 kV	Active
AF2-405	East Sayre 34.5 kV III	Active
AF2-406	Sayre 115 kV	Active
AF2-411	Mainesburg 345 kV	Withdrawn
AF2-412	Mainesburg 115 kV	Active
AF2-436	Wyalusing 34.5 kV II	Engineering and Procurement
AG1-033	Scalp Level 23 kV	Active
AG1-040	Morgan Street-Mount Hope 34.5 kV	Active
AG1-041	Osterburg-Bedford North 23 kV	Active
AG1-077	Allegheny Tunnel 23 kV	Active
AG1-090	Philipsburg 115 kV	Active
AG1-099	Westernport 34.5 kV	Active
AG1-100	Venango-Saegertown 34.5 kV	Active
AG1-113	Somerset Windpower 22.86 kV	Active
AG1-114	Meyersdale North 115 kV	Active
AG1-138	Wolfs Corners 34.5 kV	Active
AG1-139	Clark Summit-Emlenton 34.5 kV	Active
AG1-140	Union City 34.5 kV	Active
AG1-144	Phillipsburg 34.5 kV	Active
AG1-177	Union City 34.5 kV	Active
AG1-193	Utica Junction 34.5 kV	Active
AG1-197	Morgan Street-Cochranon 34.5 kV	Active
AG1-198	Union City 34.5 kV	Active

Queue Number	Project Name	Status
AG1-202	Springboro 12.47 kV	Active
AG1-203	Reels Corner 23 kV	Active
AG1-205	Rockwood 23 kV	Active
AG1-206	Snyder Twp 34.5 kV	Active
AG1-241	Scalp Level 23 kV	Active
AG1-242	Beccaria 34.5 kV	Active
AG1-247	North Orwell 12.47 kV	Active
AG1-253	Erie East-Union City 34.5 kV	Active
AG1-257	Madisonburg Jct-Millheim 46 kV	Active
AG1-258	Madisonburg Jct-Millheim 46 kV	Active
AG1-280	Claysburg-Puzzletown 46 kV	Active
AG1-281	Claysburg-HCR Tap 46 kV	Active
AG1-295	Blairsville East 23 kV	Active
AG1-296	Snyder Township 34.5 kV	Active
AG1-301	Miller REC-Warrior Ridge 46 kV	Active
AG1-303	Geneva 115 kV	Active
AG1-308	Shawville-Philipsburg 115 kV	Active
AG1-333	Lake Como-Pine Mills 12.47 kV	Active
AG1-338	Curryville-RKB-Yellow Creek 23 kV I	Active
AG1-339	Curryville-RKB-Yellow Creek 23 kV II	Active
AG1-340	Curryville 23 kV	Active
AG1-355	Scalp Level-Hooversville 115 kV	Active
AG1-356	Somerset-Allegheny 115 kV	Active
AG1-377	Philipsburg 115 kV	Active
AG1-378	Philipsburg 115 kV	Active
AG1-382	SGC Tap-Reese REC 46 kV	Active
AG1-385	Motion-Ridgeway 46 kV	Active
AG1-387	Beth 33-Lilly 46 kV	Active
AG1-389	Gold 115 kV I	Active
AG1-390	Gold 115 kV II	Active
AG1-391	Gold 115 kV III	Active
AG1-392	Gold 115 kV IV	Active
AG1-395	Philipsburg-Karthaus 34.5 kV 2	Active
AG1-455	Springboro-Venango Junction 115 kV	Active
AG1-457	Somerset-Rockwood 115 kV	Active
AG1-473	Shingletown-Lewistown 230 kV	Active
AG1-481	Warren 34.5 kV	Active
AG1-514	Springdale CT III 138 kV	Active
AG1-520	Hooversville-Rockingham 23 kV	Active
AG1-548	Erie South-Union City 115 kV	Active
AG1-549	Shelocta 115 kV	Active
V3-030	St. Benedict-Patton 46kV	In Service
X3-003	Mehoopany II 115 kV	In Service
Y1-033	Penn Mar-Rock Wood 115kV	In Service
Y3-092	Erie West 345kV	Engineering and Procurement
Z1-066	Arnold 34.5kV	In Service
Z1-069	Gold-Sabinsville 115kV	In Service
Z2-108	Meyersdale North 115kV	In Service

11.8 Contingency Descriptions

Contingency Name	Contingency Definition
PN-P1-3-PN-500-003	CONTINGENCY 'PN-P1-3-PN-500-003' /* CONEMAUGH #1 500/230 KV XFMR OPEN BRANCH FROM BUS 200005 TO BUS 200912 CKT 3 /* CONEM-GH 500.00 26CONEMAGH 230.00 END
AP-P7-1-WPP-138-83	CONTINGENCY 'AP-P7-1-WPP-138-83' /* 61 DISCONNECT BRANCH FROM BUS 235617 TO BUS 235213 CKT 1 /* 01LOYALH2 138 01LUXOR 138 DISCONNECT BRANCH FROM BUS 235173 TO BUS 235618 CKT 1 /* 01EDGEWT 138 01LOYALH3 138 DISCONNECT BRANCH FROM BUS 235173 TO BUS 235596 CKT 1 /* 01EDGEWT 138 01VASC T 138 DISCONNECT BRANCH FROM BUS 235173 TO BUS 236469 CKT 1 /* 01EDGEWT 138 01EDGEWATR 25 DISCONNECT BRANCH FROM BUS 235253 TO BUS 235596 CKT 1 /* 01SOCIAL 138 01VASC T 138 DISCONNECT BRANCH FROM BUS 235264 TO BUS 235596 CKT 1 /* 01VASC 138 01VASC T 138 DISCONNECT BRANCH FROM BUS 235178 TO BUS 235264 CKT 1 /* 01ETHEL 138 01VASC 138 DISCONNECT BRANCH FROM BUS 235264 TO BUS 235975 CKT 1 /* 01VASC 138 01VASCO 25 END
FE-P2-2-MP-138-101_NON-A	CONTINGENCY 'FE-P2-2-MP-138-101_NON-A' /* ALBRIGHT-138-SOUTH DISCONNECT BRANCH FROM BUS 235120 TO BUS 235320 CKT 1 /* 01ALBRIG 138 01DENVER 138 DISCONNECT BRANCH FROM BUS 235120 TO BUS 235402 CKT 1 /* 01ALBRIG 138 01SNOW T 138 DISCONNECT BRANCH FROM BUS 235120 TO BUS 934440 CKT 1 /* 01ALBRIG 138 AD1- 068 TAP 138 DISCONNECT BRANCH FROM BUS 934440 TO BUS 235469 CKT 1 /* AD1-068 TAP 138 01GARRET 138 DISCONNECT BRANCH FROM BUS 235120 TO BUS 960650 CKT 1 /* 01ALBRIG 138 AF2- 356 TAP 138 DISCONNECT BRANCH FROM BUS 235120 TO BUS 235305 CKT 1 /* 01ALBRIG 138 01 106 J 138 END
FE-P1-2-MP-138-160_NON	CONTINGENCY 'FE-P1-2-MP-138-160_NON' /* ALBRIGHT - AD1-068 -GARRETT 138KV DISCONNECT BRANCH FROM BUS 235120 TO BUS 934440 CKT 1 /* 01ALBRIG 138 AD1- 068 TAP 138 DISCONNECT BRANCH FROM BUS 934440 TO BUS 235469 CKT 1 /* AD1-068 TAP 138 01GARRET 138 END

Contingency Name	Contingency Definition
FE-P2-3-MP-138-161	CONTINGENCY "'FE-P2-3-MP-138-161'" / 145 OPEN BRANCH FROM BUS 235120 TO BUS 235320 CKT 1 / 235120 01ALBRIG 138 235320 01DENVER 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235305 CKT 1 / 235120 01ALBRIG 138 235305 01 106 J 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 934440 CKT 1 / 235120 01ALBRIG 138 934440 AD1-068 TAP 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235402 CKT 1 / 235120 01ALBRIG 138 235402 01SNOW T 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 960650 CKT 1 / 235120 01ALBRIG 138 960650 AF2-356 TAP 138 1 OPEN BRANCH FROM BUS 235492 TO BUS 235518 CKT 1 / 235492 01MTZION 138 235518 01WESTVA 138 1 END
FE-P2-3-MP-138-160	CONTINGENCY "'FE-P2-3-MP-138-160'" / 144 OPEN BRANCH FROM BUS 235120 TO BUS 960650 CKT 1 / 235120 01ALBRIG 138 960650 AF2-356 TAP 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235305 CKT 1 / 235120 01ALBRIG 138 235305 01 106 J 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235320 CKT 1 / 235120 01ALBRIG 138 235320 01DENVER 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 934440 CKT 1 / 235120 01ALBRIG 138 934440 AD1-068 TAP 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235402 CKT 1 / 235120 01ALBRIG 138 235402 01SNOW T 138 1 OPEN BRANCH FROM BUS 235402 TO BUS 235403 CKT 1 / 235402 01SNOW T 138 235403 01SNWYCK 138 1 OPEN BRANCH FROM BUS 235402 TO BUS 235497 CKT 1 / 235402 01SNOW T 138 235497 01OAKPRK 138 1 OPEN BRANCH FROM BUS 235403 TO BUS 237273 CKT 1 / 235403 01SNWYCK 138 237273 01SNOW C 66.0 1 END
ATSI-P2-3-CEI-345-004D	CONTINGENCY 'ATSI-P2-3-CEI-345-004D' /* ERIE WEST 345KV BKR 8 DISCONNECT BRANCH FROM BUS 200599 TO BUS 200600 CKT 1 /* 26ERIE W 345 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BUS 200600 /* 26ERIE SO 345 DISCONNECT BUS 238547 /* 02AT 345 END

Contingency Name	Contingency Definition
PN-P1-2-PN-230-002	CONTINGENCY 'PN-P1-2-PN-230-002' /* HOMER CITY - KEYSTONE 230KV OR SHELOCTA 230/115 KV TRANSFORMER FAULT DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 DISCONNECT BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230 26KEYSTONE 230 DISCONNECT BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230 26SHELOCTA 115 DISCONNECT BUS 200795 /* 26SHELOCTA 230 END
ATSI-P2-3-CEI-345-004C	CONTINGENCY 'ATSI-P2-3-CEI-345-004C' /* ERIE WEST 345KV BKR 7 DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BUS 238547 /* 02AT 345 END
ATSI-P7-1-CEI-345-012	CONTINGENCY 'ATSI-P7-1-CEI-345-012' /* PERRY-EASTLAKE AND PERRY- NORTHFIELD 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 238684 TO BUS 239036 CKT 1 /* 02EASTLK 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 239358 TO BUS 239036 CKT 1 /* 02NFIELD 345 02PERRY 345 END
PN-P2-3-PN-230-0183-209	CONTINGENCY 'PN-P2-3-PN-230-0183-209' /* HOMER CITY 230 KV STUCK BREAKER 209 (SHELOCTA/SOUTH BUS) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202641 CKT S/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYS 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END
PN-P2-2-PN-500-001T	CONTINGENCY 'PN-P2-2-PN-500-001T' /* CONEMAUGH #1 500KV BUS DISCONNECT BRANCH FROM BUS 200005 TO BUS 200912 CKT 3 /* CONEM-GH 500 26CONEMAGH 230 END

Contingency Name	Contingency Definition
FE-P2-3-MP-138-150	CONTINGENCY "'FE-P2-3-MP-138-150'" / 134 OPEN BRANCH FROM BUS 235120 TO BUS 235305 CKT 1 / 235120 01ALBRIG 138 235305 01 106 J 138 1 OPEN BRANCH FROM BUS 235305 TO BUS 938800 CKT 1 / 235305 01 106 J 138 938800 AE1-106 TAP 138 1 OPEN BRANCH FROM BUS 235297 TO BUS 235305 CKT 1 / 235297 01HAZELT 138 235305 01 106 J 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 960650 CKT 1 / 235120 01ALBRIG 138 960650 AF2-356 TAP 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235402 CKT 1 / 235120 01ALBRIG 138 235402 01SNOW T 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 235320 CKT 1 / 235120 01ALBRIG 138 235320 01DENVER 138 1 OPEN BRANCH FROM BUS 235120 TO BUS 934440 CKT 1 / 235120 01ALBRIG 138 934440 AD1-068 TAP 138 1 END
PN-P2-3-PN-115-11A	CONTINGENCY 'PN-P2-3-PN-115-11A' /* CLAYSBURG 115KV SB DISCONNECT BRANCH FROM BUS 200505 TO BUS 200525 CKT 1 /* 26CLYSBURG 115 26SUMMIT 115 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200878 CKT 1 /* 26CLYSBURG 115 26KRAYN 115 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200516 CKT 1 /* 26CLYSBURG 115 26OSTRBURG 115 DISCONNECT BRANCH FROM BUS 200516 TO BUS 200564 CKT 1 /* 26OSTRBURG 115 26OSTRE SB 23 DISCONNECT BRANCH FROM BUS 200501 TO BUS 200516 CKT 1 /* 26BDFORD N 115 26OSTRBURG 115 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200506 CKT 1 /* 26CLYSBURG 115 26CURYVILE 115 DISCONNECT BRANCH FROM BUS 200506 TO BUS 200521 CKT 1 /* 26CURYVILE 115 26SAXTON 115 DISCONNECT BRANCH FROM BUS 200506 TO BUS 200552 CKT 1 /* 26CURYVILE 115 26CURY SUB 23 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200541 CKT 2 /* 26CLYSBURG 115 26CLAYSBURG 46 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200551 CKT 1 /* 26CLYSBURG 115 26CLAY SUB 23 END

Contingency Name	Contingency Definition
AP-P7-1-WPP-138-53A	CONTINGENCY 'AP-P7-1-WPP-138-53A' /* 38 DISCONNECT BRANCH FROM BUS 235132 TO BUS 235825 CKT 1 /* 01AL 4 138 01ALL L4T 138 DISCONNECT BRANCH FROM BUS 235132 TO BUS 235742 CKT 4E /* 01AL 4 138 01ALL L4 25 DISCONNECT BRANCH FROM BUS 235132 TO BUS 235742 CKT 4W /* 01AL 4 138 01ALL L4 25 DISCONNECT BRANCH FROM BUS 235134 TO BUS 235139 CKT 1 /* 01AL&D6 138 01AL&D6T 138 DISCONNECT BRANCH FROM BUS 235138 TO BUS 235139 CKT 1 /* 01AL 4J 138 01AL&D6T 138 DISCONNECT BRANCH FROM BUS 235138 TO BUS 235079 CKT 1 /* 01AL 4J 138 01SPGDL 138 DISCONNECT BRANCH FROM BUS 235138 TO BUS 235825 CKT 1 /* 01AL 4J 138 01ALL L4T 138 DISCONNECT BRANCH FROM BUS 235139 TO BUS 235204 CKT 1 /* 01AL&D6T 138 01KITTAN 138 DISCONNECT BRANCH FROM BUS 235121 TO BUS 235282 CKT 1 /* 01ARMSTR 138 01GAR RN 138 DISCONNECT BRANCH FROM BUS 235202 TO BUS 235240 CKT 1 /* 01KISKIV 138 01COLMBGPN 138 DISCONNECT BRANCH FROM BUS 235240 TO BUS 235282 CKT 1 /* 01COLMBGPN 138 01GAR RN 138 DISCONNECT BRANCH FROM BUS 235204 TO BUS 235282 CKT 1 /* 01KITTAN 138 01GAR RN 138 END
PN-P2_3-PN-230-0347-A	CONTINGENCY 'PN-P2_3-PN-230-0347-A' /* SEWARD FAULTED 230 KV BRK A (CONEMAUGH/HOMER CITY) OPEN BRANCH FROM BUS 200793 TO BUS 200767 CKT 1 /* 26SEWARD 2 230.00 26HOMER CT 230.00 OPEN BRANCH FROM BUS 200793 TO BUS 200912 CKT 1 /* 26SEWARD 2 230.00 26CONEMAGH 230.00 END
PN-P2-3-PN-115-11F	CONTINGENCY 'PN-P2-3-PN-115-11F' /* FUTURE CLAYSBURG 115KV SB (BEDFORD NORTH/KRAYN) DISCONNECT BUS 200516 /* 26OSTRBURG 115 DISCONNECT BUS 200564 /* 26OSTRE SB 23 DISCONNECT BRANCH FROM BUS 200505 TO BUS 200878 CKT 1 /* 26CLYSBURG 115 26KRAYN 115 END
APS-P2-2-WP-500-DRT19	CONTINGENCY 'APS-P2-2-WP-500-DRT19' /* KEYSTONE 500 KV BUS 1 FAULT OPEN BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500.00 26KEYSTONE 230.00 END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-0201A-20	CONTINGENCY 'PN-P2-3-PN-230-0201A-20' /* KEYSTONE STUCK 230 KV BREAKER 20 (SHELOCTA/#4 XFMR) DISCONNECT BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230 26KEYSTONE 230 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 TO BUS 200907 CKT 4/* KEYSTONE 500 26KEYSTONE 230 26KEYSTN#4 20.00 END
Base Case	
PN-P1-2-PN-230-025	CONTINGENCY 'PN-P1-2-PN-230-025' /* CONEMAUGH - SEWARD 230KV DISCONNECT BRANCH FROM BUS 200912 TO BUS 200793 CKT 1 /* 26CONEMAGH 230 26SEWARD 2 230 END
PN-P2-3-PN-230-0183-208	CONTINGENCY 'PN-P2-3-PN-230-0183-208' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERSVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 OPEN BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230.00 26SHELOCTA 230.00 END
PN-P1-2-PN-115-082	CONTINGENCY 'PN-P1-2-PN-115-082' /* HILLTOP - KRAYN - RACHEL HILL 115KV DISCONNECT BRANCH FROM BUS 200878 TO BUS 200790 CKT 1 /* 26KRAYN 115 26SALIX 115 DISCONNECT BRANCH FROM BUS 200790 TO BUS 200751 CKT 1 /* 26SALIX 115 26HILLCLAY 115 DISCONNECT BRANCH FROM BUS 200751 TO BUS 200752 CKT 1 /* 26HILLCLAY 115 26HILLTOP 115 DISCONNECT BRANCH FROM BUS 200751 TO BUS 200749 CKT 1 /* 26HILLCLAY 115 26RACHEL H 115 DISCONNECT BRANCH FROM BUS 200790 TO BUS 200785 CKT 1 /* 26SALIX 115 26SALIX 23 DISCONNECT BRANCH FROM BUS 200749 TO BUS 200784 CKT 1 /* 26RACHEL H 115 26RACHEL#1 23 DISCONNECT BUS 200790 /* 26SALIX 115 DISCONNECT BUS 200751 /* 26HILLCLAY 115 END

Contingency Name	Contingency Definition
PN-P7-1-PN-230-001	CONTINGENCY 'PN-P7-1-PN-230-001' /* HOMER CITY - HOOVERSVILLE 230KV & SEWARD - TOWER 51 115KV DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200796 TO BUS 200743 CKT 3 /* 26HOOVRSVL 230 26HOOVERSV 115 DISCONNECT BRANCH FROM BUS 200741 TO BUS 200742 CKT 1 /* 26SEWARD 115 26TOWER 51 115 END
AP-P1-3-PE-115-010	CONTINGENCY 'AP-P1-3-PE-115-010' /* GARRETT 138/115KV XFMR FAULT OPEN BRANCH FROM BUS 235469 TO BUS 235470 CKT 1 /* 01GARRET 138.00 01GARRET 115.00 END

12 Short Circuit Analysis

The following Breakers are overdutied:

None.

12.1 System Reinforcements - Short Circuit

No short circuit impacts were identified for this project.

13 Affected Systems

13.1 NYISO

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

14 Attachment 1: One Line Diagram