



**Generation Interconnection
Feasibility Study Report
for
Queue Project AG1-548
ERIE SOUTH-UNION CITY 115 KV
115 MW Capacity / 150 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.

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

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

3 General

The Interconnection Customer (IC), has proposed a Solar; Storage generating facility located in Erie County, Pennsylvania. The installed facilities will have a total capability of 150 MW with 115 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is October 31, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AG1-548
Project Name	ERIE SOUTH-UNION CITY 115 KV
State	Pennsylvania
County	Erie
Transmission Owner	MAIT – PENELEC Zone
MFO	150
MWE	150
MWC	115
Fuel	Solar; Storage
Basecase Study Year	2024

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

4 Point of Interconnection

The interconnection of the project will be accomplished by constructing a new 115 kV three breaker ring bus substation and looping the Erie South – Union City 115 kV line into the new station. The new substation will be located approximately 2.8 miles from Union City 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 Erie South Substation and Union City Substation.

Attachment 1 shows a one-line diagram of the proposed interconnection facilities for the AG1-548 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 AG1-548 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$10,700,000
Total System Network Upgrade Costs	\$586,643,719 ¹
Total Costs	\$597,343,719

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 at the Primary POI will be accomplished by constructing a new 115 kV three breaker ring bus substation and looping the Erie South – Union City 115 kV line into the new station. The new substation will be located approximately 2.8 miles from Union City 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 Erie South Substation and Union City Substation.

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

Description	Total Cost
Construct a new 115 kV three breaker ring bus interconnection substation.	\$6,070,000
Loop the Erie South – Union City 115 kV line into the new interconnection substation.	\$790,000
Upgrade relaying at Erie South Substation.	\$730,000
Upgrade relaying at Union City Substation.	\$730,000
Total Physical Interconnection Costs	\$10,700,000

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 facilities 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 AG1-548 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 AG1-548 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 AG1-548 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 AG1-548 was evaluated as a 150.0 MW (Capacity 115.0 MW) injection tapping the Erie South to Union City 115 kV line in the PENELEC area. Project AG1-548 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-548 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 PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
165837494	200633	26HAYNI E	115.0	PENELE C	200584	26GRANDV W	115.0	PENELE C	1	PN-P2-2-PN-115-037	bus	190.0	99.41	102.14	DC	5.19
166092761	200633	26HAYNI E	115.0	PENELE C	200584	26GRANDV W	115.0	PENELE C	1	PN-P2-3-PN-115-20A-A	breaker	190.0	99.41	102.14	DC	5.19
166092762	200633	26HAYNI E	115.0	PENELE C	200584	26GRANDV W	115.0	PENELE C	1	PN-P2-3-PN-115-20C	breaker	190.0	99.3	102.03	DC	5.19
167490628	235151	01BURMA	115.0	AP	235150	01BURMA	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	287.0	96.97	105.04	DC	23.16

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 PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPACT
164792716	200583	26PINEY	115.0	PENEL EC	235151	01BURMA	115.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	277.0	100.51	108.87	DC	23.16
16583746	200583	26PINEY	115.0	PENEL EC	200633	26HAYNI E	115.0	PENEL EC	1	PN-P2-2-PN-115-037	bus	190.0	113.97	116.78	DC	5.34
166092645	200583	26PINEY	115.0	PENEL EC	200633	26HAYNI E	115.0	PENEL EC	1	PN-P2-3-PN-115-20A-A	breaker	190.0	113.97	116.78	DC	5.34
166092646	200583	26PINEY	115.0	PENEL EC	200633	26HAYNI E	115.0	PENEL EC	1	PN-P2-3-PN-115-20C	breaker	190.0	113.86	116.68	DC	5.34
164792454	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-2-PN-230-007T	bus	1900.0	119.11	122.82	DC	70.36
164792658	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-3-PN-230-14CT	breaker	1900.0	119.17	122.88	DC	70.36
164792659	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-3-PN-230-14BT	breaker	1900.0	119.11	122.82	DC	70.36
164792936	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	single	1560.0	109.21	112.59	DC	52.8

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 CT LOADI NG %	POST PROJE CT LOADI NG %	AC D C	MW IMPA CT
164792937	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PJM_GEN_P1-1: UNIT02PERRG1	single	1900.0	101.2	103.98	DC	52.8
167541785	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004C	breaker	923.0	201.27	202.73	DC	29.23
167541786	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	923.0	199.5	200.88	DC	27.88
167772214	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-230-025	single	923.0	133.04	133.81	DC	15.81
167772215	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-3-PN-500-003	single	923.0	133.04	133.81	DC	15.81
167772216	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	single	809.0	121.25	121.93	DC	12.06
165179579	200769	26HOMER CY	345.0	PENEL EC	999325	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	827.0	151.66	152.98	DC	23.79
165179580	200769	26HOMER CY	345.0	PENEL EC	999325	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-345-001T	bus	827.0	150.69	152.01	DC	23.8
165179581	200769	26HOMER CY	345.0	PENEL EC	999325	26HOMER CT	1.0	PENEL EC	S	AP-P2-2-WP-230-005T	bus	827.0	102.95	103.75	DC	14.58
165179609	200769	26HOMER CY	345.0	PENEL EC	999324	26HOMER CT	1.0	PENEL EC	N	PN-P2-2-PN-345-002T	bus	854.0	145.0	146.27	DC	23.67
167541783	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	923.0	198.54	200.02	DC	30.01
167541784	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004C	breaker	923.0	197.44	198.98	DC	31.33
167772201	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-230-025	single	923.0	127.26	128.11	DC	17.25
167772202	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-3-PN-500-003	single	923.0	127.26	128.11	DC	17.25
167772203	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	single	809.0	113.36	114.1	DC	13.28
165179564	200810	26KEYSTON E	230.0	PENEL EC	999332	KEYSTONE	1.0	PENEL EC	4	APS-P2-2-WP-500-DRT19	bus	634.0	148.72	149.64	DC	12.85
165179565	200810	26KEYSTON E	230.0	PENEL EC	999332	KEYSTONE	1.0	PENEL EC	4	PN-P2-2-PN-500-001T	bus	634.0	129.61	130.41	DC	11.18
165180049	200810	26KEYSTON E	230.0	PENEL EC	999332	KEYSTONE	1.0	PENEL EC	4	AP-P7-1-WPP-138-53A	tower	634.0	104.86	105.54	DC	9.47
165180050	200810	26KEYSTON E	230.0	PENEL EC	999332	KEYSTONE	1.0	PENEL EC	4	ATSI-P7-1-CEI-345-012	tower	634.0	103.45	104.11	DC	9.26
165180051	200810	26KEYSTON E	230.0	PENEL EC	999332	KEYSTONE	1.0	PENEL EC	4	AP-P7-1-WPP-138-83	tower	634.0	103.24	103.88	DC	8.89
166092514	200927	26FOURMI LE	115.0	PENEL EC	200820	26ERIE SE	115.0	PENEL EC	1	PN-P2-3-PN-230-6G	breaker	245.0	145.1	146.65	DC	3.79
167541821	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	228.0	114.37	116.3	DC	9.77
168049835	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	228.0	102.37	105.89	DC	8.02
168049836	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	PN-P1-2-PN-345-107T	single	228.0	102.37	105.89	DC	8.02
167541805	235139	01AL&D6T	138.0	AP	235138	01AL 4J	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	126.18	128.82	DC	8.84
168049788	235139	01AL&D6T	138.0	AP	235138	01AL 4J	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	114.08	118.87	DC	7.24
168049789	235139	01AL&D6T	138.0	AP	235138	01AL 4J	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	114.08	118.87	DC	7.24

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 CT LOADI NG %	POST PROJE CT LOADI NG %	AC D C	MW IMPA CT
167490644	235152	01BUTLER	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	179.0	103.53	104.28	DC	2.33
167490347	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	179.0	240.03	243.55	DC	13.97
168049505	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	single	179.0	190.4	196.69	DC	11.23
168049506	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	190.4	196.69	DC	11.23
168049527	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	single	268.0	145.9	150.33	DC	11.84
168049528	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	268.0	145.9	150.33	DC	11.84
167490488	235204	01KITTAN	138.0	AP	235139	01AL&D6T	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	121.39	124.03	DC	8.84
168049801	235204	01KITTAN	138.0	AP	235139	01AL&D6T	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	109.56	114.35	DC	7.24
168049802	235204	01KITTAN	138.0	AP	235139	01AL&D6T	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	109.56	114.35	DC	7.24
167490359	235240	01COLMBGPN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	180.0	183.15	DC	10.58
168049551	235240	01COLMBGPN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	162.44	168.19	DC	8.69
168049552	235240	01COLMBGPN	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	162.44	168.19	DC	8.69
164792876	235248	01SHINGL	230.0	AP	966040	AG1-473TAP	230.0	AP	1	ATSI-P1-2-CEI-345-700T	single	621.0	132.91	134.6	DC	10.51
167490357	235282	01GAR RN	138.0	AP	235240	01COLMBGPN	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	182.31	185.47	DC	10.58
168049539	235282	01GAR RN	138.0	AP	235240	01COLMBGPN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	164.76	170.51	DC	8.69
168049540	235282	01GAR RN	138.0	AP	235240	01COLMBGPN	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	164.76	170.51	DC	8.69
164792722	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	ATSI-P2-4-CEI-138-125B	breaker	1891.0	103.69	107.23	DC	66.82
164793573	239036	02PERRY	345.0	ATSI	239334	02L.CENTE R	345.0	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	135.48	138.3	DC	46.84
164793579	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	127.39	130.11	DC	45.24
164792866	966040	AG1-473TAP	230.0	AP	200513	26LEWISTWN	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	621.0	136.26	137.96	DC	10.51
165179604	999324	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-2-PN-345-002T	bus	854.0	145.0	146.27	DC	23.67
165179584	999325	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	827.0	151.65	152.97	DC	23.79
165179585	999325	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-345-001T	bus	827.0	150.68	152.0	DC	23.8
165179586	999325	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	AP-P2-2-WP-230-005T	bus	827.0	102.95	103.75	DC	14.58
165179569	999332	KEYSTONE	1.0	PENEL EC	200011	KEYSTONE	500.0	PENEL EC	4	APS-P2-2-WP-500-DRT19	bus	634.0	148.24	149.17	DC	12.85
165179570	999332	KEYSTONE	1.0	PENEL EC	200011	KEYSTONE	500.0	PENEL EC	4	PN-P2-2-PN-500-001T	bus	634.0	129.14	129.94	DC	11.18

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 T LOADING %	POST PROJECTIONS T LOADING %	AC DC	MW IMPACT
165180064	999332	KEYSTONE	1.0	PENEL EC	200011	KEYSTONE	500.0	PENEL EC	4	AP-P7-1-WPP-138-53A	tower	634.0	104.37	105.05	DC	9.47
165180065	999332	KEYSTONE	1.0	PENEL EC	200011	KEYSTONE	500.0	PENEL EC	4	ATSI-P7-1-CEI-345-012	tower	634.0	102.96	103.62	DC	9.26
165180066	999332	KEYSTONE	1.0	PENEL EC	200011	KEYSTONE	500.0	PENEL EC	4	AP-P7-1-WPP-138-83	tower	634.0	102.75	103.39	DC	8.89

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 PROJECTIONS T LOADING %	POST PROJECTIONS T LOADING %	AC DC	MW IMPACT
167772465	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	781.0	102.83	109.78	DC	54.24
164793049	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHLLW	230.0	AP	1	PN-P1-2-PN-345-107T	operation	621.0	108.11	110.92	DC	17.49
164793050	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHLLW	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	621.0	108.11	110.92	DC	17.49
164793082	200583	26PINEY	115.0	PENEL EC	235151	01BURMA	115.0	AP	1	PN-P1-2-PN-345-107T	operation	277.0	99.24	107.7	DC	23.44
164793083	200583	26PINEY	115.0	PENEL EC	235151	01BURMA	115.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	277.0	99.24	107.7	DC	23.44
166310228	200583	26PINEY	115.0	PENEL EC	200633	26HAYNIE	115.0	PENEL EC	1	PN-P1-2-PN-345-003	operation	190.0	105.65	107.42	DC	3.36
166310253	200584	26GRANDV W	115.0	PENEL EC	200633	26HAYNIE	115.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	190.0	88.68	100.19	DC	21.87
166310254	200584	26GRANDV W	115.0	PENEL EC	200633	26HAYNIE	115.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	190.0	88.68	100.19	DC	21.87
166310193	200585	26TITUSVIL	115.0	PENEL EC	946400	AF1-304 TAP	115.0	PENEL EC	1	PN-P1-2-PN-115-022-A	operation	245.0	52.65	113.88	DC	150.0
164792931	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	operation	1560.0	130.12	134.54	DC	68.86
164792932	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PJM_GEN_P1-1: UNIT02PER RG1	operation	1900.0	118.38	122.0	DC	68.86
166310216	200633	26HAYNIE	115.0	PENEL EC	200583	26PINEY	115.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	190.0	96.84	108.62	DC	22.38

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 LOADI NG %	POST PROJE T LOADI NG %	AC DC	MW IMPA CT
166310217	200633	26HAYNIE	115.0	PENEL EC	200583	26PINEY	115.0	PENEL EC	1	PN-P1-2-PN-345-107T	operati on	190.0	96.84	108.62	DC	22.38
167772211	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-3-PN-500-003	operati on	923.0	181.98	183.01	DC	20.62
167772212	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-230-025	operati on	923.0	181.98	183.01	DC	20.62
167772213	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	operati on	809.0	163.24	164.14	DC	15.73
167772391	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P1-2-PN-230-002	operati on	1147.0	117.31	118.03	DC	18.03
167772198	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-230-025	operati on	923.0	182.52	183.63	DC	22.5
167772199	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-3-PN-500-003	operati on	923.0	182.52	183.63	DC	22.5
167772200	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operati on	809.0	160.06	161.04	DC	17.32
167772547	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-027	operati on	869.0	95.65	101.37	DC	49.69
167772548	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-008	operati on	869.0	95.65	101.37	DC	49.69
167772332	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PENEL EC	3	PN-P1-2-PN-230-002	operati on	1066.0	126.22	126.99	DC	18.03
168049833	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	228.0	113.72	115.79	DC	10.47
168049834	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	228.0	113.72	115.79	DC	10.47
168049786	235139	01AL&D6T	138.0	AP	235138	01AL 4J	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	122.03	124.85	DC	9.44
168049787	235139	01AL&D6T	138.0	AP	235138	01AL 4J	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	151.0	122.03	124.85	DC	9.44
164793103	235151	01BURMA	115.0	AP	200583	26PINEY	115.0	PENEL EC	1	PN-P1-2-PN-345-003	operati on	277.0	100.65	101.97	DC	3.67
168049912	235151	01BURMA	115.0	AP	235150	01BURMA	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	287.0	95.75	103.92	DC	23.44
168049913	235151	01BURMA	115.0	AP	235150	01BURMA	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	287.0	95.75	103.92	DC	23.44
168049923	235152	01BUTLER	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	179.0	102.04	102.82	DC	2.44
168049924	235152	01BUTLER	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	179.0	102.04	102.82	DC	2.44
168049503	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	179.0	238.88	242.57	DC	14.65
168049504	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	179.0	238.88	242.57	DC	14.65
168049525	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	268.0	183.41	189.18	DC	15.45
168049526	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	268.0	183.41	189.18	DC	15.45
168049799	235204	01KITTAN	138.0	AP	235139	01AL&D6T	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	117.49	120.3	DC	9.45
168049800	235204	01KITTAN	138.0	AP	235139	01AL&D6T	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	151.0	117.49	120.3	DC	9.45

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
168049549	235240	01COLMBGPN	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	operation	151.0	176.14	179.52	DC	11.33
168049550	235240	01COLMBGPN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	151.0	176.14	179.52	DC	11.33
168049537	235282	01GAR RN	138.0	AP	235240	01COLMBGPN	138.0	AP	1	PN-P1-2-PN-345-107T	operation	151.0	178.46	181.84	DC	11.33
168049538	235282	01GAR RN	138.0	AP	235240	01COLMBGPN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	151.0	178.46	181.84	DC	11.33
164793063	235971	01SQUABHLW	230.0	AP	235175	01ELKO	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	621.0	106.81	109.47	DC	16.48
164793064	235971	01SQUABHLW	230.0	AP	235175	01ELKO	230.0	AP	1	PN-P1-2-PN-345-107T	operation	621.0	106.81	109.47	DC	16.48
164793084	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	ATSI-P1-3-CEI-345-722	operation	1891.0	102.39	105.93	DC	66.9
166310044	946400	AF1-304TAP	115.0	PENEL EC	200584	26GRANDVW	115.0	PENEL EC	1	PN-P1-2-PN-115-022-A	operation	245.0	93.47	154.69	DC	150.0
166310241	957160	AF2-010TAP	115.0	PENEL EC	200585	26TITUSVIL	115.0	PENEL EC	1	PN-P1-2-PN-115-022-A	operation	245.0	43.02	104.24	DC	150.0
166310100	966770	AG1-548TAP	115.0	PENEL EC	200567	26ERIE SO.	115.0	PENEL EC	1	PN-P1-3-PN-115-070-A	operation	282.0	81.21	134.4	DC	150.0
166310101	966770	AG1-548TAP	115.0	PENEL EC	200567	26ERIE SO.	115.0	PENEL EC	1	PN-P1-2-PN-115-020-A-A	operation	282.0	81.21	134.4	DC	150.0
166310102	966770	AG1-548TAP	115.0	PENEL EC	200567	26ERIE SO.	115.0	PENEL EC	1	Base Case	operation	232.0	63.83	112.12	DC	112.04

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
166092645,165 837446,166092 646	4	26PINEY 115.0 kV - 26HAYNIE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0064A (1391) : Replace line trap at Piney Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AF2-F-0064B (1392) : Replace bus conductor at Piney Replace line relaying at Piney Project Type : FAC Cost : \$650,000 Time Estimate : 12.0 Months	\$850,000
164792716	3	26PINEY 115.0 kV - 01BURMA 115.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0023A (1240) : Replace 1200 A WT at Burma substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0023B (1241) : Replace 954 ACSR 45/7 SCCIR (bus, bus side switch leads, bus & line side WT leads) at Burma substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months PN-AG1-F-0003A (1372) : Replace line trap at Piney Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0003B (1373) : Replace substation conductor at Piney Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0003C (1526) : Replace circuit breaker at Piney Project Type : FAC Cost : \$900,000 Time Estimate : 12.0 Months	\$1,560,505
167541805,168 049788,168049 789	13	01AL&D6T 138.0 kV - 01AL 4J 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0002A (1173) : Replace 4/0 CU line exit at All Dam 6 Tap. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0002B (1174) : Reconductor 7.6 miles of 4/0 CU from All Dam 6 Tap to structure 84 (66 spans). Project Type : FAC Cost : \$19,928,632 Time Estimate : 42.0 Months	\$20,058,885

ID	Idx	Facility	Upgrade Description	Cost
165179585,165179584,165179586	26	26HOMER CT 1.0 kV - 26HOMER CT 230.0 kV Ckt S	PENELEC 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 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.	\$85,600,000
165179581,165179580,165179579	7	26HOMER CY 345.0 kV - 26HOMER CT 1.0 kV Ckt S		
165180049,165180050,165180051,165179565,165179564	10	26KEYSTONE 230.0 kV - KEYSTONE 1.0 kV Ckt 4		
165180066,165179569,165179570,165180064,165180065	27	KEYSTONE 1.0 kV - KEYSTONE 500.0 kV Ckt 4		
167541786,167541785,167772214,167772215,167772216	6	26HOMER CT 230.0 kV - 26SHELOCTA 230.0 kV Ckt 1		
165179604	25	26HOMER CT 1.0 kV - 26HOMER CT 230.0 kV Ckt N		
167541784,167772203,167541783,167772201,167772202	9	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
165179609	8	26HOMER CY 345.0 kV - 26HOMER CT 1.0 kV Ckt N		
167490359,168049551,168049552	18	01COLMBGPN 138.0 kV - 01KISKIV 138.0 kV Ckt 1	APS WP-AG1-F-0018A (1226) : Reconductor 3.7 miles of 4/0 CU. Project Type : FAC Cost : \$9,638,685 Time Estimate : 36.0 Months WP-AG1-F-0018B (1227) : Replace relays (RT) at Kiski Valley substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$10,094,569
168049836,168049835,167541821	12	01ARMSTR 138.0 kV - 01KITTAN 138.0 kV Ckt 1	APS WP-AG1-F-0001 (1172) : Replace relaying (WT, RT) at Kittanning substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$455,884

ID	Idx	Facility	Upgrade Description	Cost
167490488,168049801,168049802	17	01KITTAN 138.0 kV - 01AL&D6T 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0005A (1186) : Replace 4/0 CU line exit at All Dam 6 Tap. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0005B (1187) : Reconductor 6 miles of 4/0 CU from All Dam 6 Tap to Kittaning (49 spans). Project Type : FAC Cost : \$15,630,300 Time Estimate : 42.0 Months	\$15,760,552
164792659,164792658,164792454,164792936,164792937	5	26ERIE W 345.0 kV - 02AT 345.0 kV Ckt 1	<u>ATSI</u> CEI-001G (664) : Reconductor the ATSI owned portion of the Erie West-Ashtabula 3-point tap 345 kV Line. Project Type : Facility Cost : \$37,680,000 Time Estimate : 30.0 Months <u>PENELEC</u> PN-AG1-F-0005 (1376) : Reconductor approximately 7 miles of line. Project Type : FAC Cost : \$42,800,000 Time Estimate : 40.0 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.	\$80,480,000
164792722	21	02AT 345.0 kV - 02PERRY 345.0 kV Ckt 1	<u>ATSI</u> CEI-004A (699) : Replace the substation conductor at Perry on the Ashtabula - Eastlake - Perry 345 S8 line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-004B (700) : Replace the substation conductor at Perry on the Ashtabula - Eastlake - Perry 345 S8 line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-004C (701) : Reconductor the ATSI owned portion of the Perry-Ashtabula 3-point tap 345 kV Line. Project Type : Facility Cost : \$148,836,000 Time Estimate : 96.0 Months	\$149,212,800

ID	Idx	Facility	Upgrade Description	Cost
167490644	14	01BUTLER 138.0 kV - 01KARNSC 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0008A (1190) : Replace 336 ACSR, 954 ACSR, & 1024.5 ACAR bus conductor at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0008B (1191) : Replace 350 CU, 1.00 IPS CU, & 954 ACSR bus conductor at Butler substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0008C (1192) : Replace 336 ACSR line risers at Butler substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0008D (1193) : Replace 336 ACSR line risers at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0008E (1194) : Reconductor 15.6 miles of 336 ACSR on the Butler - Karns City 138 kV line (102 spans). Project Type : FAC Cost : \$40,638,780 Time Estimate : 60.0 Months	\$44,025,345
168049505,168049506,167490347	15	01KARNSC 138.0 kV - 01BUTLER 138.0 kV Ckt 1	WP-AG1-F-0008F (1195) : Replace 600 A line side and bus side disconnects at Butler substation. Project Type : FAC Cost : \$390,758 Time Estimate : 12.0 Months WP-AG1-F-0008G (1196) : Replace 350 CU wire to WT at Butler substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0008H (1197) : Replace relaying (WT, ZR) at Butler substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AG1-F-0008I (1198) : Replace relaying (RT, OR, WT, MT) at Karns City substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	

ID	Idx	Facility	Upgrade Description	Cost
168049505,168 049506,167490 347	15	01KARNSC 138.0 kV - 01BUTLER 138.0 kV Ckt 1	<u>Continued:</u> WP-AG1-F-0008J (1199) : Replace 1200 A circuit breaker at Karns City substation. Project Type : FAC Cost : \$781,515 Time Estimate : 12.0 Months WP-AG1-F-0008K (1200) : Replace 1200 A bus & line side disconnects at Karns City substation. Project Type : FAC Cost : \$521,010 Time Estimate : 12.0 Months WP-AG1-F-0008L (1201) : Replace 1272 ACSR 45/7 SCCIR bus taps at Butler Substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months	
166092514	11	26FOURMILE 115.0 kV - 26ERIE SE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0020A (1362) : Reconductor 4.62 miles of transmission line. Replace line drops at Four Mile and Erie South substations Project Type : FAC Cost : \$14,150,000 Time Estimate : 30.0 Months PN-AF2-F-0020B (1363) : Replace the substation conductor at Four Mile Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0001 (1364) : Replace bus and line side disconnect switches at Erie South Project Type : FAC Cost : \$500,000 Time Estimate : 12.0 Months	\$14,850,000
167490628	2	01BURMA 115.0 kV - 01BURMA 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0019B (1229) : Replace MT Project Type : FAC Cost : \$781,515 Time Estimate : 12.0 Months WP-AG1-F-0019C (1230) : Replace 954 ACSR 45/7 SCCIR Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months	\$911,768

ID	Idx	Facility	Upgrade Description	Cost
166092762,165 837494,166092 761	1	26HAYNIE 115.0 kV - 26GRANDVW 115.0 kV Ckt 1	<u>PENELEC</u> PN-AG1-F-0004A (1374) : Replace line trap at Grandview Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months PN-AG1-F-0004B (1375) : Replace substation conductor at Grandview Project Type : FAC Cost : \$200,000 Time Estimate : 12.0 Months	\$400,000
168049527,168 049528	16	01KISSNG 138.0 kV - 01KARNSC 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0003A (1175) : Reconductor 7.5 miles of 556.5 ACSR from Karns City to Kissinger Jct (47 spans). Project Type : FAC Cost : \$19,537,875 Time Estimate : 42.0 Months WP-AG1-F-0003B (1176) : Replace relaying (RT, WT, MT, ZR, OR) at Karns City substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AG1-F-0003C (1177) : Replace 954 ACSR & 1024.5 ACAR bus conductor at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0003D (1178) : Replace 1200 A circuit breaker at Karns City substation. Project Type : FAC Cost : \$911,768 Time Estimate : 12.0 Months WP-AG1-F-0003E (1179) : Replace 954 ACSR risers at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months	\$21,166,031

ID	Idx	Facility	Upgrade Description	Cost
164793573	22	02PERRY 345.0 kV - 02L.CENTER 345.0 kV Ckt 1	<u>ATSI</u> CEI-002B (665) : Upgrade existing substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002C (666) : Upgrade existing substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002D (667) : Reconductor the entire Leroy Center - Perry S6 345 kV Line (9.3 miles). Project Type : Facility Cost : \$58,404,000 Time Estimate : 54.0 Months CEI-002E (668) : Replace the WaveTrap on the Leroy Center - Perry 345 kV line at Perry. Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002F (669) : Replace the WaveTrap at Leroy Center on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002G (670) : Upgrade existing substation conductor at Leroy Center to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002H (671) : Upgrade existing substation conductor at Leroy Center to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-002I (751) : Upgrade the substation pipe at Perry to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months	\$59,722,800

ID	Idx	Facility	Upgrade Description	Cost
164793579	23	02PERRY 345.0 kV - 02EASTLK 345.0 kV Ckt 1	<u>ATSI</u> CEI-003B (673) : Replace the substation conductor at Eastlake on the Eastlake - Perry 345 S8 345 kV line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-003C (674) : Replace existing substation conductor at Eastlake on the Eastlake - Perry 345 kV line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-003D (675) : Reconductor the entire Eastlake - Perry S8 345 kV Line (~22 miles). Project Type : Facility Cost : \$40,192,000 Time Estimate : 30.0 Months CEI-003E (676) : Replace the WaveTrap at Perry on the Eastlake - Perry 345 kV line Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-003F (677) : Replace the WaveTrap at Eastlake on the Eastlake - Perry 345 kV line Project Type : Facility Cost : \$188,400 Time Estimate : 12.0 Months CEI-003G (678) : Protection Upgrade: replacing line CCVT, line tuner, and coax based on condition at Perry AND Eastlake on the EL-PY S8 345 kV line. Project Type : Facility Cost : \$1,130,400 Time Estimate : 12.0 Months	\$42,076,000

ID	Idx	Facility	Upgrade Description	Cost
164792876	19	01SHINGL 230.0 kV - AG1-473 TAP 230.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0028A (1251) : Replace 1033.5 ACSR 54/7 SCCIR (Bus taps, bus & line side disconnect leads, line risers) at Shingletown substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0028B (1252) : Replace 1200 A bus & line side disconnect switches at Shingletown substation. Project Type : FAC Cost : \$716,389 Time Estimate : 12.0 Months WP-AG1-F-0028C (1253) : Replace 2.00 IPS AL Pipe SCCIR (Line & bus side breaker risers) at Shingletown substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AG1-F-0028D (1254) : Replace circuit breaker and associated equipment at Shingletown on the Lewistown 230 kV terminal. Project Type : FAC Cost : \$1,042,020 Time Estimate : 12.0 Months	\$12,326,060
164792866	24	AG1-473 TAP 230.0 kV - 26LEWISTWN 230.0 kV Ckt 1	WP-AG1-F-0028E (1255) : Replace ZR relays at Shingletown substation. Project Type : FAC Cost : \$1,107,146 Time Estimate : 12.0 Months 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	
168049540,167490357,168049539	20	01GAR RN 138.0 kV - 01COLMBGPN 138.0 kV Ckt 1	<u>APS</u> WP-AG1-F-0017 (1225) : Reconductor 10.4 miles of 4/0 CU from Columbia Big Pine - Garretts Run Jct 138 kV (99 spans). Project Type : FAC Cost : \$27,092,520 Time Estimate : 48.0 Months	\$27,092,520
			TOTAL COST	\$586,643,719

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
166092762	200633	26HAYNIE	PENELEC	200584	26GRANDVW	PENELEC	1	PN-P2-3-PN-115-20C	breaker	190.0	99.3	102.03	DC	5.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
915952	Y3-092 NFTWR	24.4900	Merchant Transmission	24.4900
935191	AD1-154	1.1198	Adder	1.32
938951	AE1-123	1.4755	Adder	1.74
945751	AF1-240 C O1	0.6719	Adder	0.79
945752	AF1-240 E O1	0.4479	Adder	0.53
946403	AF1-304 BAT	62.9860	50/50	62.9860
958361	AF2-130 C	0.6320	Adder	0.74
958362	AF2-130 E	0.4213	Adder	0.5
958751	AF2-166 C	0.6320	Adder	0.74
958752	AF2-166 E	0.4213	Adder	0.5
962891	AG1-138 C	0.1326	Adder	0.29
962892	AG1-138 E	0.0070	Adder	0.02
966773	AG1-548 BAT	5.1865	50/50	5.1865
G-007A	G-007A	0.4052	Confirmed LTF	0.4052
VFT	VFT	1.0900	Confirmed LTF	1.0900
CALDERWOOD	CALDERWOOD	0.0432	Confirmed LTF	0.0432
NY	NY	0.0083	Confirmed LTF	0.0083
PRAIRIE	PRAIRIE	0.3203	Confirmed LTF	0.3203
CHEOAH	CHEOAH	0.0430	Confirmed LTF	0.0430
CBM-N	CBM-N	0.2004	Confirmed LTF	0.2004
COTTONWOOD	COTTONWOOD	0.2184	Confirmed LTF	0.2184
HAMLET	HAMLET	0.0254	Confirmed LTF	0.0254
GIBSON	GIBSON	0.0721	Confirmed LTF	0.0721
BLUEG	BLUEG	0.2222	Confirmed LTF	0.2222
TRIMBLE	TRIMBLE	0.0712	Confirmed LTF	0.0712
CATAWBA	CATAWBA	0.0199	Confirmed LTF	0.0199

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
167490628	235151	01BURMA	AP	235150	01BURMA	AP	1	ATSI-P2-3-CEI-345-004D	breaker	287.0	96.97	105.04	DC	23.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	2.6271	50/50	2.6271
200662	26SCRUB GR	4.2826	50/50	4.2826
200805	26COLVER13 (Deactivation : 01/09/2020)	2.3594	50/50	2.3594
293393	V3-030E	1.8565	Adder	2.18
915951	Y3-092 FTIR	82.6800	Merchant Transmission	82.6800
935191	AD1-154	7.4268	50/50	7.4268
938951	AE1-123	9.9248	50/50	9.9248
939291	AE1-160 C	3.7687	50/50	3.7687
939292	AE1-160 E	2.1663	50/50	2.1663
942811	AE2-299 C	1.9508	Adder	2.3
942812	AE2-299 E	7.8031	Adder	9.18
943151	AE2-344 C	5.7110	Adder	6.72
943152	AE2-344 E	3.8073	Adder	4.48
943351	AF1-006 C	0.9261	Adder	1.09
943352	AF1-006 E	0.5209	Adder	0.61
944181	AF1-086 C O1	1.7347	Adder	2.04
944182	AF1-086 E O1	7.5470	Adder	8.88
944261	AF1-094 C	1.9615	50/50	1.9615
944262	AF1-094 E	1.3077	50/50	1.3077
944281	AF1-096 C	3.5610	50/50	3.5610
944282	AF1-096 E	2.3740	50/50	2.3740
944301	AF1-098 C	3.0143	Adder	3.55
944302	AF1-098 E	2.0095	Adder	2.36
944391	AF1-104 O1	1.4494	Adder	1.71
944691	AF1-134 C	0.6621	Adder	0.78
944692	AF1-134 E	0.4414	Adder	0.52
945051	AF1-170 C	3.7059	Adder	4.36
945052	AF1-170 E	2.4706	Adder	2.91
945451	AF1-210 C	-1.4331	Adder	-1.69
945751	AF1-240 C O1	4.4561	50/50	4.4561
945752	AF1-240 E O1	2.9707	50/50	2.9707
946071	AF1-272 C O1	4.2019	Adder	4.94
946072	AF1-272 E O1	2.8013	Adder	3.3
946221	AF1-287 C	0.9882	Adder	1.16
946222	AF1-287 E	0.6588	Adder	0.78
946401	AF1-304 C	20.8752	50/50	20.8752
946402	AF1-304 E	13.9168	50/50	13.9168
946771	AF1-217 C	0.9882	Adder	1.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946772	AF1-217 E	0.6588	Adder	0.78
957161	AF2-010 C	7.8108	50/50	7.8108
957162	AF2-010 E	5.2638	50/50	5.2638
957571	AF2-051 C	4.0194	50/50	4.0194
957572	AF2-051 E	2.0706	50/50	2.0706
958361	AF2-130 C	5.5284	50/50	5.5284
958362	AF2-130 E	3.6856	50/50	3.6856
958741	AF2-165 C	4.2283	50/50	4.2283
958742	AF2-165 E	2.8189	50/50	2.8189
958751	AF2-166 C	5.5284	50/50	5.5284
958752	AF2-166 E	3.6856	50/50	3.6856
959441	AF2-235 C	1.7805	50/50	1.7805
959442	AF2-235 E	1.1870	50/50	1.1870
959521	AF2-243 C	3.1712	50/50	3.1712
959522	AF2-243 E	2.1142	50/50	2.1142
959823	AF2-273 BAT	0.2825	50/50	0.2825
960051	AF2-296 C	0.6621	Adder	0.78
960052	AF2-296 E	0.4414	Adder	0.52
961971	AG1-040 C	1.2893	50/50	1.2893
961972	AG1-040 E	0.8595	50/50	0.8595
962511	AG1-100 C	0.5311	Adder	1.18
962512	AG1-100 E	0.3541	Adder	0.79
962891	AG1-138 C	2.1883	50/50	2.1883
962892	AG1-138 E	0.1152	50/50	0.1152
962901	AG1-139 C	1.6737	50/50	1.6737
962902	AG1-139 E	0.0881	50/50	0.0881
962911	AG1-140 C	0.0582	Adder	0.13
962912	AG1-140 E	0.0265	Adder	0.06
963281	AG1-177 C O1	1.9615	50/50	1.9615
963282	AG1-177 E O1	1.3077	50/50	1.3077
963441	AG1-193 C	2.6722	50/50	2.6722
963442	AG1-193 E	1.7814	50/50	1.7814
963481	AG1-197 C	0.9886	50/50	0.9886
963482	AG1-197 E	0.6590	50/50	0.6590
963491	AG1-198 C	1.1769	50/50	1.1769
963492	AG1-198 E	0.7846	50/50	0.7846
963531	AG1-202 C	0.2716	Adder	0.6
963532	AG1-202 E	0.1399	Adder	0.31
963891	AG1-242 C	0.1901	Adder	0.42
963892	AG1-242 E	0.1023	Adder	0.23
963991	AG1-253 C	0.0872	Adder	0.19
963992	AG1-253 E	0.0420	Adder	0.09
964411	AG1-303 C O1	3.2155	50/50	3.2155
964412	AG1-303 E O1	2.1437	50/50	2.1437
965861	AG1-455	1.4784	Adder	3.28
966771	AG1-548 C	17.7537	50/50	17.7537
966772	AG1-548 E	5.4033	50/50	5.4033
G-007A	G-007A	0.5850	Confirmed LTF	0.5850
VFT	VFT	1.6061	Confirmed LTF	1.6061
CALDERWOOD	CALDERWOOD	0.1054	Confirmed LTF	0.1054
PRAIRIE	PRAIRIE	0.6225	Confirmed LTF	0.6225
CHEOAH	CHEOAH	0.1056	Confirmed LTF	0.1056

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-N	CBM-N	0.3144	Confirmed LTF	0.3144
COTTONWOOD	COTTONWOOD	0.4704	Confirmed LTF	0.4704
HAMLET	HAMLET	0.0970	Confirmed LTF	0.0970
GIBSON	GIBSON	0.1354	Confirmed LTF	0.1354
BLUEG	BLUEG	0.4305	Confirmed LTF	0.4305
TRIMBLE	TRIMBLE	0.1380	Confirmed LTF	0.1380
CATAWBA	CATAWBA	0.0640	Confirmed LTF	0.0640

11.6.3 Index 3

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
164792716	200583	26PINEY	PENELEC	235151	01BURMA	AP	1	ATSI-P2-3-CEI-345-004D	breaker	277.0	100.51	108.87	DC	23.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	2.6271	50/50	2.6271
200662	26SCRUB GR	4.2826	50/50	4.2826
200805	26COLVER13 (Deactivation : 01/09/2020)	2.3594	50/50	2.3594
293393	V3-030E	1.8565	Adder	2.18
915951	Y3-092 FTIR	82.6800	Merchant Transmission	82.6800
935191	AD1-154	7.4268	50/50	7.4268
938951	AE1-123	9.9248	50/50	9.9248
939291	AE1-160 C	3.7687	50/50	3.7687
939292	AE1-160 E	2.1663	50/50	2.1663
942811	AE2-299 C	1.9508	Adder	2.3
942812	AE2-299 E	7.8031	Adder	9.18
943151	AE2-344 C	5.7110	Adder	6.72
943152	AE2-344 E	3.8073	Adder	4.48
943351	AF1-006 C	0.9261	Adder	1.09
943352	AF1-006 E	0.5209	Adder	0.61
944181	AF1-086 C O1	1.7347	Adder	2.04
944182	AF1-086 E O1	7.5470	Adder	8.88
944261	AF1-094 C	1.9615	50/50	1.9615
944262	AF1-094 E	1.3077	50/50	1.3077
944281	AF1-096 C	3.5610	50/50	3.5610
944282	AF1-096 E	2.3740	50/50	2.3740
944301	AF1-098 C	3.0143	Adder	3.55
944302	AF1-098 E	2.0095	Adder	2.36
944391	AF1-104 O1	1.4494	Adder	1.71
944691	AF1-134 C	0.6621	Adder	0.78
944692	AF1-134 E	0.4414	Adder	0.52
945051	AF1-170 C	3.7059	Adder	4.36
945052	AF1-170 E	2.4706	Adder	2.91
945451	AF1-210 C	-1.4331	Adder	-1.69
945751	AF1-240 C O1	4.4561	50/50	4.4561
945752	AF1-240 E O1	2.9707	50/50	2.9707
946071	AF1-272 C O1	4.2019	Adder	4.94
946072	AF1-272 E O1	2.8013	Adder	3.3
946221	AF1-287 C	0.9882	Adder	1.16
946222	AF1-287 E	0.6588	Adder	0.78
946401	AF1-304 C	20.8752	50/50	20.8752
946402	AF1-304 E	13.9168	50/50	13.9168
946771	AF1-217 C	0.9882	Adder	1.16

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946772	AF1-217 E	0.6588	Adder	0.78
957161	AF2-010 C	7.8108	50/50	7.8108
957162	AF2-010 E	5.2638	50/50	5.2638
957571	AF2-051 C	4.0194	50/50	4.0194
957572	AF2-051 E	2.0706	50/50	2.0706
958361	AF2-130 C	5.5284	50/50	5.5284
958362	AF2-130 E	3.6856	50/50	3.6856
958741	AF2-165 C	4.2283	50/50	4.2283
958742	AF2-165 E	2.8189	50/50	2.8189
958751	AF2-166 C	5.5284	50/50	5.5284
958752	AF2-166 E	3.6856	50/50	3.6856
959441	AF2-235 C	1.7805	50/50	1.7805
959442	AF2-235 E	1.1870	50/50	1.1870
959521	AF2-243 C	3.1712	50/50	3.1712
959522	AF2-243 E	2.1142	50/50	2.1142
959823	AF2-273 BAT	0.2825	50/50	0.2825
960051	AF2-296 C	0.6621	Adder	0.78
960052	AF2-296 E	0.4414	Adder	0.52
961971	AG1-040 C	1.2893	50/50	1.2893
961972	AG1-040 E	0.8595	50/50	0.8595
962511	AG1-100 C	0.5311	Adder	1.18
962512	AG1-100 E	0.3541	Adder	0.79
962891	AG1-138 C	2.1883	50/50	2.1883
962892	AG1-138 E	0.1152	50/50	0.1152
962901	AG1-139 C	1.6737	50/50	1.6737
962902	AG1-139 E	0.0881	50/50	0.0881
962911	AG1-140 C	0.0582	Adder	0.13
962912	AG1-140 E	0.0265	Adder	0.06
963281	AG1-177 C O1	1.9615	50/50	1.9615
963282	AG1-177 E O1	1.3077	50/50	1.3077
963441	AG1-193 C	2.6722	50/50	2.6722
963442	AG1-193 E	1.7814	50/50	1.7814
963481	AG1-197 C	0.9886	50/50	0.9886
963482	AG1-197 E	0.6590	50/50	0.6590
963491	AG1-198 C	1.1769	50/50	1.1769
963492	AG1-198 E	0.7846	50/50	0.7846
963531	AG1-202 C	0.2716	Adder	0.6
963532	AG1-202 E	0.1399	Adder	0.31
963891	AG1-242 C	0.1901	Adder	0.42
963892	AG1-242 E	0.1023	Adder	0.23
963991	AG1-253 C	0.0872	Adder	0.19
963992	AG1-253 E	0.0420	Adder	0.09
964411	AG1-303 C O1	3.2155	50/50	3.2155
964412	AG1-303 E O1	2.1437	50/50	2.1437
965861	AG1-455	1.4784	Adder	3.28
966771	AG1-548 C	17.7537	50/50	17.7537
966772	AG1-548 E	5.4033	50/50	5.4033
G-007A	G-007A	0.5850	Confirmed LTF	0.5850
VFT	VFT	1.6061	Confirmed LTF	1.6061
CALDERWOOD	CALDERWOOD	0.1054	Confirmed LTF	0.1054
PRAIRIE	PRAIRIE	0.6225	Confirmed LTF	0.6225
CHEOAH	CHEOAH	0.1056	Confirmed LTF	0.1056

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-N	CBM-N	0.3144	Confirmed LTF	0.3144
COTTONWOOD	COTTONWOOD	0.4704	Confirmed LTF	0.4704
HAMLET	HAMLET	0.0970	Confirmed LTF	0.0970
GIBSON	GIBSON	0.1354	Confirmed LTF	0.1354
BLUEG	BLUEG	0.4305	Confirmed LTF	0.4305
TRIMBLE	TRIMBLE	0.1380	Confirmed LTF	0.1380
CATAWBA	CATAWBA	0.0640	Confirmed LTF	0.0640

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
166092646	200583	26PINEY	PENELEC	200633	26HAYNIE	PENELEC	1	PN-P2-3-PN-115-20C	breaker	190.0	113.86	116.68	DC	5.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
915952	Y3-092 NFTWR	25.2200	Merchant Transmission	25.2200
935191	AD1-154	1.1533	Adder	1.36
938951	AE1-123	1.5196	Adder	1.79
945751	AF1-240 C O1	0.6920	Adder	0.81
945752	AF1-240 E O1	0.4613	Adder	0.54
946403	AF1-304 BAT	64.8730	50/50	64.8730
966773	AG1-548 BAT	5.3420	50/50	5.3420
G-007A	G-007A	0.4172	Confirmed LTF	0.4172
VFT	VFT	1.1223	Confirmed LTF	1.1223
CALDERWOOD	CALDERWOOD	0.0447	Confirmed LTF	0.0447
NY	NY	0.0088	Confirmed LTF	0.0088
PRAIRIE	PRAIRIE	0.3306	Confirmed LTF	0.3306
CHEOAH	CHEOAH	0.0445	Confirmed LTF	0.0445
CBM-N	CBM-N	0.2064	Confirmed LTF	0.2064
COTTONWOOD	COTTONWOOD	0.2247	Confirmed LTF	0.2247
HAMLET	HAMLET	0.0260	Confirmed LTF	0.0260
GIBSON	GIBSON	0.0743	Confirmed LTF	0.0743
BLUEG	BLUEG	0.2292	Confirmed LTF	0.2292
TRIMBLE	TRIMBLE	0.0735	Confirmed LTF	0.0735
CATAWBA	CATAWBA	0.0207	Confirmed LTF	0.0207

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
164792659	200599	26ERIE W	PENELEC	238547	02AT	ATSI	1	PN-P2-3-PN-230-14BT	breaker	1900.0	119.11	122.82	DC	70.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200662	26SCRUB GR	4.6470	50/50	4.6470
200828	26HNSMLK 1	3.1097	50/50	3.1097
200829	26HNSMLK 2	3.1097	50/50	3.1097
200830	26HNSMLK 3	3.1097	50/50	3.1097
200831	26HNSMLK 4	3.1097	50/50	3.1097
200832	26HNSMLK 5	3.1097	50/50	3.1097
200849	26LAKVU GN	0.4122	50/50	0.4122
200894	26K02	8.3700	Adder	9.85
201201	26WRREN CT	3.3716	50/50	3.3716
203999	P-047 E	12.0202	Adder	14.14
235003	AC1-025 E	0.2648	Adder	0.31
236828	01GRAYMONT	0.7088	Adder	0.83
290086	Q-036 E	5.5896	Adder	6.58
915951	Y3-092 FTIR	592.0700	50/50	592.0700
916202	Z1-069 E	10.2699	Adder	12.08
920341	AA2-132 (Withdrawn : 12/07/2020)	2.8033	Adder	3.3
921642	AA2-000	76.6203	Adder	90.14
930511	AB2-092	2.8133	Adder	3.31
931092	AB1-160 E	2.9342	Adder	3.45
935191	AD1-154	3.3509	Adder	3.94
936421	AD2-055	5.7920	Adder	6.81
936991	AD2-133 C	2.5153	Adder	2.96
936992	AD2-133 E	11.5048	Adder	13.54
938951	AE1-123	3.6036	Adder	4.24
939171	AE1-147 C	2.1276	Adder	2.5
939172	AE1-147 E	1.4184	Adder	1.67
939291	AE1-160 C	4.7558	50/50	4.7558
939292	AE1-160 E	2.7336	50/50	2.7336
940201	AE2-001 C	2.1270	Adder	2.5
940202	AE2-001 E	1.4180	Adder	1.67
940681	AE2-055 C (Suspended)	2.1162	Adder	2.49
940682	AE2-055 E (Suspended)	1.4108	Adder	1.66
940861	AE2-074 C	2.9573	Adder	3.48
940862	AE2-074 E	3.8929	Adder	4.58
941191	AE2-113 C	13.0790	Adder	15.39
941192	AE2-113 E	14.0819	Adder	16.57
941261	AE2-120 C	2.1266	Adder	2.5
941262	AE2-120 E	1.4177	Adder	1.67
941271	AE2-121 C	1.1318	Adder	1.33
941272	AE2-121 E	0.7557	Adder	0.89

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941321	AE2-126 C	2.2829	Adder	2.69
941322	AE2-126 E	1.5219	Adder	1.79
941331	AE2-129 C	1.8517	Adder	2.18
941332	AE2-129 E	1.2345	Adder	1.45
941351	AE2-131 C (Suspended)	1.8517	Adder	2.18
941352	AE2-131 E (Suspended)	1.2345	Adder	1.45
942351	AE2-248 C	1.6965	Adder	2.0
942352	AE2-248 E	1.1310	Adder	1.33
942491	AE2-262 C	9.0134	Adder	10.6
942492	AE2-262 E	6.0570	Adder	7.13
942501	AE2-263 C	8.4726	Adder	9.97
942502	AE2-263 E	5.6568	Adder	6.66
942811	AE2-299 C	15.9571	50/50	15.9571
942812	AE2-299 E	63.8285	50/50	63.8285
942961	AE2-316 C	7.4990	Adder	8.82
942962	AE2-316 E	10.6936	Adder	12.58
943151	AE2-344 C	35.8014	50/50	35.8014
943152	AE2-344 E	23.8676	50/50	23.8676
943351	AF1-006 C	6.8550	50/50	6.8550
943352	AF1-006 E	3.8560	50/50	3.8560
943751	AF1-043	17.3761	Adder	20.44
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	2.2606	Adder	2.66
944002	AF1-068 E O1 (Withdrawn : 12/15/2020)	1.2716	Adder	1.5
944181	AF1-086 C O1	2.8177	Adder	3.31
944182	AF1-086 E O1	12.2585	Adder	14.42
944261	AF1-094 C	5.5565	50/50	5.5565
944262	AF1-094 E	3.7043	50/50	3.7043
944281	AF1-096 C	4.4936	50/50	4.4936
944282	AF1-096 E	2.9958	50/50	2.9958
944301	AF1-098 C	23.3381	50/50	23.3381
944302	AF1-098 E	15.5587	50/50	15.5587
944311	AF1-099 C	13.6823	Adder	16.1
944312	AF1-099 E	9.1216	Adder	10.73
944321	AF1-100 C	27.3513	Adder	32.18
944322	AF1-100 E	18.2342	Adder	21.45
944381	AF1-103 O1	7.4984	50/50	7.4984
944391	AF1-104 O1	11.3678	50/50	11.3678
944411	AF1-106 O1	2.9869	Adder	3.51
944471	AF1-112 C	2.1219	Adder	2.5
944472	AF1-112 E	1.4146	Adder	1.66
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	2.1186	Adder	2.49
944672	AF1-132 E O1 (Withdrawn : 12/15/2020)	1.4124	Adder	1.66
944691	AF1-134 C	1.8268	Adder	2.15
944692	AF1-134 E	1.2179	Adder	1.43
944771	AF1-142 C	21.8917	Adder	25.75
944772	AF1-142 E	14.5945	Adder	17.17
944881	AF1-153 C O1	2.3209	Adder	2.73

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944882	AF1-153 E O1	1.5473	Adder	1.82
944901	AF1-155 C	2.3189	Adder	2.73
944902	AF1-155 E	1.5459	Adder	1.82
945021	AF1-167 C	1.3325	Adder	1.57
945022	AF1-167 E	0.8899	Adder	1.05
945051	AF1-170 C	24.7138	50/50	24.7138
945052	AF1-170 E	16.4759	50/50	16.4759
945121	AF1-177	0.2958	50/50	0.2958
945451	AF1-210 C	1.4561	Adder	1.71
945452	AF1-210 E	0.9707	Adder	1.14
945491	AF1-214 C (Withdrawn : 12/03/2020)	2.1266	Adder	2.5
945492	AF1-214 E (Withdrawn : 12/03/2020)	1.4177	Adder	1.67
945751	AF1-240 C O1	2.0105	Adder	2.37
945752	AF1-240 E O1	1.3403	Adder	1.58
946111	AF1-276 C	15.5530	Adder	18.3
946112	AF1-276 E	7.6605	Adder	9.01
946121	AF1-277 C	15.5530	Adder	18.3
946122	AF1-277 E	7.6605	Adder	9.01
946131	AF1-278 C	12.4053	Adder	14.59
946132	AF1-278 E	6.1655	Adder	7.25
946211	AF1-286 C	1.2097	Adder	1.42
946212	AF1-286 E	0.8214	Adder	0.97
946221	AF1-287 C	6.1184	50/50	6.1184
946222	AF1-287 E	4.0790	50/50	4.0790
946381	AF1-302 C	3.2747	Adder	3.85
946382	AF1-302 E	4.3662	Adder	5.14
946401	AF1-304 C	20.4282	50/50	20.4282
946402	AF1-304 E	13.6188	50/50	13.6188
946421	AF1-306 C	9.9244	Adder	11.68
946422	AF1-306 E	39.6974	Adder	46.7
946771	AF1-217 C	6.1183	50/50	6.1183
946772	AF1-217 E	4.0789	50/50	4.0789
957161	AF2-010 C	21.1057	50/50	21.1057
957162	AF2-010 E	14.2234	50/50	14.2234
957451	AF2-039 C	1.3949	Adder	1.64
957452	AF2-039 E	0.9299	Adder	1.09
957571	AF2-051 C	15.1635	50/50	15.1635
957572	AF2-051 E	7.8115	50/50	7.8115
957941	AF2-088 C	0.6716	Adder	0.79
957942	AF2-088 E	0.4477	Adder	0.53
958271	AF2-121 C	1.8517	Adder	2.18
958272	AF2-121 E	1.2345	Adder	1.45
958361	AF2-130 C	2.8677	Adder	3.37
958362	AF2-130 E	1.9118	Adder	2.25
958731	AF2-164 C O1	17.6842	50/50	17.6842
958732	AF2-164 E O1	11.7894	50/50	11.7894
958741	AF2-165 C	4.0072	50/50	4.0072
958742	AF2-165 E	2.6714	50/50	2.6714
958751	AF2-166 C	2.8677	Adder	3.37
958752	AF2-166 E	1.9118	Adder	2.25
959441	AF2-235 C	2.2468	50/50	2.2468

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959442	AF2-235 E	1.4979	50/50	1.4979
959471	AF2-238 C	1.7638	Adder	2.08
959472	AF2-238 E	1.1759	Adder	1.38
959491	AF2-240 C	0.5645	Adder	0.66
959492	AF2-240 E	0.4809	Adder	0.57
959501	AF2-241 C	1.6876	Adder	1.99
959502	AF2-241 E	1.2993	Adder	1.53
959521	AF2-243 C	3.0054	50/50	3.0054
959522	AF2-243 E	2.0036	50/50	2.0036
959741	AF2-265 C	1.2640	Adder	1.49
959742	AF2-265 E	0.9407	Adder	1.11
959822	AF2-273 E	0.5842	Adder	0.69
960022	AF2-293 E	0.2068	Adder	0.24
960031	AF2-294 C	1.6904	Adder	1.99
960032	AF2-294 E	1.1270	Adder	1.33
960041	AF2-295 C	2.3189	Adder	2.73
960042	AF2-295 E	1.5459	Adder	1.82
960051	AF2-296 C	1.8268	Adder	2.15
960052	AF2-296 E	1.2179	Adder	1.43
961141	AF2-405	1.4934	Adder	1.76
961151	AF2-406	11.2009	Adder	13.18
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	46.9710	Adder	55.26
961211	AF2-412	20.2569	Adder	23.83
961971	AG1-040 C	5.8858	50/50	5.8858
961972	AG1-040 E	3.9238	50/50	3.9238
962411	AG1-090 C O1	4.9070	Adder	10.89
962412	AG1-090 E O1	3.2714	Adder	7.26
962511	AG1-100 C	6.1441	50/50	6.1441
962512	AG1-100 E	4.0961	50/50	4.0961
962891	AG1-138 C	0.6016	Adder	1.34
962892	AG1-138 E	0.0317	Adder	0.07
962901	AG1-139 C	1.5862	50/50	1.5862
962902	AG1-139 E	0.0835	50/50	0.0835
962911	AG1-140 C	0.8976	50/50	0.8976
962912	AG1-140 E	0.4089	50/50	0.4089
962951	AG1-144 C	0.9814	Adder	2.18
962952	AG1-144 E	0.6543	Adder	1.45
963281	AG1-177 C O1	5.5565	50/50	5.5565
963282	AG1-177 E O1	3.7043	50/50	3.7043
963441	AG1-193 C	4.6628	50/50	4.6628
963442	AG1-193 E	3.1086	50/50	3.1086
963481	AG1-197 C	4.3745	50/50	4.3745
963482	AG1-197 E	2.9164	50/50	2.9164
963491	AG1-198 C	3.3339	50/50	3.3339
963492	AG1-198 E	2.2226	50/50	2.2226
963531	AG1-202 C	3.5769	50/50	3.5769
963532	AG1-202 E	1.8426	50/50	1.8426
963571	AG1-206 C	0.6710	Adder	1.49
963572	AG1-206 E	0.3613	Adder	0.8
963891	AG1-242 C	0.5244	Adder	1.16
963892	AG1-242 E	0.2824	Adder	0.63
963941	AG1-247 C	0.3878	Adder	0.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963942	AG1-247 E	0.2058	Adder	0.46
963991	AG1-253 C	1.3464	50/50	1.3464
963992	AG1-253 E	0.6483	50/50	0.6483
964031	AG1-257 C	0.7782	Adder	1.73
964032	AG1-257 E	1.0876	Adder	2.41
964041	AG1-258 C	0.7782	Adder	1.73
964042	AG1-258 E	1.0876	Adder	2.41
964341	AG1-296 C	0.6136	Adder	1.36
964342	AG1-296 E	0.3304	Adder	0.73
964411	AG1-303 C O1	12.1308	50/50	12.1308
964412	AG1-303 E O1	8.0872	50/50	8.0872
964451	AG1-308 C O1	0.7027	Adder	1.56
964452	AG1-308 E O1	0.9821	Adder	2.18
964701	AG1-333 C	0.3285	Adder	0.73
964702	AG1-333 E	0.0448	Adder	0.1
965121	AG1-377 C O1	0.9814	Adder	2.18
965122	AG1-377 E O1	0.6543	Adder	1.45
965131	AG1-378 C O1	0.9814	Adder	2.18
965132	AG1-378 E O1	0.6543	Adder	1.45
965201	AG1-385 C	1.5817	Adder	3.51
965202	AG1-385 E	0.4685	Adder	1.04
965241	AG1-389 C O1	1.1740	Adder	2.61
965242	AG1-389 E O1	0.7826	Adder	1.74
965251	AG1-390 C O1	1.1740	Adder	2.61
965252	AG1-390 E O1	0.7826	Adder	1.74
965261	AG1-391 C O1	1.1740	Adder	2.61
965262	AG1-391 E O1	0.7826	Adder	1.74
965271	AG1-392 C O1	2.3479	Adder	5.21
965272	AG1-392 E O1	1.5653	Adder	3.47
965301	AG1-395 C	1.2611	Adder	2.8
965302	AG1-395 E	0.3746	Adder	0.83
965861	AG1-455	18.6018	50/50	18.6018
966041	AG1-473 C	2.9468	Adder	6.54
966042	AG1-473 E	1.9645	Adder	4.36
966121	AG1-481	5.8225	50/50	5.8225
966771	AG1-548 C	53.9430	50/50	53.9430
966772	AG1-548 E	16.4174	50/50	16.4174
G-007A	G-007A	9.7027	Confirmed LTF	9.7027
VFT	VFT	26.5804	Confirmed LTF	26.5804
CALDERWOOD	CALDERWOOD	1.2703	Confirmed LTF	1.2703
PRAIRIE	PRAIRIE	8.3922	Confirmed LTF	8.3922
CHEOAH	CHEOAH	1.2693	Confirmed LTF	1.2693
CBM-N	CBM-N	5.1816	Confirmed LTF	5.1816
COTTONWOOD	COTTONWOOD	6.0333	Confirmed LTF	6.0333
HAMLET	HAMLET	0.9893	Confirmed LTF	0.9893
GIBSON	GIBSON	1.8515	Confirmed LTF	1.8515
BLUEG	BLUEG	5.7791	Confirmed LTF	5.7791
TRIMBLE	TRIMBLE	1.8559	Confirmed LTF	1.8559
CATAWBA	CATAWBA	0.6891	Confirmed LTF	0.6891

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
167541785	200767	26HOMER CT	PENELEC	200795	26SHELOCTA	PENELEC	1	ATSI-P2-3-CEI-345-004C	breaker	923.0	201.27	202.73	DC	29.23

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
165179580	200769	26HOMER CY	PENELEC	999325	26HOMER CT	PENELEC	S	PN-P2-2-PN-345-001T	bus	827.0	150.69	152.01	DC	23.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	6.6128	Adder	7.78
200829	26HNSMLK 2	2.2201	50/50	2.2201
200830	26HNSMLK 3	2.2201	50/50	2.2201
200831	26HNSMLK 4	2.2201	50/50	2.2201
200832	26HNSMLK 5	2.2201	50/50	2.2201
200835	26ARN_Z1-066	-0.8363	Adder	-0.98
200838	26HOMER C2	49.5211	50/50	49.5211
200839	26HOMER C3	52.4246	50/50	52.4246
200894	26K02	6.6254	Adder	7.79
203932	AA2-133 GEN	2.4893	Adder	2.93
203999	P-047 E	15.7542	Adder	18.53
294573	P-028 E	12.7990	Adder	15.06
915951	Y3-092 FTIR	144.0500	Merchant Transmission	144.0500
916202	Z1-069 E	12.6261	Adder	14.85
917673	Z2-108 BAT	2.2138	Merchant Transmission	2.2138
919201	AA1-144 OP	22.1015	Adder	26.0
920341	AA2-132 (Withdrawn : 12/07/2020)	3.2815	Adder	3.86
921642	AA2-000	46.4350	Adder	54.63
930511	AB2-092	1.7050	Adder	2.01
931092	AB1-160 E	3.6075	Adder	4.24
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2299	Merchant Transmission	1.2299
938951	AE1-123	1.8984	Adder	2.23
939291	AE1-160 C	1.6655	Adder	1.96
939292	AE1-160 E	0.9573	Adder	1.13
940861	AE2-074 C	4.0233	50/50	4.0233
940862	AE2-074 E	5.2961	50/50	5.2961
941191	AE2-113 C	11.4779	Adder	13.5
941192	AE2-113 E	12.3580	Adder	14.54
941321	AE2-126 C	1.0862	Adder	1.28
941322	AE2-126 E	0.7241	Adder	0.85
941421	AE2-139 C	4.2758	Adder	9.49
941422	AE2-139 E	2.8505	Adder	6.33
942811	AE2-299 C	4.5867	Adder	5.4
942812	AE2-299 E	18.3469	Adder	21.58
942961	AE2-316 C	5.6904	Adder	6.69
942962	AE2-316 E	8.1145	Adder	9.55
943151	AE2-344 C	9.8255	Adder	11.56
943152	AE2-344 E	6.5503	Adder	7.71
943351	AF1-006 C	1.7037	Adder	2.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943352	AF1-006 E	0.9583	Adder	1.13
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.6156	Adder	1.9
944262	AF1-094 E	1.0771	Adder	1.27
944281	AF1-096 C	1.5737	Adder	1.85
944282	AF1-096 E	1.0491	Adder	1.23
944301	AF1-098 C	6.8275	Adder	8.03
944302	AF1-098 E	4.5516	Adder	5.35
944321	AF1-100 C	11.3373	Adder	13.34
944322	AF1-100 E	7.5582	Adder	8.89
944381	AF1-103 O1	3.2395	Adder	3.81
944391	AF1-104 O1	2.5481	Adder	3.0
944411	AF1-106 O1	3.5797	Adder	4.21
944751	AF1-140 C	-1.1164	Adder	-1.31
944881	AF1-153 C O1	1.3189	Adder	1.55
944882	AF1-153 E O1	0.8792	Adder	1.03
944901	AF1-155 C	1.3232	Adder	1.56
944902	AF1-155 E	0.8822	Adder	1.04
945021	AF1-167 C	1.0287	Adder	1.21
945022	AF1-167 E	0.6871	Adder	0.81
945051	AF1-170 C	6.3497	Adder	7.47
945052	AF1-170 E	4.2331	Adder	4.98
945451	AF1-210 C	1.1632	Adder	1.37
945452	AF1-210 E	0.7755	Adder	0.91
945673	AF1-232 BAT (Withdrawn : 01/19/2021)	2.8756	Merchant Transmission	2.8756
946111	AF1-276 C	17.9272	50/50	17.9272
946112	AF1-276 E	8.8298	50/50	8.8298
946121	AF1-277 C	17.9272	50/50	17.9272
946122	AF1-277 E	8.8298	50/50	8.8298
946131	AF1-278 C	14.2989	50/50	14.2989
946132	AF1-278 E	7.1067	50/50	7.1067
946211	AF1-286 C	1.4498	Adder	1.71
946212	AF1-286 E	0.9844	Adder	1.16
946221	AF1-287 C	1.6947	Adder	1.99
946222	AF1-287 E	1.1298	Adder	1.33
946381	AF1-302 C	2.4849	Adder	2.92
946382	AF1-302 E	3.3132	Adder	3.9
946401	AF1-304 C	7.7877	Adder	9.16
946402	AF1-304 E	5.1918	Adder	6.11
946421	AF1-306 C	5.4351	Adder	6.39
946422	AF1-306 E	21.7403	Adder	25.58
946771	AF1-217 C	1.6947	Adder	1.99
946772	AF1-217 E	1.1298	Adder	1.33
957161	AF2-010 C	6.1856	Adder	7.28
957162	AF2-010 E	4.1686	Adder	4.9
957513	AF2-045 BAT	2.4851	Merchant Transmission	2.4851
957571	AF2-051 C	5.2355	Adder	6.16
957572	AF2-051 E	2.6971	Adder	3.17
957931	AF2-087 C (Suspended)	-0.2639	Adder	-0.31
958361	AF2-130 C	1.4043	Adder	1.65
958362	AF2-130 E	0.9362	Adder	1.1
958472	AF2-141 BAT	2.4598	Merchant Transmission	2.4598

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958731	AF2-164 C O1	10.7312	Adder	12.62
958732	AF2-164 E O1	7.1541	Adder	8.42
958741	AF2-165 C	1.5832	Adder	1.86
958742	AF2-165 E	1.0555	Adder	1.24
958751	AF2-166 C	1.4043	Adder	1.65
958752	AF2-166 E	0.9362	Adder	1.1
959061	AF2-197 C O1	5.8074	Adder	6.83
959062	AF2-197 E O1	8.7111	Adder	10.25
959441	AF2-235 C	0.7868	Adder	0.93
959442	AF2-235 E	0.5246	Adder	0.62
959471	AF2-238 C	2.1682	Adder	2.55
959472	AF2-238 E	1.4455	Adder	1.7
959481	AF2-239 C	1.5591	Adder	1.83
959482	AF2-239 E	1.2501	Adder	1.47
959491	AF2-240 C	0.6766	Adder	0.8
959492	AF2-240 E	0.5763	Adder	0.68
959501	AF2-241 C	2.0225	Adder	2.38
959502	AF2-241 E	1.5572	Adder	1.83
959521	AF2-243 C	1.1874	Adder	1.4
959522	AF2-243 E	0.7916	Adder	0.93
959741	AF2-265 C	1.5539	Adder	1.83
959742	AF2-265 E	1.1564	Adder	1.36
959793	AF2-270 BAT	0.2156	Merchant Transmission	0.2156
959822	AF2-273 E	0.4607	Adder	0.54
960031	AF2-294 C	1.9788	Adder	2.33
960032	AF2-294 E	1.3192	Adder	1.55
960041	AF2-295 C	1.3232	Adder	1.56
960042	AF2-295 E	0.8822	Adder	1.04
960271	AF2-318 C	1.6856	Adder	1.98
960272	AF2-318 E	1.1237	Adder	1.32
960891	AF2-380 C	0.7497	Adder	0.88
960892	AF2-380 E	0.4998	Adder	0.59
961141	AF2-405	1.7898	Adder	2.11
961151	AF2-406	13.4238	Adder	15.79
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	85.5450	50/50	85.5450
961211	AF2-412	28.2129	Adder	33.19
961451	AF2-436	0.1877	Adder	0.22
961971	AG1-040 C	0.9431	Adder	2.09
961972	AG1-040 E	0.6288	Adder	1.4
962511	AG1-100 C	0.8992	Adder	2.0
962512	AG1-100 E	0.5995	Adder	1.33
962642	AG1-113 BAT	0.6859	Merchant Transmission	0.6859
962652	AG1-114 BAT	0.6518	Merchant Transmission	0.6518
962891	AG1-138 C	0.2946	Adder	0.65
962892	AG1-138 E	0.0155	Adder	0.03
962901	AG1-139 C	0.3322	Adder	0.74
962902	AG1-139 E	0.0175	Adder	0.04
962911	AG1-140 C	0.1367	Adder	0.3
962912	AG1-140 E	0.0623	Adder	0.14
963281	AG1-177 C O1	0.8563	Adder	1.9
963282	AG1-177 E O1	0.5708	Adder	1.27
963441	AG1-193 C	0.9866	Adder	2.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963442	AG1-193 E	0.6578	Adder	1.46
963481	AG1-197 C	0.7150	Adder	1.59
963482	AG1-197 E	0.4767	Adder	1.06
963491	AG1-198 C	0.5138	Adder	1.14
963492	AG1-198 E	0.3425	Adder	0.76
963531	AG1-202 C	0.4686	Adder	1.04
963532	AG1-202 E	0.2414	Adder	0.54
963571	AG1-206 C	0.3470	Adder	0.77
963572	AG1-206 E	0.1868	Adder	0.41
963941	AG1-247 C	0.4648	Adder	1.03
963942	AG1-247 E	0.2466	Adder	0.55
963991	AG1-253 C	0.2051	Adder	0.46
963992	AG1-253 E	0.0988	Adder	0.22
964341	AG1-296 C	0.5007	Adder	1.11
964342	AG1-296 E	0.2696	Adder	0.6
964411	AG1-303 C O1	2.2199	Adder	4.93
964412	AG1-303 E O1	1.4799	Adder	3.29
964701	AG1-333 C	0.3845	Adder	0.85
964702	AG1-333 E	0.0524	Adder	0.12
964753	AG1-338 BAT	0.3232	Merchant Transmission	0.3232
964763	AG1-339 BAT	0.3232	Merchant Transmission	0.3232
964773	AG1-340 BAT	0.3232	Merchant Transmission	0.3232
965201	AG1-385 C	0.8988	Adder	2.0
965202	AG1-385 E	0.2662	Adder	0.59
965241	AG1-389 C O1	1.4217	Adder	3.16
965242	AG1-389 E O1	0.9478	Adder	2.1
965251	AG1-390 C O1	1.4217	Adder	3.16
965252	AG1-390 E O1	0.9478	Adder	2.1
965261	AG1-391 C O1	1.4217	Adder	3.16
965262	AG1-391 E O1	0.9478	Adder	2.1
965271	AG1-392 C O1	2.8434	Adder	6.31
965272	AG1-392 E O1	1.8956	Adder	4.21
965861	AG1-455	2.5330	Adder	5.62
966121	AG1-481	1.3332	Adder	2.96
966771	AG1-548 C	8.2203	Adder	18.25
966772	AG1-548 E	2.5018	Adder	5.55
966783	AG1-549 BAT	1.5884	Merchant Transmission	1.5884
WEC	WEC	0.1002	Confirmed LTF	0.1002
LGEE	LGEE	0.1301	Confirmed LTF	0.1301
CALDERWOOD	CALDERWOOD	0.0408	Confirmed LTF	0.0408
CBM-W2	CBM-W2	1.1021	Confirmed LTF	1.1021
TVA	TVA	0.0182	Confirmed LTF	0.0182
O-066	O-066	5.2090	Confirmed LTF	5.2090
SIGE	SIGE	0.1041	Confirmed LTF	0.1041
CHEOAH	CHEOAH	0.0445	Confirmed LTF	0.0445
CBM-S1	CBM-S1	0.0182	Confirmed LTF	0.0182
G-007	G-007	0.9366	Confirmed LTF	0.9366
HAMLET	HAMLET	0.2310	Confirmed LTF	0.2310
MEC	MEC	0.3941	Confirmed LTF	0.3941
LAGN	LAGN	0.0718	Confirmed LTF	0.0718
CATAWBA	CATAWBA	0.1067	Confirmed LTF	0.1067
CBM-W1	CBM-W1	6.5473	Confirmed LTF	6.5473

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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
165179609	200769	26HOMER CY	PENELEC	999324	26HOMER CT	PENELEC	N	PN-P2-2-PN-345-002T	bus	854.0	145.0	146.27	DC	23.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	6.5754	Adder	7.74
200829	26HNSMLK 2	2.2076	50/50	2.2076
200830	26HNSMLK 3	2.2076	50/50	2.2076
200831	26HNSMLK 4	2.2076	50/50	2.2076
200832	26HNSMLK 5	2.2076	50/50	2.2076
200835	26ARN_Z1-066	-0.8316	Adder	-0.98
200838	26HOMER C2	49.2411	50/50	49.2411
200839	26HOMER C3	52.1282	50/50	52.1282
200894	26K02	6.5883	Adder	7.75
203932	AA2-133 GEN	2.4753	Adder	2.91
203999	P-047 E	15.6652	Adder	18.43
294573	P-028 E	12.7265	Adder	14.97
915951	Y3-092 FTIR	143.2300	Merchant Transmission	143.2300
916202	Z1-069 E	12.5548	Adder	14.77
917673	Z2-108 BAT	2.2012	Merchant Transmission	2.2012
919201	AA1-144 OP	21.9768	Adder	25.86
920341	AA2-132 (Withdrawn : 12/07/2020)	3.2631	Adder	3.84
921642	AA2-000	46.1713	Adder	54.32
930511	AB2-092	1.6953	Adder	1.99
931092	AB1-160 E	3.5871	Adder	4.22
936421	AD2-055	3.4903	Adder	4.11
938352	AE1-053 BAT	1.2229	Merchant Transmission	1.2229
938951	AE1-123	1.8876	Adder	2.22
939291	AE1-160 C	1.6561	Adder	1.95
939292	AE1-160 E	0.9519	Adder	1.12
940861	AE2-074 C	4.0007	50/50	4.0007
940862	AE2-074 E	5.2663	50/50	5.2663
941191	AE2-113 C	11.4130	Adder	13.43
941192	AE2-113 E	12.2881	Adder	14.46
941321	AE2-126 C	1.0801	Adder	1.27
941322	AE2-126 E	0.7201	Adder	0.85
941421	AE2-139 C	4.2516	Adder	9.44
941422	AE2-139 E	2.8344	Adder	6.29
942811	AE2-299 C	4.5609	Adder	5.37
942812	AE2-299 E	18.2436	Adder	21.46
942961	AE2-316 C	5.6581	Adder	6.66
942962	AE2-316 E	8.0685	Adder	9.49
943151	AE2-344 C	9.7702	Adder	11.49
943152	AE2-344 E	6.5135	Adder	7.66
943351	AF1-006 C	1.6941	Adder	1.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943352	AF1-006 E	0.9529	Adder	1.12
943751	AF1-043	10.4708	Adder	12.32
944261	AF1-094 C	1.6065	Adder	1.89
944262	AF1-094 E	1.0710	Adder	1.26
944281	AF1-096 C	1.5648	Adder	1.84
944282	AF1-096 E	1.0432	Adder	1.23
944301	AF1-098 C	6.7887	Adder	7.99
944302	AF1-098 E	4.5258	Adder	5.32
944321	AF1-100 C	11.2736	Adder	13.26
944322	AF1-100 E	7.5157	Adder	8.84
944381	AF1-103 O1	3.2213	Adder	3.79
944391	AF1-104 O1	2.5337	Adder	2.98
944411	AF1-106 O1	3.5595	Adder	4.19
944751	AF1-140 C	-1.1101	Adder	-1.31
944881	AF1-153 C O1	1.3113	Adder	1.54
944882	AF1-153 E O1	0.8742	Adder	1.03
944901	AF1-155 C	1.3158	Adder	1.55
944902	AF1-155 E	0.8772	Adder	1.03
945021	AF1-167 C	1.0229	Adder	1.2
945022	AF1-167 E	0.6832	Adder	0.8
945051	AF1-170 C	6.3141	Adder	7.43
945052	AF1-170 E	4.2094	Adder	4.95
945451	AF1-210 C	1.1567	Adder	1.36
945452	AF1-210 E	0.7711	Adder	0.91
945673	AF1-232 BAT (Withdrawn : 01/19/2021)	2.8594	Merchant Transmission	2.8594
946111	AF1-276 C	17.8260	50/50	17.8260
946112	AF1-276 E	8.7800	50/50	8.7800
946121	AF1-277 C	17.8260	50/50	17.8260
946122	AF1-277 E	8.7800	50/50	8.7800
946131	AF1-278 C	14.2182	50/50	14.2182
946132	AF1-278 E	7.0666	50/50	7.0666
946211	AF1-286 C	1.4416	Adder	1.7
946212	AF1-286 E	0.9789	Adder	1.15
946221	AF1-287 C	1.6851	Adder	1.98
946222	AF1-287 E	1.1234	Adder	1.32
946381	AF1-302 C	2.4708	Adder	2.91
946382	AF1-302 E	3.2944	Adder	3.88
946401	AF1-304 C	7.7438	Adder	9.11
946402	AF1-304 E	5.1626	Adder	6.07
946421	AF1-306 C	5.4045	Adder	6.36
946422	AF1-306 E	21.6180	Adder	25.43
946771	AF1-217 C	1.6851	Adder	1.98
946772	AF1-217 E	1.1234	Adder	1.32
957161	AF2-010 C	6.1504	Adder	7.24
957162	AF2-010 E	4.1449	Adder	4.88
957513	AF2-045 BAT	2.4710	Merchant Transmission	2.4710
957571	AF2-051 C	5.2061	Adder	6.12
957572	AF2-051 E	2.6819	Adder	3.16
957931	AF2-087 C (Suspended)	-0.2624	Adder	-0.31
958361	AF2-130 C	1.3964	Adder	1.64
958362	AF2-130 E	0.9309	Adder	1.1
958472	AF2-141 BAT	2.4458	Merchant Transmission	2.4458

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958731	AF2-164 C O1	10.6708	Adder	12.55
958732	AF2-164 E O1	7.1139	Adder	8.37
958741	AF2-165 C	1.5743	Adder	1.85
958742	AF2-165 E	1.0495	Adder	1.23
958751	AF2-166 C	1.3964	Adder	1.64
958752	AF2-166 E	0.9309	Adder	1.1
959061	AF2-197 C O1	5.7745	Adder	6.79
959062	AF2-197 E O1	8.6617	Adder	10.19
959441	AF2-235 C	0.7824	Adder	0.92
959442	AF2-235 E	0.5216	Adder	0.61
959471	AF2-238 C	2.1560	Adder	2.54
959472	AF2-238 E	1.4373	Adder	1.69
959481	AF2-239 C	1.5504	Adder	1.82
959482	AF2-239 E	1.2431	Adder	1.46
959491	AF2-240 C	0.6727	Adder	0.79
959492	AF2-240 E	0.5731	Adder	0.67
959501	AF2-241 C	2.0111	Adder	2.37
959502	AF2-241 E	1.5484	Adder	1.82
959521	AF2-243 C	1.1807	Adder	1.39
959522	AF2-243 E	0.7871	Adder	0.93
959741	AF2-265 C	1.5451	Adder	1.82
959742	AF2-265 E	1.1499	Adder	1.35
959793	AF2-270 BAT	0.2144	Merchant Transmission	0.2144
959822	AF2-273 E	0.4581	Adder	0.54
960031	AF2-294 C	1.9677	Adder	2.31
960032	AF2-294 E	1.3118	Adder	1.54
960041	AF2-295 C	1.3158	Adder	1.55
960042	AF2-295 E	0.8772	Adder	1.03
960271	AF2-318 C	1.6761	Adder	1.97
960272	AF2-318 E	1.1174	Adder	1.31
960891	AF2-380 C	0.7454	Adder	0.88
960892	AF2-380 E	0.4969	Adder	0.58
961141	AF2-405	1.7797	Adder	2.09
961151	AF2-406	13.3480	Adder	15.7
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	85.0620	50/50	85.0620
961211	AF2-412	28.0526	Adder	33.0
961451	AF2-436	0.1867	Adder	0.22
961971	AG1-040 C	0.9378	Adder	2.08
961972	AG1-040 E	0.6252	Adder	1.39
962511	AG1-100 C	0.8941	Adder	1.98
962512	AG1-100 E	0.5961	Adder	1.32
962642	AG1-113 BAT	0.6820	Merchant Transmission	0.6820
962652	AG1-114 BAT	0.6481	Merchant Transmission	0.6481
962891	AG1-138 C	0.2929	Adder	0.65
962892	AG1-138 E	0.0154	Adder	0.03
962901	AG1-139 C	0.3303	Adder	0.73
962902	AG1-139 E	0.0174	Adder	0.04
962911	AG1-140 C	0.1360	Adder	0.3
962912	AG1-140 E	0.0619	Adder	0.14
963281	AG1-177 C O1	0.8514	Adder	1.89
963282	AG1-177 E O1	0.5676	Adder	1.26
963441	AG1-193 C	0.9811	Adder	2.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963442	AG1-193 E	0.6541	Adder	1.45
963481	AG1-197 C	0.7110	Adder	1.58
963482	AG1-197 E	0.4740	Adder	1.05
963491	AG1-198 C	0.5109	Adder	1.13
963492	AG1-198 E	0.3406	Adder	0.76
963531	AG1-202 C	0.4659	Adder	1.03
963532	AG1-202 E	0.2400	Adder	0.53
963571	AG1-206 C	0.3450	Adder	0.77
963572	AG1-206 E	0.1858	Adder	0.41
963941	AG1-247 C	0.4622	Adder	1.03
963942	AG1-247 E	0.2452	Adder	0.54
963991	AG1-253 C	0.2040	Adder	0.45
963992	AG1-253 E	0.0982	Adder	0.22
964341	AG1-296 C	0.4979	Adder	1.11
964342	AG1-296 E	0.2681	Adder	0.6
964411	AG1-303 C O1	2.2074	Adder	4.9
964412	AG1-303 E O1	1.4716	Adder	3.27
964701	AG1-333 C	0.3824	Adder	0.85
964702	AG1-333 E	0.0521	Adder	0.12
964753	AG1-338 BAT	0.3214	Merchant Transmission	0.3214
964763	AG1-339 BAT	0.3214	Merchant Transmission	0.3214
964773	AG1-340 BAT	0.3214	Merchant Transmission	0.3214
965201	AG1-385 C	0.8936	Adder	1.98
965202	AG1-385 E	0.2647	Adder	0.59
965241	AG1-389 C O1	1.4137	Adder	3.14
965242	AG1-389 E O1	0.9425	Adder	2.09
965251	AG1-390 C O1	1.4137	Adder	3.14
965252	AG1-390 E O1	0.9425	Adder	2.09
965261	AG1-391 C O1	1.4137	Adder	3.14
965262	AG1-391 E O1	0.9425	Adder	2.09
965271	AG1-392 C O1	2.8274	Adder	6.28
965272	AG1-392 E O1	1.8850	Adder	4.18
965861	AG1-455	2.5189	Adder	5.59
966121	AG1-481	1.3257	Adder	2.94
966771	AG1-548 C	8.1742	Adder	18.14
966772	AG1-548 E	2.4878	Adder	5.52
966783	AG1-549 BAT	1.5794	Merchant Transmission	1.5794
WEC	WEC	0.0995	Confirmed LTF	0.0995
LGEE	LGEE	0.1294	Confirmed LTF	0.1294
CALDERWOOD	CALDERWOOD	0.0408	Confirmed LTF	0.0408
CBM-W2	CBM-W2	1.0931	Confirmed LTF	1.0931
TVA	TVA	0.0182	Confirmed LTF	0.0182
O-066	O-066	5.1821	Confirmed LTF	5.1821
SIGE	SIGE	0.1035	Confirmed LTF	0.1035
CHEOAH	CHEOAH	0.0445	Confirmed LTF	0.0445
CBM-S1	CBM-S1	0.0182	Confirmed LTF	0.0182
G-007	G-007	0.9314	Confirmed LTF	0.9314
HAMLET	HAMLET	0.2293	Confirmed LTF	0.2293
MEC	MEC	0.3925	Confirmed LTF	0.3925
LAGN	LAGN	0.0718	Confirmed LTF	0.0718
CATAWBA	CATAWBA	0.1061	Confirmed LTF	0.1061
CBM-W1	CBM-W1	6.5053	Confirmed LTF	6.5053

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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
167541783	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	923.0	198.54	200.02	DC	30.01

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
165179564	200810	26KEYSTONE	PENELEC	999332	KEYSTONE	PENELEC	4	APS-P2-2-WP-500-DRT19	bus	634.0	148.72	149.64	DC	12.85

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

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
166092514	200927	26FOURMILE	PENELEC	200820	26ERIE SE	PENELEC	1	PN-P2-3-PN-230-6G	breaker	245.0	145.1	146.65	DC	3.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	3.8734	50/50	3.8734
200643	26SENECA#2	3.6582	50/50	3.6582
200644	26SENECA#3	0.3997	50/50	0.3997
201201	26WRREN CT	1.3722	50/50	1.3722
203999	P-047 E	3.5684	Adder	4.2
915952	Y3-092 NFTWR	51.9200	Merchant Transmission	51.9200
916202	Z1-069 E	3.0218	Adder	3.56
920341	AA2-132 (Withdrawn : 12/07/2020)	0.9483	Adder	1.12
923821	AB2-019 FTWR	1.4538	Merchant Transmission	1.4538
931092	AB1-160 E	0.8634	Adder	1.02
940861	AE2-074 C	0.8692	Adder	1.02
940862	AE2-074 E	1.1442	Adder	1.35
941191	AE2-113 C	3.5512	Adder	4.18
941192	AE2-113 E	3.8235	Adder	4.5
942811	AE2-299 C	13.8259	50/50	13.8259
942812	AE2-299 E	55.3037	50/50	55.3037
944301	AF1-098 C	21.7925	50/50	21.7925
944302	AF1-098 E	14.5283	50/50	14.5283
944381	AF1-103 O1	3.0518	50/50	3.0518
944392	AF1-104 BAT	1.0814	Merchant Transmission	1.0814
944411	AF1-106 O1	0.9938	Adder	1.17
945121	AF1-177	0.1204	50/50	0.1204
946111	AF1-276 C	4.8140	Adder	5.66
946112	AF1-276 E	2.3711	Adder	2.79
946121	AF1-277 C	4.8140	Adder	5.66
946122	AF1-277 E	2.3711	Adder	2.79
946131	AF1-278 C	3.8397	Adder	4.52
946132	AF1-278 E	1.9083	Adder	2.25
946211	AF1-286 C	0.4025	Adder	0.47
946212	AF1-286 E	0.2733	Adder	0.32
946403	AF1-304 BAT	5.2490	Merchant Transmission	5.2490
946421	AF1-306 C	2.1904	Adder	2.58
946422	AF1-306 E	8.7615	Adder	10.31
959471	AF2-238 C	0.5178	Adder	0.61
959472	AF2-238 E	0.3452	Adder	0.41
959491	AF2-240 C	0.1878	Adder	0.22
959492	AF2-240 E	0.1600	Adder	0.19
959501	AF2-241 C	0.5615	Adder	0.66
959502	AF2-241 E	0.4323	Adder	0.51
959741	AF2-265 C	0.3711	Adder	0.44
959742	AF2-265 E	0.2761	Adder	0.32

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	0.5718	Adder	0.67
960032	AF2-294 E	0.3812	Adder	0.45
961141	AF2-405	0.4969	Adder	0.58
961151	AF2-406	3.7268	Adder	4.38
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	13.7981	Adder	16.23
961211	AF2-412	5.9780	Adder	7.03
962911	AG1-140 C	0.7777	50/50	0.7777
962912	AG1-140 E	0.3543	50/50	0.3543
963571	AG1-206 C	0.1516	Adder	0.34
963572	AG1-206 E	0.0816	Adder	0.18
963941	AG1-247 C	0.1290	Adder	0.29
963942	AG1-247 E	0.0685	Adder	0.15
963991	AG1-253 C	1.1666	50/50	1.1666
963992	AG1-253 E	0.5617	50/50	0.5617
964701	AG1-333 C	0.1111	Adder	0.25
964702	AG1-333 E	0.0152	Adder	0.03
965241	AG1-389 C O1	0.3453	Adder	0.77
965242	AG1-389 E O1	0.2302	Adder	0.51
965251	AG1-390 C O1	0.3453	Adder	0.77
965252	AG1-390 E O1	0.2302	Adder	0.51
965261	AG1-391 C O1	0.3453	Adder	0.77
965262	AG1-391 E O1	0.2302	Adder	0.51
965271	AG1-392 C O1	0.6907	Adder	1.53
965272	AG1-392 E O1	0.4604	Adder	1.02
965862	AG1-455 BAT	1.6163	Merchant Transmission	1.6163
966121	AG1-481	2.3697	50/50	2.3697
966773	AG1-548 BAT	3.7852	50/50	3.7852
G-007A	G-007A	2.0139	Confirmed LTF	2.0139
VFT	VFT	5.5664	Confirmed LTF	5.5664
CALDERWOOD	CALDERWOOD	0.2326	Confirmed LTF	0.2326
PRAIRIE	PRAIRIE	1.4749	Confirmed LTF	1.4749
CHEOAH	CHEOAH	0.2327	Confirmed LTF	0.2327
CBM-N	CBM-N	1.1100	Confirmed LTF	1.1100
COTTONWOOD	COTTONWOOD	1.0815	Confirmed LTF	1.0815
HAMLET	HAMLET	0.1946	Confirmed LTF	0.1946
GIBSON	GIBSON	0.3238	Confirmed LTF	0.3238
BLUEG	BLUEG	1.0173	Confirmed LTF	1.0173
TRIMBLE	TRIMBLE	0.3267	Confirmed LTF	0.3267
CATAWBA	CATAWBA	0.1323	Confirmed LTF	0.1323

11.6.12 Index 12

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
167541821	235121	01ARMSTR	AP	235204	01KITTAN	AP	1	ATSI-P2-3-CEI-345-004D	breaker	228.0	114.37	116.3	DC	9.77

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
915951	Y3-092 FTIR	76.5100	Merchant Transmission	76.5100
935191	AD1-154	1.0537	Adder	1.24
936881	AD2-112 C	-3.1312	Adder	-3.68
936882	AD2-112 E	-1.2425	Adder	-1.46
938951	AE1-123	1.2676	Adder	1.49
939291	AE1-160 C	0.8040	Adder	0.95
939292	AE1-160 E	0.4621	Adder	0.54
942811	AE2-299 C	1.5501	Adder	1.82
942812	AE2-299 E	6.2005	Adder	7.29
942961	AE2-316 C	3.1940	Adder	3.76
942962	AE2-316 E	4.5546	Adder	5.36
943151	AE2-344 C	4.0313	Adder	4.74
943152	AE2-344 E	2.6875	Adder	3.16
943351	AF1-006 C	0.7135	Adder	0.84
943352	AF1-006 E	0.4013	Adder	0.47
944261	AF1-094 C	0.6703	Adder	0.79
944262	AF1-094 E	0.4469	Adder	0.53
944281	AF1-096 C	0.7597	Adder	0.89
944282	AF1-096 E	0.5065	Adder	0.6
944301	AF1-098 C	2.4027	Adder	2.83
944302	AF1-098 E	1.6018	Adder	1.88
944381	AF1-103 O1	0.9289	Adder	1.09
944391	AF1-104 O1	1.2413	Adder	1.46
944881	AF1-153 C O1	0.6129	Adder	0.72
944882	AF1-153 E O1	0.4086	Adder	0.48
944901	AF1-155 C	0.6173	Adder	0.73
944902	AF1-155 E	0.4115	Adder	0.48
945021	AF1-167 C	0.4633	Adder	0.55
945022	AF1-167 E	0.3094	Adder	0.36
945051	AF1-170 C	2.7948	Adder	3.29
945052	AF1-170 E	1.8632	Adder	2.19
945751	AF1-240 C O1	0.6322	Adder	0.74
945752	AF1-240 E O1	0.4215	Adder	0.5
946111	AF1-276 C	2.8794	Adder	3.39
946112	AF1-276 E	1.4182	Adder	1.67
946121	AF1-277 C	2.8794	Adder	3.39
946122	AF1-277 E	1.4182	Adder	1.67
946131	AF1-278 C	2.2966	Adder	2.7
946132	AF1-278 E	1.1414	Adder	1.34
946221	AF1-287 C	0.6924	Adder	0.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946222	AF1-287 E	0.4616	Adder	0.54
946381	AF1-302 C	1.3947	Adder	1.64
946382	AF1-302 E	1.8597	Adder	2.19
946401	AF1-304 C	3.9698	Adder	4.67
946402	AF1-304 E	2.6466	Adder	3.11
946421	AF1-306 C	2.2469	Adder	2.64
946422	AF1-306 E	8.9878	Adder	10.57
946771	AF1-217 C	0.6925	Adder	0.81
946772	AF1-217 E	0.4617	Adder	0.54
957161	AF2-010 C	2.5857	Adder	3.04
957162	AF2-010 E	1.7425	Adder	2.05
957571	AF2-051 C	2.1133	Adder	2.49
957572	AF2-051 E	1.0887	Adder	1.28
958361	AF2-130 C	0.8255	Adder	0.97
958362	AF2-130 E	0.5503	Adder	0.65
958731	AF2-164 C O1	3.3733	Adder	3.97
958732	AF2-164 E O1	2.2489	Adder	2.65
958741	AF2-165 C	0.8070	Adder	0.95
958742	AF2-165 E	0.5380	Adder	0.63
958751	AF2-166 C	0.8255	Adder	0.97
958752	AF2-166 E	0.5503	Adder	0.65
959441	AF2-235 C	0.3798	Adder	0.45
959442	AF2-235 E	0.2532	Adder	0.3
959521	AF2-243 C	0.6053	Adder	0.71
959522	AF2-243 E	0.4035	Adder	0.47
960041	AF2-295 C	0.6173	Adder	0.73
960042	AF2-295 E	0.4115	Adder	0.48
961971	AG1-040 C	0.3866	Adder	0.86
961972	AG1-040 E	0.2578	Adder	0.57
962511	AG1-100 C	0.3757	Adder	0.83
962512	AG1-100 E	0.2505	Adder	0.56
962891	AG1-138 C	0.1732	Adder	0.38
962892	AG1-138 E	0.0091	Adder	0.02
962901	AG1-139 C	0.1693	Adder	0.38
962902	AG1-139 E	0.0089	Adder	0.02
962911	AG1-140 C	0.0462	Adder	0.1
962912	AG1-140 E	0.0211	Adder	0.05
963281	AG1-177 C O1	0.3553	Adder	0.79
963282	AG1-177 E O1	0.2369	Adder	0.53
963441	AG1-193 C	0.4288	Adder	0.95
963442	AG1-193 E	0.2859	Adder	0.63
963481	AG1-197 C	0.2933	Adder	0.65
963482	AG1-197 E	0.1956	Adder	0.43
963491	AG1-198 C	0.2132	Adder	0.47
963492	AG1-198 E	0.1421	Adder	0.32
963531	AG1-202 C	0.2122	Adder	0.47
963532	AG1-202 E	0.1093	Adder	0.24
963991	AG1-253 C	0.0693	Adder	0.15
963992	AG1-253 E	0.0334	Adder	0.07
964341	AG1-296 C	0.2926	Adder	0.65
964342	AG1-296 E	0.1576	Adder	0.35
964411	AG1-303 C O1	0.8960	Adder	1.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
964412	AG1-303 E O1	0.5974	Adder	1.33
965201	AG1-385 C	0.4177	Adder	0.93
965202	AG1-385 E	0.1237	Adder	0.27
965861	AG1-455	1.1149	Adder	2.47
966121	AG1-481	0.3823	Adder	0.85
966453	AG1-514 BAT	0.3888	Merchant Transmission	0.3888
966771	AG1-548 C	3.3737	Adder	7.49
966772	AG1-548 E	1.0268	Adder	2.28
G-007A	G-007A	1.4505	Confirmed LTF	1.4505
VFT	VFT	4.0054	Confirmed LTF	4.0054
CALDERWOOD	CALDERWOOD	0.2008	Confirmed LTF	0.2008
PRAIRIE	PRAIRIE	1.1469	Confirmed LTF	1.1469
CHEOAH	CHEOAH	0.2012	Confirmed LTF	0.2012
CBM-N	CBM-N	0.7956	Confirmed LTF	0.7956
COTTONWOOD	COTTONWOOD	0.8841	Confirmed LTF	0.8841
HAMLET	HAMLET	0.1946	Confirmed LTF	0.1946
GIBSON	GIBSON	0.2490	Confirmed LTF	0.2490
BLUEG	BLUEG	0.7916	Confirmed LTF	0.7916
TRIMBLE	TRIMBLE	0.2543	Confirmed LTF	0.2543
CATAWBA	CATAWBA	0.1257	Confirmed LTF	0.1257

11.6.13 Index 13

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
167541805	235139	01AL&D6T	AP	235138	01AL 4J	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	126.18	128.82	DC	8.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235030	01MHNG-T155	0.1499	50/50	0.1499
235134	01AL&D6	0.5185	50/50	0.5185
915951	Y3-092 FTIR	68.1900	Merchant Transmission	68.1900
935191	AD1-154	0.9920	Adder	1.17
936881	AD2-112 C	-4.2604	Adder	-5.01
936882	AD2-112 E	-1.6906	Adder	-1.99
938951	AE1-123	1.1749	Adder	1.38
939291	AE1-160 C	0.7330	Adder	0.86
939292	AE1-160 E	0.4213	Adder	0.5
942811	AE2-299 C	1.3973	Adder	1.64
942812	AE2-299 E	5.5891	Adder	6.58
942961	AE2-316 C	2.8212	Adder	3.32
942962	AE2-316 E	4.0230	Adder	4.73
943151	AE2-344 C	3.6160	Adder	4.25
943152	AE2-344 E	2.4107	Adder	2.84
943351	AF1-006 C	0.6401	Adder	0.75
943352	AF1-006 E	0.3600	Adder	0.42
944261	AF1-094 C	0.6067	Adder	0.71
944262	AF1-094 E	0.4045	Adder	0.48
944281	AF1-096 C	0.6926	Adder	0.81
944282	AF1-096 E	0.4617	Adder	0.54
944301	AF1-098 C	2.1648	Adder	2.55
944302	AF1-098 E	1.4432	Adder	1.7
944391	AF1-104 O1	1.1087	Adder	1.3
944881	AF1-153 C O1	0.5584	Adder	0.66
944882	AF1-153 E O1	0.3723	Adder	0.44
944901	AF1-155 C	0.5625	Adder	0.66
944902	AF1-155 E	0.3750	Adder	0.44
945021	AF1-167 C	0.6632	Adder	0.78
945022	AF1-167 E	0.4430	Adder	0.52
945051	AF1-170 C	2.5019	Adder	2.94
945052	AF1-170 E	1.6680	Adder	1.96
945451	AF1-210 C	1.0352	50/50	1.0352
945452	AF1-210 E	0.6901	50/50	0.6901
945751	AF1-240 C O1	0.5952	Adder	0.7
945752	AF1-240 E O1	0.3968	Adder	0.47
946221	AF1-287 C	0.6211	Adder	0.73
946222	AF1-287 E	0.4141	Adder	0.49
946381	AF1-302 C	1.2320	Adder	1.45
946382	AF1-302 E	1.6426	Adder	1.93

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946401	AF1-304 C	3.6276	Adder	4.27
946402	AF1-304 E	2.4184	Adder	2.85
946771	AF1-217 C	0.6211	Adder	0.73
946772	AF1-217 E	0.4141	Adder	0.49
957161	AF2-010 C	2.3413	Adder	2.75
957162	AF2-010 E	1.5778	Adder	1.86
957571	AF2-051 C	1.8925	Adder	2.23
957572	AF2-051 E	0.9749	Adder	1.15
958361	AF2-130 C	0.7603	Adder	0.89
958362	AF2-130 E	0.5069	Adder	0.6
958731	AF2-164 C O1	2.9919	Adder	3.52
958732	AF2-164 E O1	1.9946	Adder	2.35
958741	AF2-165 C	0.7371	Adder	0.87
958742	AF2-165 E	0.4914	Adder	0.58
958751	AF2-166 C	0.7603	Adder	0.89
958752	AF2-166 E	0.5069	Adder	0.6
959441	AF2-235 C	0.3463	Adder	0.41
959442	AF2-235 E	0.2309	Adder	0.27
959521	AF2-243 C	0.5528	Adder	0.65
959522	AF2-243 E	0.3685	Adder	0.43
959822	AF2-273 E	0.3870	50/50	0.3870
960041	AF2-295 C	0.5625	Adder	0.66
960042	AF2-295 E	0.3750	Adder	0.44
960891	AF2-380 C	0.4209	Adder	0.5
960892	AF2-380 E	0.2806	Adder	0.33
961971	AG1-040 C	0.3465	Adder	0.77
961972	AG1-040 E	0.2310	Adder	0.51
962511	AG1-100 C	0.3367	Adder	0.75
962512	AG1-100 E	0.2245	Adder	0.5
962891	AG1-138 C	0.1595	Adder	0.35
962892	AG1-138 E	0.0084	Adder	0.02
962901	AG1-139 C	0.1546	Adder	0.34
962902	AG1-139 E	0.0081	Adder	0.02
962911	AG1-140 C	0.0417	Adder	0.09
962912	AG1-140 E	0.0190	Adder	0.04
963281	AG1-177 C O1	0.3215	Adder	0.71
963282	AG1-177 E O1	0.2144	Adder	0.48
963441	AG1-193 C	0.3869	Adder	0.86
963442	AG1-193 E	0.2579	Adder	0.57
963481	AG1-197 C	0.2628	Adder	0.58
963482	AG1-197 E	0.1752	Adder	0.39
963491	AG1-198 C	0.1929	Adder	0.43
963492	AG1-198 E	0.1286	Adder	0.29
963531	AG1-202 C	0.1898	Adder	0.42
963532	AG1-202 E	0.0978	Adder	0.22
963991	AG1-253 C	0.0625	Adder	0.14
963992	AG1-253 E	0.0301	Adder	0.07
964341	AG1-296 C	0.2575	Adder	0.57
964342	AG1-296 E	0.1386	Adder	0.31
964411	AG1-303 C O1	0.8024	Adder	1.78
964412	AG1-303 E O1	0.5350	Adder	1.19
965201	AG1-385 C	0.3806	Adder	0.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965202	AG1-385 E	0.1127	Adder	0.25
965861	AG1-455	0.9981	Adder	2.22
966453	AG1-514 BAT	1.0000	50/50	1.0000
966771	AG1-548 C	3.0520	Adder	6.77
966772	AG1-548 E	0.9289	Adder	2.06
G-007A	G-007A	1.3929	Confirmed LTF	1.3929
VFT	VFT	3.8442	Confirmed LTF	3.8442
CALDERWOOD	CALDERWOOD	0.1854	Confirmed LTF	0.1854
PRAIRIE	PRAIRIE	1.0539	Confirmed LTF	1.0539
CHEOAH	CHEOAH	0.1862	Confirmed LTF	0.1862
CBM-N	CBM-N	0.7608	Confirmed LTF	0.7608
COTTONWOOD	COTTONWOOD	0.8148	Confirmed LTF	0.8148
HAMLET	HAMLET	0.1808	Confirmed LTF	0.1808
GIBSON	GIBSON	0.2288	Confirmed LTF	0.2288
BLUEG	BLUEG	0.7291	Confirmed LTF	0.7291
TRIMBLE	TRIMBLE	0.2337	Confirmed LTF	0.2337
CATAWBA	CATAWBA	0.1165	Confirmed LTF	0.1165

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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
167490644	235152	01BUTLER	AP	235197	01KARNSC	AP	1	ATSI-P2-3-CEI-345-004D	breaker	179.0	103.53	104.28	DC	2.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
236828	01GRAYMONT	-0.1716	Adder	-0.2
915952	Y3-092 NFTWR	95.0500	Merchant Transmission	95.0500
923062	AB1-105 OP (Suspended)	9.0529	Adder	10.65
923821	AB2-019 FTWR	2.6614	Merchant Transmission	2.6614
926252	AC1-103 GEN1	4.2902	Adder	5.05
926253	AC1-103 GEN2	4.2902	Adder	5.05
938951	AE1-123	-2.3724	Adder	-2.79
939171	AE1-147 C	-0.5172	Adder	-0.61
941351	AE2-131 C (Suspended)	-0.5598	Adder	-0.66
942813	AE2-299 BAT	12.1504	Merchant Transmission	12.1504
944382	AF1-103 BAT	1.4572	Merchant Transmission	1.4572
944392	AF1-104 BAT	1.8444	Merchant Transmission	1.8444
944901	AF1-155 C	-0.9096	Adder	-1.07
945351	AF1-200 FTIR	1.2130	Merchant Transmission	1.2130
945451	AF1-210 C	-1.4502	Adder	-1.71
946061	AF1-271 C O1	1.9153	Adder	2.25
946062	AF1-271 E O1	1.2768	Adder	1.5
946403	AF1-304 BAT	12.7040	50/50	12.7040
946423	AF1-306 BAT	18.2533	Merchant Transmission	18.2533
959823	AF2-273 BAT	0.2721	50/50	0.2721
960023	AF2-293 BAT	0.0592	Merchant Transmission	0.0592
961202	AF2-411 BAT (Withdrawn : 12/08/2020)	15.0180	Merchant Transmission	15.0180
965203	AG1-385 BAT	0.4012	Merchant Transmission	0.4012
965303	AG1-395 BAT	0.2493	Merchant Transmission	0.2493
965862	AG1-455 BAT	1.6908	Merchant Transmission	1.6908
966122	AG1-481 BAT	0.5908	Merchant Transmission	0.5908
966773	AG1-548 BAT	1.2338	Merchant Transmission	1.2338
WEC	WEC	0.2142	Confirmed LTF	0.2142
LGEE	LGEE	0.4172	Confirmed LTF	0.4172
CPL	CPL	0.2826	Confirmed LTF	0.2826
CBM-W2	CBM-W2	5.6090	Confirmed LTF	5.6090
NY	NY	1.2232	Confirmed LTF	1.2232
TVA	TVA	0.8288	Confirmed LTF	0.8288
O-066	O-066	5.4850	Confirmed LTF	5.4850
SIGE	SIGE	0.1550	Confirmed LTF	0.1550
CBM-S2	CBM-S2	4.8859	Confirmed LTF	4.8859
CBM-S1	CBM-S1	0.2299	Confirmed LTF	0.2299
G-007	G-007	0.8242	Confirmed LTF	0.8242

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	1.0503	Confirmed LTF	1.0503
LAGN	LAGN	1.0482	Confirmed LTF	1.0482
CBM-W1	CBM-W1	9.8140	Confirmed LTF	9.8140

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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
167490347	235197	01KARNSC	AP	235152	01BUTLER	AP	1	ATSI-P2-3-CEI-345-004D	breaker	179.0	240.03	243.55	DC	13.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.7388	50/50	0.7388
200662	26SCRUB GR	1.6803	50/50	1.6803
235030	01MHNG-T155	0.1596	50/50	0.1596
236828	01GRAYMONT	0.1716	Adder	0.2
290086	Q-036 E	1.7010	Adder	2.0
293393	V3-030E	1.2402	Adder	1.46
915951	Y3-092 FTIR	95.0500	Merchant Transmission	95.0500
916202	Z1-069 E	2.6874	Adder	3.16
921642	AA2-000	21.5351	Adder	25.34
930511	AB2-092	0.7907	Adder	0.93
931092	AB1-160 E	0.7678	Adder	0.9
935191	AD1-154	2.3032	50/50	2.3032
936421	AD2-055	1.6279	Adder	1.92
936991	AD2-133 C	0.7655	Adder	0.9
936992	AD2-133 E	3.5011	Adder	4.12
938951	AE1-123	2.7911	50/50	2.7911
939171	AE1-147 C	0.5172	Adder	0.61
939172	AE1-147 E	0.3448	Adder	0.41
939291	AE1-160 C	1.4995	50/50	1.4995
939292	AE1-160 E	0.8619	50/50	0.8619
940201	AE2-001 C	0.5159	Adder	0.61
940202	AE2-001 E	0.3439	Adder	0.4
940861	AE2-074 C	0.7659	Adder	0.9
940862	AE2-074 E	1.0081	Adder	1.19
941191	AE2-113 C	3.5353	Adder	4.16
941192	AE2-113 E	3.8063	Adder	4.48
941261	AE2-120 C	0.5152	Adder	0.61
941262	AE2-120 E	0.3435	Adder	0.4
941271	AE2-121 C	0.2762	Adder	0.32
941272	AE2-121 E	0.1844	Adder	0.22
941321	AE2-126 C	0.6680	Adder	0.79
941322	AE2-126 E	0.4453	Adder	0.52
941331	AE2-129 C	0.5598	Adder	0.66
941332	AE2-129 E	0.3732	Adder	0.44
941351	AE2-131 C (Suspended)	0.5598	Adder	0.66
941352	AE2-131 E (Suspended)	0.3732	Adder	0.44
942491	AE2-262 C	2.4259	Adder	2.85
942492	AE2-262 E	1.6302	Adder	1.92
942501	AE2-263 C	2.2803	Adder	2.68
942502	AE2-263 E	1.5225	Adder	1.79

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	2.0656	Adder	2.43
942812	AE2-299 E	8.2623	Adder	9.72
942961	AE2-316 C	4.3499	50/50	4.3499
942962	AE2-316 E	6.2031	50/50	6.2031
943151	AE2-344 C	5.2796	Adder	6.21
943152	AE2-344 E	3.5197	Adder	4.14
943351	AF1-006 C	0.9302	Adder	1.09
943352	AF1-006 E	0.5233	Adder	0.62
943751	AF1-043	4.8838	Adder	5.75
944181	AF1-086 C O1	1.0729	Adder	1.26
944182	AF1-086 E O1	4.6675	Adder	5.49
944261	AF1-094 C	0.9660	Adder	1.14
944262	AF1-094 E	0.6440	Adder	0.76
944281	AF1-096 C	1.4168	50/50	1.4168
944282	AF1-096 E	0.9446	50/50	0.9446
944301	AF1-098 C	3.2077	Adder	3.77
944302	AF1-098 E	2.1385	Adder	2.52
944311	AF1-099 C	3.6825	Adder	4.33
944312	AF1-099 E	2.4550	Adder	2.89
944321	AF1-100 C	7.9114	Adder	9.31
944322	AF1-100 E	5.2742	Adder	6.2
944381	AF1-103 O1	1.2386	Adder	1.46
944391	AF1-104 O1	1.5677	Adder	1.84
944691	AF1-134 C	0.6241	Adder	0.73
944692	AF1-134 E	0.4161	Adder	0.49
944771	AF1-142 C	5.8920	Adder	6.93
944772	AF1-142 E	3.9280	Adder	4.62
944881	AF1-153 C O1	0.9010	Adder	1.06
944882	AF1-153 E O1	0.6006	Adder	0.71
944901	AF1-155 C	0.9096	Adder	1.07
944902	AF1-155 E	0.6064	Adder	0.71
945021	AF1-167 C	1.5046	50/50	1.5046
945022	AF1-167 E	1.0049	50/50	1.0049
945051	AF1-170 C	3.6027	Adder	4.24
945052	AF1-170 E	2.4018	Adder	2.83
945451	AF1-210 C	1.7061	50/50	1.7061
945452	AF1-210 E	1.1374	50/50	1.1374
945491	AF1-214 C (Withdrawn : 12/03/2020)	0.5153	Adder	0.61
945492	AF1-214 E (Withdrawn : 12/03/2020)	0.3435	Adder	0.4
945751	AF1-240 C O1	1.3819	50/50	1.3819
945752	AF1-240 E O1	0.9213	50/50	0.9213
946111	AF1-276 C	3.7393	Adder	4.4
946112	AF1-276 E	1.8418	Adder	2.17
946121	AF1-277 C	3.7393	Adder	4.4
946122	AF1-277 E	1.8418	Adder	2.17
946131	AF1-278 C	2.9825	Adder	3.51
946132	AF1-278 E	1.4823	Adder	1.74
946221	AF1-287 C	0.9076	Adder	1.07
946222	AF1-287 E	0.6051	Adder	0.71
946381	AF1-302 C	1.8995	50/50	1.8995
946382	AF1-302 E	2.5327	50/50	2.5327

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946401	AF1-304 C	7.6224	50/50	7.6224
946402	AF1-304 E	5.0816	50/50	5.0816
946421	AF1-306 C	3.1031	Adder	3.65
946422	AF1-306 E	12.4123	Adder	14.6
946771	AF1-217 C	0.9076	Adder	1.07
946772	AF1-217 E	0.6051	Adder	0.71
957161	AF2-010 C	3.7466	Adder	4.41
957162	AF2-010 E	2.5249	Adder	2.97
957451	AF2-039 C	0.4190	Adder	0.49
957452	AF2-039 E	0.2793	Adder	0.33
957571	AF2-051 C	2.7680	Adder	3.26
957572	AF2-051 E	1.4259	Adder	1.68
957941	AF2-088 C	0.2017	Adder	0.24
957942	AF2-088 E	0.1345	Adder	0.16
958271	AF2-121 C	0.5598	Adder	0.66
958272	AF2-121 E	0.3732	Adder	0.44
958361	AF2-130 C	1.7143	50/50	1.7143
958362	AF2-130 E	1.1429	50/50	1.1429
958731	AF2-164 C O1	3.9772	Adder	4.68
958732	AF2-164 E O1	2.6515	Adder	3.12
958741	AF2-165 C	1.5448	50/50	1.5448
958742	AF2-165 E	1.0298	50/50	1.0298
958751	AF2-166 C	1.7143	50/50	1.7143
958752	AF2-166 E	1.1429	50/50	1.1429
959441	AF2-235 C	0.7084	50/50	0.7084
959442	AF2-235 E	0.4723	50/50	0.4723
959521	AF2-243 C	1.1586	50/50	1.1586
959522	AF2-243 E	0.7724	50/50	0.7724
959822	AF2-273 E	0.6750	50/50	0.6750
960022	AF2-293 E	0.0503	Adder	0.06
960041	AF2-295 C	0.9096	Adder	1.07
960042	AF2-295 E	0.6064	Adder	0.71
960051	AF2-296 C	0.6241	Adder	0.73
960052	AF2-296 E	0.4161	Adder	0.49
960891	AF2-380 C	3.6836	50/50	3.6836
960892	AF2-380 E	2.4557	50/50	2.4557
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	12.7653	Adder	15.02
961971	AG1-040 C	0.5056	Adder	1.12
961972	AG1-040 E	0.3370	Adder	0.75
962411	AG1-090 C O1	1.4834	Adder	3.29
962412	AG1-090 E O1	0.9889	Adder	2.2
962511	AG1-100 C	0.4897	Adder	1.09
962512	AG1-100 E	0.3265	Adder	0.72
962891	AG1-138 C	0.6786	50/50	0.6786
962892	AG1-138 E	0.0357	50/50	0.0357
962901	AG1-139 C	0.6115	50/50	0.6115
962902	AG1-139 E	0.0322	50/50	0.0322
962911	AG1-140 C	0.0616	Adder	0.14
962912	AG1-140 E	0.0281	Adder	0.06
962951	AG1-144 C	0.2967	Adder	0.66
962952	AG1-144 E	0.1978	Adder	0.44
963281	AG1-177 C O1	0.5120	Adder	1.14

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963282	AG1-177 E O1	0.3413	Adder	0.76
963441	AG1-193 C	1.3675	50/50	1.3675
963442	AG1-193 E	0.9117	50/50	0.9117
963481	AG1-197 C	0.3834	Adder	0.85
963482	AG1-197 E	0.2556	Adder	0.57
963491	AG1-198 C	0.3072	Adder	0.68
963492	AG1-198 E	0.2048	Adder	0.45
963531	AG1-202 C	0.2719	Adder	0.6
963532	AG1-202 E	0.1401	Adder	0.31
963571	AG1-206 C	0.1952	Adder	0.43
963572	AG1-206 E	0.1051	Adder	0.23
963891	AG1-242 C	0.1792	Adder	0.4
963892	AG1-242 E	0.0965	Adder	0.21
963991	AG1-253 C	0.0924	Adder	0.21
963992	AG1-253 E	0.0445	Adder	0.1
964341	AG1-296 C	0.7284	50/50	0.7284
964342	AG1-296 E	0.3922	50/50	0.3922
964411	AG1-303 C O1	1.1736	Adder	2.61
964412	AG1-303 E O1	0.7824	Adder	1.74
964451	AG1-308 C O1	0.2120	Adder	0.47
964452	AG1-308 E O1	0.2963	Adder	0.66
965121	AG1-377 C O1	0.2967	Adder	0.66
965122	AG1-377 E O1	0.1978	Adder	0.44
965131	AG1-378 C O1	0.2967	Adder	0.66
965132	AG1-378 E O1	0.1978	Adder	0.44
965201	AG1-385 C	0.6140	Adder	1.36
965202	AG1-385 E	0.1819	Adder	0.4
965241	AG1-389 C O1	0.3064	Adder	0.68
965242	AG1-389 E O1	0.2043	Adder	0.45
965251	AG1-390 C O1	0.3064	Adder	0.68
965252	AG1-390 E O1	0.2043	Adder	0.45
965261	AG1-391 C O1	0.3064	Adder	0.68
965262	AG1-391 E O1	0.2043	Adder	0.45
965271	AG1-392 C O1	0.6128	Adder	1.36
965272	AG1-392 E O1	0.4085	Adder	0.91
965301	AG1-395 C	0.3812	Adder	0.85
965302	AG1-395 E	0.1132	Adder	0.25
965861	AG1-455	1.4372	Adder	3.19
966121	AG1-481	0.5097	Adder	1.13
966771	AG1-548 C	4.8243	Adder	10.71
966772	AG1-548 E	1.4683	Adder	3.26
G-007A	G-007A	1.8820	Confirmed LTF	1.8820
VFT	VFT	5.1923	Confirmed LTF	5.1923
CALDERWOOD	CALDERWOOD	0.2798	Confirmed LTF	0.2798
PRAIRIE	PRAIRIE	1.6660	Confirmed LTF	1.6660
CHEOAH	CHEOAH	0.2803	Confirmed LTF	0.2803
CBM-N	CBM-N	1.0296	Confirmed LTF	1.0296
COTTONWOOD	COTTONWOOD	1.2579	Confirmed LTF	1.2579
HAMLET	HAMLET	0.2535	Confirmed LTF	0.2535
GIBSON	GIBSON	0.3647	Confirmed LTF	0.3647
BLUEG	BLUEG	1.1562	Confirmed LTF	1.1562
TRIMBLE	TRIMBLE	0.3712	Confirmed LTF	0.3712

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CATAWBA	CATAWBA	0.1677	Confirmed LTF	0.1677

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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
168049528	235203	01KISSNG	AP	235197	01KARNSC	AP	1	ATSI-P1-2-CEI-345-700T	single	268.0	145.9	150.33	DC	11.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.7758	80/20	0.7758
200642	26SENECA#1	2.8936	80/20	2.8936
200643	26SENECA#2	2.7329	80/20	2.7329
200644	26SENECA#3	0.2986	80/20	0.2986
200649	26PENNTech	0.5029	80/20	0.5029
200662	26SCRUB GR	1.7506	80/20	1.7506
200665	26SHAWVL 3	1.8285	80/20	1.8285
200666	26SHAWVL 4	1.7954	80/20	1.7954
200805	26COLVER13 (Deactivation : 01/09/2020)	1.1511	80/20	1.1511
200828	26HNSMLK 1	0.8374	80/20	0.8374
200829	26HNSMLK 2	0.8374	80/20	0.8374
200830	26HNSMLK 3	0.8374	80/20	0.8374
200831	26HNSMLK 4	0.8374	80/20	0.8374
200832	26HNSMLK 5	0.8374	80/20	0.8374
200849	26LAKVU GN	0.0712	80/20	0.0712
201201	26WRREN CT	0.7342	80/20	0.7342
235030	01MHNG-T155	0.0751	80/20	0.0751
235134	01AL&D6	0.0844	80/20	0.0844
915951	Y3-092 FTIR	92.3700	80/20	92.3700
921642	AA2-000	23.1250	Adder	27.21
930511	AB2-092	0.8491	Adder	1.0
935191	AD1-154	2.4200	80/20	2.4200
936421	AD2-055	1.7481	Adder	2.06
936991	AD2-133 C	0.8153	Adder	0.96
938951	AE1-123	2.9308	80/20	2.9308
939171	AE1-147 C	0.5544	Adder	0.65
939291	AE1-160 C	1.5949	80/20	1.5949
940201	AE2-001 C	0.5529	Adder	0.65
940681	AE2-055 C (Suspended)	0.5319	Adder	0.63
940861	AE2-074 C	0.8292	Adder	0.98
941191	AE2-113 C	4.4991	80/20	4.4991
941261	AE2-120 C	0.5522	Adder	0.65
941271	AE2-121 C	0.2960	Adder	0.35
941321	AE2-126 C	0.8448	80/20	0.8448
941331	AE2-129 C	0.5975	Adder	0.7
941351	AE2-131 C (Suspended)	0.5975	Adder	0.7
942351	AE2-248 C	0.4326	Adder	0.51
942491	AE2-262 C	2.6006	Adder	3.06

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942501	AE2-263 C	2.4445	Adder	2.88
942811	AE2-299 C	2.8198	80/20	2.8198
942961	AE2-316 C	4.5989	80/20	4.5989
943151	AE2-344 C	6.6468	80/20	6.6468
943351	AF1-006 C	1.1808	80/20	1.1808
943751	AF1-043	5.2443	Adder	6.17
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	0.5739	Adder	0.68
944181	AF1-086 C O1	1.1348	Adder	1.34
944261	AF1-094 C	1.2530	80/20	1.2530
944281	AF1-096 C	1.5070	80/20	1.5070
944301	AF1-098 C	4.2893	80/20	4.2893
944311	AF1-099 C	3.9477	Adder	4.64
944321	AF1-100 C	9.9765	80/20	9.9765
944381	AF1-103 O1	1.6328	80/20	1.6328
944391	AF1-104 O1	1.8556	80/20	1.8556
944471	AF1-112 C	0.5429	Adder	0.64
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	0.5365	Adder	0.63
944691	AF1-134 C	0.6635	Adder	0.78
944771	AF1-142 C	6.3163	Adder	7.43
944881	AF1-153 C O1	1.1297	80/20	1.1297
944901	AF1-155 C	1.1402	80/20	1.1402
945021	AF1-167 C	1.4331	80/20	1.4331
945051	AF1-170 C	4.4040	80/20	4.4040
945121	AF1-177	0.0644	80/20	0.0644
945161	AF1-181	0.0084	80/20	0.0084
945171	AF1-182	0.0420	80/20	0.0420
945451	AF1-210 C	1.2796	80/20	1.2796
945491	AF1-214 C (Withdrawn : 12/03/2020)	0.5522	Adder	0.65
945751	AF1-240 C O1	1.4520	80/20	1.4520
946111	AF1-276 C	4.8046	80/20	4.8046
946121	AF1-277 C	4.8046	80/20	4.8046
946131	AF1-278 C	3.8322	80/20	3.8322
946221	AF1-287 C	1.1434	80/20	1.1434
946381	AF1-302 C	2.0083	80/20	2.0083
946401	AF1-304 C	8.0226	80/20	8.0226
946421	AF1-306 C	3.9208	80/20	3.9208
946771	AF1-217 C	1.1434	80/20	1.1434
957161	AF2-010 C	4.8493	80/20	4.8493
957451	AF2-039 C	0.4483	Adder	0.53
957571	AF2-051 C	3.3653	80/20	3.3653
957941	AF2-088 C	0.2158	Adder	0.25
958271	AF2-121 C	0.5975	Adder	0.7
958361	AF2-130 C	1.7996	80/20	1.7996
958731	AF2-164 C O1	4.7621	80/20	4.7621
958741	AF2-165 C	1.6175	80/20	1.6175
958751	AF2-166 C	1.7996	80/20	1.7996
959441	AF2-235 C	0.7535	80/20	0.7535
959521	AF2-243 C	1.2131	80/20	1.2131

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960041	AF2-295 C	1.1402	80/20	1.1402
960051	AF2-296 C	0.6635	Adder	0.78
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	13.7037	Adder	16.12
961211	AF2-412	5.8311	Adder	6.86
961971	AG1-040 C	1.1778	80/20	1.1778
962411	AG1-090 C O1	1.5834	Adder	3.51
962511	AG1-100 C	1.1488	80/20	1.1488
962891	AG1-138 C	0.7124	80/20	0.7124
962901	AG1-139 C	0.6403	80/20	0.6403
962911	AG1-140 C	0.1586	80/20	0.1586
962951	AG1-144 C	0.3167	Adder	0.7
963281	AG1-177 C O1	1.2530	80/20	1.2530
963441	AG1-193 C	1.4104	80/20	1.4104
963481	AG1-197 C	0.8893	80/20	0.8893
963491	AG1-198 C	0.7518	80/20	0.7518
963531	AG1-202 C	0.6215	80/20	0.6215
963571	AG1-206 C	0.4663	80/20	0.4663
963891	AG1-242 C	0.1905	Adder	0.42
963991	AG1-253 C	0.2379	80/20	0.2379
964031	AG1-257 C	0.1997	Adder	0.44
964041	AG1-258 C	0.1997	Adder	0.44
964341	AG1-296 C	0.7684	80/20	0.7684
964411	AG1-303 C O1	2.6923	80/20	2.6923
964451	AG1-308 C O1	0.2264	Adder	0.5
965121	AG1-377 C O1	0.3167	Adder	0.7
965131	AG1-378 C O1	0.3167	Adder	0.7
965201	AG1-385 C	1.4526	80/20	1.4526
965241	AG1-389 C O1	0.3312	Adder	0.74
965251	AG1-390 C O1	0.3312	Adder	0.74
965261	AG1-391 C O1	0.3312	Adder	0.74
965271	AG1-392 C O1	0.6623	Adder	1.47
965301	AG1-395 C	0.4069	Adder	0.9
965861	AG1-455	3.3148	80/20	3.3148
966121	AG1-481	1.2679	80/20	1.2679
966771	AG1-548 C	11.8415	80/20	11.8415
G-007A	G-007A	2.0547	Confirmed LTF	2.0547
VFT	VFT	5.6696	Confirmed LTF	5.6696
CALDERWOOD	CALDERWOOD	0.3012	Confirmed LTF	0.3012
PRAIRIE	PRAIRIE	1.8004	Confirmed LTF	1.8004
CHEOAH	CHEOAH	0.3018	Confirmed LTF	0.3018
CBM-N	CBM-N	1.1232	Confirmed LTF	1.1232
COTTONWOOD	COTTONWOOD	1.3566	Confirmed LTF	1.3566
HAMLET	HAMLET	0.2720	Confirmed LTF	0.2720
GIBSON	GIBSON	0.3937	Confirmed LTF	0.3937
BLUEG	BLUEG	1.2499	Confirmed LTF	1.2499
TRIMBLE	TRIMBLE	0.4012	Confirmed LTF	0.4012
CATAWBA	CATAWBA	0.1803	Confirmed LTF	0.1803

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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
167490488	235204	01KITTAN	AP	235139	01AL&D6T	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	121.39	124.03	DC	8.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235030	01MHNG-T155	0.1500	50/50	0.1500
915951	Y3-092 FTIR	68.2300	Merchant Transmission	68.2300
935191	AD1-154	0.9926	Adder	1.17
936881	AD2-112 C	-4.2587	Adder	-5.01
936882	AD2-112 E	-1.6900	Adder	-1.99
938951	AE1-123	1.1755	Adder	1.38
939291	AE1-160 C	0.7334	Adder	0.86
939292	AE1-160 E	0.4216	Adder	0.5
942811	AE2-299 C	1.3984	Adder	1.65
942812	AE2-299 E	5.5934	Adder	6.58
942961	AE2-316 C	2.8226	Adder	3.32
942962	AE2-316 E	4.0250	Adder	4.74
943151	AE2-344 C	3.6184	Adder	4.26
943152	AE2-344 E	2.4122	Adder	2.84
943351	AF1-006 C	0.6405	Adder	0.75
943352	AF1-006 E	0.3603	Adder	0.42
944261	AF1-094 C	0.6071	Adder	0.71
944262	AF1-094 E	0.4047	Adder	0.48
944281	AF1-096 C	0.6930	Adder	0.82
944282	AF1-096 E	0.4620	Adder	0.54
944301	AF1-098 C	2.1665	Adder	2.55
944302	AF1-098 E	1.4443	Adder	1.7
944391	AF1-104 O1	1.1094	Adder	1.31
944881	AF1-153 C O1	0.5589	Adder	0.66
944882	AF1-153 E O1	0.3726	Adder	0.44
944901	AF1-155 C	0.5629	Adder	0.66
944902	AF1-155 E	0.3753	Adder	0.44
945021	AF1-167 C	0.6635	Adder	0.78
945022	AF1-167 E	0.4432	Adder	0.52
945051	AF1-170 C	2.5035	Adder	2.95
945052	AF1-170 E	1.6690	Adder	1.96
945451	AF1-210 C	1.0356	50/50	1.0356
945452	AF1-210 E	0.6904	50/50	0.6904
945751	AF1-240 C O1	0.5956	Adder	0.7
945752	AF1-240 E O1	0.3971	Adder	0.47
946221	AF1-287 C	0.6215	Adder	0.73
946222	AF1-287 E	0.4143	Adder	0.49
946381	AF1-302 C	1.2326	Adder	1.45
946382	AF1-302 E	1.6434	Adder	1.93
946401	AF1-304 C	3.6297	Adder	4.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946402	AF1-304 E	2.4198	Adder	2.85
946771	AF1-217 C	0.6215	Adder	0.73
946772	AF1-217 E	0.4143	Adder	0.49
957161	AF2-010 C	2.3429	Adder	2.76
957162	AF2-010 E	1.5789	Adder	1.86
957571	AF2-051 C	1.8937	Adder	2.23
957572	AF2-051 E	0.9755	Adder	1.15
958361	AF2-130 C	0.7607	Adder	0.89
958362	AF2-130 E	0.5071	Adder	0.6
958731	AF2-164 C O1	2.9935	Adder	3.52
958732	AF2-164 E O1	1.9957	Adder	2.35
958741	AF2-165 C	0.7375	Adder	0.87
958742	AF2-165 E	0.4916	Adder	0.58
958751	AF2-166 C	0.7607	Adder	0.89
958752	AF2-166 E	0.5071	Adder	0.6
959441	AF2-235 C	0.3465	Adder	0.41
959442	AF2-235 E	0.2310	Adder	0.27
959521	AF2-243 C	0.5531	Adder	0.65
959522	AF2-243 E	0.3687	Adder	0.43
959822	AF2-273 E	0.3872	50/50	0.3872
960041	AF2-295 C	0.5629	Adder	0.66
960042	AF2-295 E	0.3753	Adder	0.44
960891	AF2-380 C	0.4212	Adder	0.5
960892	AF2-380 E	0.2808	Adder	0.33
961971	AG1-040 C	0.3467	Adder	0.77
961972	AG1-040 E	0.2311	Adder	0.51
962511	AG1-100 C	0.3370	Adder	0.75
962512	AG1-100 E	0.2246	Adder	0.5
962891	AG1-138 C	0.1596	Adder	0.35
962892	AG1-138 E	0.0084	Adder	0.02
962901	AG1-139 C	0.1547	Adder	0.34
962902	AG1-139 E	0.0081	Adder	0.02
962911	AG1-140 C	0.0417	Adder	0.09
962912	AG1-140 E	0.0190	Adder	0.04
963281	AG1-177 C O1	0.3218	Adder	0.71
963282	AG1-177 E O1	0.2145	Adder	0.48
963441	AG1-193 C	0.3871	Adder	0.86
963442	AG1-193 E	0.2581	Adder	0.57
963481	AG1-197 C	0.2630	Adder	0.58
963482	AG1-197 E	0.1753	Adder	0.39
963491	AG1-198 C	0.1931	Adder	0.43
963492	AG1-198 E	0.1287	Adder	0.29
963531	AG1-202 C	0.1899	Adder	0.42
963532	AG1-202 E	0.0978	Adder	0.22
963991	AG1-253 C	0.0625	Adder	0.14
963992	AG1-253 E	0.0301	Adder	0.07
964341	AG1-296 C	0.2576	Adder	0.57
964342	AG1-296 E	0.1387	Adder	0.31
964411	AG1-303 C O1	0.8029	Adder	1.78
964412	AG1-303 E O1	0.5353	Adder	1.19
965201	AG1-385 C	0.3809	Adder	0.85
965202	AG1-385 E	0.1128	Adder	0.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
965861	AG1-455	0.9987	Adder	2.22
966453	AG1-514 BAT	0.5298	Merchant Transmission	0.5298
966771	AG1-548 C	3.0541	Adder	6.78
966772	AG1-548 E	0.9295	Adder	2.06
G-007A	G-007A	1.4025	Confirmed LTF	1.4025
VFT	VFT	3.8700	Confirmed LTF	3.8700
CALDERWOOD	CALDERWOOD	0.1834	Confirmed LTF	0.1834
PRAIRIE	PRAIRIE	1.0435	Confirmed LTF	1.0435
CHEOAH	CHEOAH	0.1842	Confirmed LTF	0.1842
CBM-N	CBM-N	0.7656	Confirmed LTF	0.7656
COTTONWOOD	COTTONWOOD	0.8064	Confirmed LTF	0.8064
HAMLET	HAMLET	0.1784	Confirmed LTF	0.1784
GIBSON	GIBSON	0.2266	Confirmed LTF	0.2266
BLUEG	BLUEG	0.7222	Confirmed LTF	0.7222
TRIMBLE	TRIMBLE	0.2315	Confirmed LTF	0.2315
CATAWBA	CATAWBA	0.1151	Confirmed LTF	0.1151

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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
167490359	235240	01COLMBGPN	AP	235202	01KISKIV	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	180.0	183.15	DC	10.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235030	01MHNG-T155	0.1762	50/50	0.1762
235134	01AL&D6	0.1825	50/50	0.1825
915951	Y3-092 FTIR	82.2700	Merchant Transmission	82.2700
935191	AD1-154	1.1432	Adder	1.34
936881	AD2-112 C	-2.1694	Adder	-2.55
936882	AD2-112 E	-0.8609	Adder	-1.01
938951	AE1-123	1.4097	Adder	1.66
939291	AE1-160 C	0.8797	Adder	1.03
939292	AE1-160 E	0.5056	Adder	0.59
941191	AE2-113 C	2.8350	Adder	3.34
941192	AE2-113 E	3.0524	Adder	3.59
942811	AE2-299 C	1.6660	Adder	1.96
942812	AE2-299 E	6.6640	Adder	7.84
942961	AE2-316 C	3.4396	Adder	4.05
942962	AE2-316 E	4.9049	Adder	5.77
943151	AE2-344 C	4.3415	Adder	5.11
943152	AE2-344 E	2.8943	Adder	3.41
943351	AF1-006 C	0.7677	Adder	0.9
943352	AF1-006 E	0.4318	Adder	0.51
944261	AF1-094 C	0.7265	Adder	0.85
944262	AF1-094 E	0.4844	Adder	0.57
944281	AF1-096 C	0.8312	Adder	0.98
944282	AF1-096 E	0.5541	Adder	0.65
944301	AF1-098 C	2.5835	Adder	3.04
944302	AF1-098 E	1.7223	Adder	2.03
944381	AF1-103 O1	0.9957	Adder	1.17
944391	AF1-104 O1	1.3352	Adder	1.57
944881	AF1-153 C O1	0.6661	Adder	0.78
944882	AF1-153 E O1	0.4440	Adder	0.52
944901	AF1-155 C	0.6712	Adder	0.79
944902	AF1-155 E	0.4474	Adder	0.53
945021	AF1-167 C	0.9419	50/50	0.9419
945022	AF1-167 E	0.6291	50/50	0.6291
945051	AF1-170 C	3.0090	Adder	3.54
945052	AF1-170 E	2.0060	Adder	2.36
945451	AF1-210 C	1.2366	50/50	1.2366
945452	AF1-210 E	0.8244	50/50	0.8244
945751	AF1-240 C O1	0.6859	Adder	0.81
945752	AF1-240 E O1	0.4573	Adder	0.54
946111	AF1-276 C	3.0650	Adder	3.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946112	AF1-276 E	1.5097	Adder	1.78
946121	AF1-277 C	3.0650	Adder	3.61
946122	AF1-277 E	1.5097	Adder	1.78
946131	AF1-278 C	2.4447	Adder	2.88
946132	AF1-278 E	1.2150	Adder	1.43
946221	AF1-287 C	0.7457	Adder	0.88
946222	AF1-287 E	0.4971	Adder	0.58
946381	AF1-302 C	1.5020	Adder	1.77
946382	AF1-302 E	2.0027	Adder	2.36
946401	AF1-304 C	4.3569	Adder	5.13
946402	AF1-304 E	2.9046	Adder	3.42
946421	AF1-306 C	2.4158	Adder	2.84
946422	AF1-306 E	9.6633	Adder	11.37
946771	AF1-217 C	0.7457	Adder	0.88
946772	AF1-217 E	0.4971	Adder	0.58
957161	AF2-010 C	2.8043	Adder	3.3
957162	AF2-010 E	1.8898	Adder	2.22
957571	AF2-051 C	2.2793	Adder	2.68
957572	AF2-051 E	1.1742	Adder	1.38
958361	AF2-130 C	0.9128	Adder	1.07
958362	AF2-130 E	0.6085	Adder	0.72
958731	AF2-164 C O1	3.6169	Adder	4.26
958732	AF2-164 E O1	2.4113	Adder	2.84
958741	AF2-165 C	0.8858	Adder	1.04
958742	AF2-165 E	0.5905	Adder	0.69
958751	AF2-166 C	0.9128	Adder	1.07
958752	AF2-166 E	0.6085	Adder	0.72
959441	AF2-235 C	0.4156	Adder	0.49
959442	AF2-235 E	0.2771	Adder	0.33
959521	AF2-243 C	0.6643	Adder	0.78
959522	AF2-243 E	0.4429	Adder	0.52
959822	AF2-273 E	0.4640	50/50	0.4640
960041	AF2-295 C	0.6712	Adder	0.79
960042	AF2-295 E	0.4474	Adder	0.53
960891	AF2-380 C	0.4951	Adder	0.58
960892	AF2-380 E	0.3301	Adder	0.39
961971	AG1-040 C	0.4167	Adder	0.92
961972	AG1-040 E	0.2778	Adder	0.62
962511	AG1-100 C	0.4046	Adder	0.9
962512	AG1-100 E	0.2698	Adder	0.6
962891	AG1-138 C	0.1915	Adder	0.43
962892	AG1-138 E	0.0101	Adder	0.02
962901	AG1-139 C	0.1858	Adder	0.41
962902	AG1-139 E	0.0098	Adder	0.02
962911	AG1-140 C	0.0497	Adder	0.11
962912	AG1-140 E	0.0226	Adder	0.05
963281	AG1-177 C O1	0.3851	Adder	0.85
963282	AG1-177 E O1	0.2567	Adder	0.57
963441	AG1-193 C	0.4659	Adder	1.03
963442	AG1-193 E	0.3106	Adder	0.69
963481	AG1-197 C	0.3162	Adder	0.7
963482	AG1-197 E	0.2108	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963491	AG1-198 C	0.2310	Adder	0.51
963492	AG1-198 E	0.1540	Adder	0.34
963531	AG1-202 C	0.2284	Adder	0.51
963532	AG1-202 E	0.1176	Adder	0.26
963571	AG1-206 C	0.1499	Adder	0.33
963572	AG1-206 E	0.0807	Adder	0.18
963991	AG1-253 C	0.0745	Adder	0.17
963992	AG1-253 E	0.0359	Adder	0.08
964341	AG1-296 C	0.6993	50/50	0.6993
964342	AG1-296 E	0.3765	50/50	0.3765
964411	AG1-303 C O1	0.9664	Adder	2.15
964412	AG1-303 E O1	0.6443	Adder	1.43
965201	AG1-385 C	0.4539	Adder	1.01
965202	AG1-385 E	0.1344	Adder	0.3
965861	AG1-455	1.2004	Adder	2.66
966121	AG1-481	0.4098	Adder	0.91
966453	AG1-514 BAT	0.2684	Merchant Transmission	0.2684
966771	AG1-548 C	3.6540	Adder	8.11
966772	AG1-548 E	1.1121	Adder	2.47
G-007A	G-007A	1.4505	Confirmed LTF	1.4505
VFT	VFT	4.0119	Confirmed LTF	4.0119
CALDERWOOD	CALDERWOOD	0.2112	Confirmed LTF	0.2112
PRAIRIE	PRAIRIE	1.2063	Confirmed LTF	1.2063
CHEOAH	CHEOAH	0.2122	Confirmed LTF	0.2122
CBM-N	CBM-N	0.8004	Confirmed LTF	0.8004
COTTONWOOD	COTTONWOOD	0.9303	Confirmed LTF	0.9303
HAMLET	HAMLET	0.2050	Confirmed LTF	0.2050
GIBSON	GIBSON	0.2621	Confirmed LTF	0.2621
BLUEG	BLUEG	0.8333	Confirmed LTF	0.8333
TRIMBLE	TRIMBLE	0.2677	Confirmed LTF	0.2677
CATAWBA	CATAWBA	0.1326	Confirmed LTF	0.1326

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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
164792876	235248	01SHINGL	AP	966040	AG1-473 TAP	AP	1	ATSI-P1-2-CEI-345-700T	single	621.0	132.91	134.6	DC	10.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	5.8194	80/20	5.8194
200643	26SENECA#2	5.4961	80/20	5.4961
200644	26SENECA#3	0.6006	80/20	0.6006
200649	26PENNTech	1.5002	80/20	1.5002
200665	26SHAWVL 3	9.0998	80/20	9.0998
200666	26SHAWVL 4	8.9582	80/20	8.9582
200715	26SHAWVL 1	5.7047	80/20	5.7047
200722	26SHAWVL 2	5.8358	80/20	5.8358
200849	26LAKVU GN	0.0759	80/20	0.0759
200887	26ARMNA MT	0.2231	80/20	0.2231
200905	26Q36	0.1708	80/20	0.1708
200913	26SHAW-D	0.2447	80/20	0.2447
201201	26WRREN CT	1.2716	80/20	1.2716
203261	26BLOSSBCT	0.3208	80/20	0.3208
203349	26Z1-069 C	0.2269	80/20	0.2269
203351	26GROZ1-110	0.4390	80/20	0.4390
203352	26CANZ2-011	0.4308	80/20	0.4308
203922	X1-109 G1	5.5905	80/20	5.5905
203923	X1-109 G2	5.5905	80/20	5.5905
919201	AA1-144 OP	15.8990	80/20	15.8990
921642	AA2-000	115.9583	80/20	115.9583
930511	AB2-092	4.2576	80/20	4.2576
931091	AB1-160 C	0.0648	80/20	0.0648
936421	AD2-055	8.7657	80/20	8.7657
936991	AD2-133 C	2.3479	80/20	2.3479
939171	AE1-147 C	5.9105	80/20	5.9105
940201	AE2-001 C	5.9323	80/20	5.9323
940681	AE2-055 C (Suspended)	6.2647	80/20	6.2647
940861	AE2-074 C	1.8019	80/20	1.8019
941191	AE2-113 C	10.8793	80/20	10.8793
941261	AE2-120 C	5.9442	80/20	5.9442
941271	AE2-121 C	3.1222	80/20	3.1222
941321	AE2-126 C	2.8931	80/20	2.8931
941331	AE2-129 C	2.2558	80/20	2.2558
941351	AE2-131 C (Suspended)	2.2558	80/20	2.2558
941421	AE2-139 C	6.4087	80/20	6.4087
942351	AE2-248 C	4.9008	80/20	4.9008
942491	AE2-262 C	20.0310	80/20	20.0310
942501	AE2-263 C	18.8291	80/20	18.8291
942811	AE2-299 C	3.0755	80/20	3.0755
942961	AE2-316 C	7.3178	80/20	7.3178

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943151	AE2-344 C	6.2567	80/20	6.2567
943351	AF1-006 C	1.1832	80/20	1.1832
943751	AF1-043	26.2972	80/20	26.2972
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	6.5789	80/20	6.5789
944181	AF1-086 C O1	2.3218	80/20	2.3218
944261	AF1-094 C	1.0902	80/20	1.0902
944301	AF1-098 C	5.0429	80/20	5.0429
944311	AF1-099 C	30.4071	80/20	30.4071
944321	AF1-100 C	49.6140	80/20	49.6140
944381	AF1-103 O1	2.8280	80/20	2.8280
944391	AF1-104 O1	1.7472	80/20	1.7472
944471	AF1-112 C	6.0896	80/20	6.0896
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	6.1913	80/20	6.1913
944691	AF1-134 C	2.1056	80/20	2.1056
944771	AF1-142 C	48.6513	80/20	48.6513
944881	AF1-153 C O1	2.9090	80/20	2.9090
944901	AF1-155 C	2.8891	80/20	2.8891
945051	AF1-170 C	4.0869	80/20	4.0869
945121	AF1-177	0.1116	80/20	0.1116
945161	AF1-181	0.0418	80/20	0.0418
945171	AF1-182	0.2096	80/20	0.2096
945181	AF1-183	0.0468	80/20	0.0468
945331	AF1-198	0.0422	80/20	0.0422
945491	AF1-214 C (Withdrawn : 12/03/2020)	5.9435	80/20	5.9435
946111	AF1-276 C	8.6048	80/20	8.6048
946121	AF1-277 C	8.6048	80/20	8.6048
946131	AF1-278 C	6.8633	80/20	6.8633
946221	AF1-287 C	1.0728	80/20	1.0728
946381	AF1-302 C	3.1955	80/20	3.1955
946421	AF1-306 C	12.7475	80/20	12.7475
946771	AF1-217 C	1.0728	80/20	1.0728
957161	AF2-010 C	4.1616	80/20	4.1616
957451	AF2-039 C	2.0933	80/20	2.0933
957941	AF2-088 C	1.0079	80/20	1.0079
958271	AF2-121 C	2.2558	80/20	2.2558
959061	AF2-197 C O1	3.5667	80/20	3.5667
959471	AF2-238 C	1.1756	80/20	1.1756
959741	AF2-265 C	0.8425	80/20	0.8425
960041	AF2-295 C	2.8891	80/20	2.8891
960051	AF2-296 C	2.1056	80/20	2.1056
961211	AF2-412	11.4920	80/20	11.4920
962411	AG1-090 C O1	11.2788	80/20	11.2788
962511	AG1-100 C	1.0580	80/20	1.0580
962911	AG1-140 C	0.1730	80/20	0.1730
962951	AG1-144 C	2.2558	80/20	2.2558
963281	AG1-177 C O1	1.0902	80/20	1.0902
963491	AG1-198 C	0.6541	80/20	0.6541
963531	AG1-202 C	0.5791	80/20	0.5791

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963571	AG1-206 C	1.5385	80/20	1.5385
963891	AG1-242 C	1.1406	80/20	1.1406
963991	AG1-253 C	0.2595	80/20	0.2595
964031	AG1-257 C	4.1916	80/20	4.1916
964041	AG1-258 C	4.1916	80/20	4.1916
964341	AG1-296 C	1.0283	80/20	1.0283
964451	AG1-308 C O1	1.7385	80/20	1.7385
965121	AG1-377 C O1	2.2558	80/20	2.2558
965131	AG1-378 C O1	2.2558	80/20	2.2558
965201	AG1-385 C	3.7405	80/20	3.7405
965241	AG1-389 C O1	1.3292	80/20	1.3292
965251	AG1-390 C O1	1.3292	80/20	1.3292
965261	AG1-391 C O1	1.3292	80/20	1.3292
965271	AG1-392 C O1	2.6585	80/20	2.6585
965301	AG1-395 C	2.8987	80/20	2.8987
965861	AG1-455	3.0761	80/20	3.0761
966121	AG1-481	2.1959	80/20	2.1959
966771	AG1-548 C	10.5087	80/20	10.5087
WEC	WEC	0.0869	Confirmed LTF	0.0869
LGEE	LGEE	0.1608	Confirmed LTF	0.1608
CBM-W2	CBM-W2	1.8906	Confirmed LTF	1.8906
TVA	TVA	0.2394	Confirmed LTF	0.2394
SIGE	SIGE	0.1545	Confirmed LTF	0.1545
CBM-S2	CBM-S2	0.1984	Confirmed LTF	0.1984
CBM-S1	CBM-S1	0.0707	Confirmed LTF	0.0707
HAMLET	HAMLET	0.0098	Confirmed LTF	0.0098
MEC	MEC	0.4020	Confirmed LTF	0.4020
LAGN	LAGN	0.3115	Confirmed LTF	0.3115
CBM-W1	CBM-W1	4.2200	Confirmed LTF	4.2200

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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
167490357	235282	01GAR RN	AP	235240	01COLMBGPN	AP	1	ATSI-P2-3-CEI-345-004D	breaker	151.0	182.31	185.47	DC	10.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
235030	01MHNG-T155	0.1762	50/50	0.1762
235134	01AL&D6	0.1825	50/50	0.1825
915951	Y3-092 FTIR	82.2700	Merchant Transmission	82.2700
935191	AD1-154	1.1432	Adder	1.34
936881	AD2-112 C	-2.1694	Adder	-2.55
936882	AD2-112 E	-0.8609	Adder	-1.01
938951	AE1-123	1.4097	Adder	1.66
939291	AE1-160 C	0.8797	Adder	1.03
939292	AE1-160 E	0.5056	Adder	0.59
941191	AE2-113 C	2.8350	Adder	3.34
941192	AE2-113 E	3.0524	Adder	3.59
942811	AE2-299 C	1.6660	Adder	1.96
942812	AE2-299 E	6.6640	Adder	7.84
942961	AE2-316 C	3.4396	Adder	4.05
942962	AE2-316 E	4.9049	Adder	5.77
943151	AE2-344 C	4.3415	Adder	5.11
943152	AE2-344 E	2.8943	Adder	3.41
943351	AF1-006 C	0.7677	Adder	0.9
943352	AF1-006 E	0.4318	Adder	0.51
944261	AF1-094 C	0.7265	Adder	0.85
944262	AF1-094 E	0.4844	Adder	0.57
944281	AF1-096 C	0.8312	Adder	0.98
944282	AF1-096 E	0.5541	Adder	0.65
944301	AF1-098 C	2.5835	Adder	3.04
944302	AF1-098 E	1.7223	Adder	2.03
944381	AF1-103 O1	0.9957	Adder	1.17
944391	AF1-104 O1	1.3352	Adder	1.57
944881	AF1-153 C O1	0.6661	Adder	0.78
944882	AF1-153 E O1	0.4440	Adder	0.52
944901	AF1-155 C	0.6712	Adder	0.79
944902	AF1-155 E	0.4474	Adder	0.53
945021	AF1-167 C	0.9419	50/50	0.9419
945022	AF1-167 E	0.6291	50/50	0.6291
945051	AF1-170 C	3.0090	Adder	3.54
945052	AF1-170 E	2.0060	Adder	2.36
945451	AF1-210 C	1.2366	50/50	1.2366
945452	AF1-210 E	0.8244	50/50	0.8244
945751	AF1-240 C O1	0.6859	Adder	0.81
945752	AF1-240 E O1	0.4573	Adder	0.54
946111	AF1-276 C	3.0650	Adder	3.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946112	AF1-276 E	1.5097	Adder	1.78
946121	AF1-277 C	3.0650	Adder	3.61
946122	AF1-277 E	1.5097	Adder	1.78
946131	AF1-278 C	2.4447	Adder	2.88
946132	AF1-278 E	1.2150	Adder	1.43
946221	AF1-287 C	0.7457	Adder	0.88
946222	AF1-287 E	0.4971	Adder	0.58
946381	AF1-302 C	1.5020	Adder	1.77
946382	AF1-302 E	2.0027	Adder	2.36
946401	AF1-304 C	4.3569	Adder	5.13
946402	AF1-304 E	2.9046	Adder	3.42
946421	AF1-306 C	2.4158	Adder	2.84
946422	AF1-306 E	9.6633	Adder	11.37
946771	AF1-217 C	0.7457	Adder	0.88
946772	AF1-217 E	0.4971	Adder	0.58
957161	AF2-010 C	2.8043	Adder	3.3
957162	AF2-010 E	1.8898	Adder	2.22
957571	AF2-051 C	2.2793	Adder	2.68
957572	AF2-051 E	1.1742	Adder	1.38
958361	AF2-130 C	0.9128	Adder	1.07
958362	AF2-130 E	0.6085	Adder	0.72
958731	AF2-164 C O1	3.6169	Adder	4.26
958732	AF2-164 E O1	2.4113	Adder	2.84
958741	AF2-165 C	0.8858	Adder	1.04
958742	AF2-165 E	0.5905	Adder	0.69
958751	AF2-166 C	0.9128	Adder	1.07
958752	AF2-166 E	0.6085	Adder	0.72
959441	AF2-235 C	0.4156	Adder	0.49
959442	AF2-235 E	0.2771	Adder	0.33
959521	AF2-243 C	0.6643	Adder	0.78
959522	AF2-243 E	0.4429	Adder	0.52
959822	AF2-273 E	0.4640	50/50	0.4640
960041	AF2-295 C	0.6712	Adder	0.79
960042	AF2-295 E	0.4474	Adder	0.53
960891	AF2-380 C	0.4951	Adder	0.58
960892	AF2-380 E	0.3301	Adder	0.39
961971	AG1-040 C	0.4167	Adder	0.92
961972	AG1-040 E	0.2778	Adder	0.62
962511	AG1-100 C	0.4046	Adder	0.9
962512	AG1-100 E	0.2698	Adder	0.6
962891	AG1-138 C	0.1915	Adder	0.43
962892	AG1-138 E	0.0101	Adder	0.02
962901	AG1-139 C	0.1858	Adder	0.41
962902	AG1-139 E	0.0098	Adder	0.02
962911	AG1-140 C	0.0497	Adder	0.11
962912	AG1-140 E	0.0226	Adder	0.05
963281	AG1-177 C O1	0.3851	Adder	0.85
963282	AG1-177 E O1	0.2567	Adder	0.57
963441	AG1-193 C	0.4659	Adder	1.03
963442	AG1-193 E	0.3106	Adder	0.69
963481	AG1-197 C	0.3162	Adder	0.7
963482	AG1-197 E	0.2108	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963491	AG1-198 C	0.2310	Adder	0.51
963492	AG1-198 E	0.1540	Adder	0.34
963531	AG1-202 C	0.2284	Adder	0.51
963532	AG1-202 E	0.1176	Adder	0.26
963571	AG1-206 C	0.1499	Adder	0.33
963572	AG1-206 E	0.0807	Adder	0.18
963991	AG1-253 C	0.0745	Adder	0.17
963992	AG1-253 E	0.0359	Adder	0.08
964341	AG1-296 C	0.6993	50/50	0.6993
964342	AG1-296 E	0.3765	50/50	0.3765
964411	AG1-303 C O1	0.9664	Adder	2.15
964412	AG1-303 E O1	0.6443	Adder	1.43
965201	AG1-385 C	0.4539	Adder	1.01
965202	AG1-385 E	0.1344	Adder	0.3
965861	AG1-455	1.2004	Adder	2.66
966121	AG1-481	0.4098	Adder	0.91
966453	AG1-514 BAT	0.2684	Merchant Transmission	0.2684
966771	AG1-548 C	3.6540	Adder	8.11
966772	AG1-548 E	1.1121	Adder	2.47
G-007A	G-007A	1.4505	Confirmed LTF	1.4505
VFT	VFT	4.0119	Confirmed LTF	4.0119
CALDERWOOD	CALDERWOOD	0.2112	Confirmed LTF	0.2112
PRAIRIE	PRAIRIE	1.2063	Confirmed LTF	1.2063
CHEOAH	CHEOAH	0.2122	Confirmed LTF	0.2122
CBM-N	CBM-N	0.8004	Confirmed LTF	0.8004
COTTONWOOD	COTTONWOOD	0.9303	Confirmed LTF	0.9303
HAMLET	HAMLET	0.2050	Confirmed LTF	0.2050
GIBSON	GIBSON	0.2621	Confirmed LTF	0.2621
BLUEG	BLUEG	0.8333	Confirmed LTF	0.8333
TRIMBLE	TRIMBLE	0.2677	Confirmed LTF	0.2677
CATAWBA	CATAWBA	0.1326	Confirmed LTF	0.1326

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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
164792722	238547	02AT	ATSI	239036	02PERRY	ATSI	1	ATSI-P2-4-CEI-138-125B	breaker	1891.0	103.69	107.23	DC	66.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200662	26SCRUB GR	4.3801	50/50	4.3801
200828	26HNSMLK 1	2.9468	50/50	2.9468
200829	26HNSMLK 2	2.9468	50/50	2.9468
200830	26HNSMLK 3	2.9468	50/50	2.9468
200831	26HNSMLK 4	2.9468	50/50	2.9468
200832	26HNSMLK 5	2.9468	50/50	2.9468
200849	26LAKVU GN	0.3924	50/50	0.3924
200894	26K02	7.0496	Adder	8.29
201201	26WRREN CT	3.1174	50/50	3.1174
203999	P-047 E	10.8618	Adder	12.78
915951	Y3-092 FTIR	567.0700	50/50	567.0700
916202	Z1-069 E	9.2727	Adder	10.91
920341	AA2-132 (Withdrawn : 12/07/2020)	2.5575	Adder	3.01
921642	AA2-000	61.6614	Adder	72.54
930511	AB2-092	2.2640	Adder	2.66
931092	AB1-160 E	2.6493	Adder	3.12
935191	AD1-154	3.0649	Adder	3.61
936421	AD2-055	4.6612	Adder	5.48
938951	AE1-123	3.3322	Adder	3.92
939291	AE1-160 C	4.4895	50/50	4.4895
939292	AE1-160 E	2.5805	50/50	2.5805
940861	AE2-074 C	2.6662	Adder	3.14
940862	AE2-074 E	3.5096	Adder	4.13
941191	AE2-113 C	11.4731	Adder	13.5
941192	AE2-113 E	12.3529	Adder	14.53
941321	AE2-126 C	1.8861	Adder	2.22
941322	AE2-126 E	1.2574	Adder	1.48
942491	AE2-262 C	6.5629	Adder	7.72
942492	AE2-262 E	4.4102	Adder	5.19
942501	AE2-263 C	6.1691	Adder	7.26
942502	AE2-263 E	4.1188	Adder	4.85
942811	AE2-299 C	15.1680	50/50	15.1680
942812	AE2-299 E	60.6720	50/50	60.6720
942961	AE2-316 C	6.4542	Adder	7.59
942962	AE2-316 E	9.2037	Adder	10.83
943151	AE2-344 C	34.1133	50/50	34.1133
943152	AE2-344 E	22.7422	50/50	22.7422
943351	AF1-006 C	6.5362	50/50	6.5362
943352	AF1-006 E	3.6766	50/50	3.6766
943751	AF1-043	13.9837	Adder	16.45

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944261	AF1-094 C	5.2748	50/50	5.2748
944262	AF1-094 E	3.5166	50/50	3.5166
944281	AF1-096 C	4.2420	50/50	4.2420
944282	AF1-096 E	2.8280	50/50	2.8280
944301	AF1-098 C	22.1078	50/50	22.1078
944302	AF1-098 E	14.7386	50/50	14.7386
944311	AF1-099 C	9.9624	Adder	11.72
944312	AF1-099 E	6.6416	Adder	7.81
944321	AF1-100 C	21.0681	Adder	24.79
944322	AF1-100 E	14.0454	Adder	16.52
944381	AF1-103 O1	6.9330	50/50	6.9330
944391	AF1-104 O1	10.8708	50/50	10.8708
944411	AF1-106 O1	2.7074	Adder	3.19
944691	AF1-134 C	1.5138	Adder	1.78
944692	AF1-134 E	1.0092	Adder	1.19
944771	AF1-142 C	15.9399	Adder	18.75
944772	AF1-142 E	10.6266	Adder	12.5
944881	AF1-153 C O1	1.9300	Adder	2.27
944882	AF1-153 E O1	1.2867	Adder	1.51
944901	AF1-155 C	1.9302	Adder	2.27
944902	AF1-155 E	1.2868	Adder	1.51
945021	AF1-167 C	1.2162	Adder	1.43
945022	AF1-167 E	0.8123	Adder	0.96
945051	AF1-170 C	23.5843	50/50	23.5843
945052	AF1-170 E	15.7229	50/50	15.7229
945121	AF1-177	0.2735	50/50	0.2735
945451	AF1-210 C	1.3295	Adder	1.56
945452	AF1-210 E	0.8863	Adder	1.04
945751	AF1-240 C O1	1.8390	Adder	2.16
945752	AF1-240 E O1	1.2260	Adder	1.44
946111	AF1-276 C	14.1350	Adder	16.63
946112	AF1-276 E	6.9620	Adder	8.19
946121	AF1-277 C	14.1350	Adder	16.63
946122	AF1-277 E	6.9620	Adder	8.19
946131	AF1-278 C	11.2742	Adder	13.26
946132	AF1-278 E	5.6034	Adder	6.59
946211	AF1-286 C	1.0965	Adder	1.29
946212	AF1-286 E	0.7445	Adder	0.88
946221	AF1-287 C	5.8292	50/50	5.8292
946222	AF1-287 E	3.8862	50/50	3.8862
946381	AF1-302 C	2.8184	Adder	3.32
946382	AF1-302 E	3.7579	Adder	4.42
946401	AF1-304 C	19.2276	50/50	19.2276
946402	AF1-304 E	12.8184	50/50	12.8184
946421	AF1-306 C	8.2247	Adder	9.68
946422	AF1-306 E	32.8988	Adder	38.7
946771	AF1-217 C	5.8292	50/50	5.8292
946772	AF1-217 E	3.8862	50/50	3.8862
957161	AF2-010 C	20.0321	50/50	20.0321
957162	AF2-010 E	13.4999	50/50	13.4999
957451	AF2-039 C	1.1106	Adder	1.31
957452	AF2-039 E	0.7404	Adder	0.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957571	AF2-051 C	14.4279	50/50	14.4279
957572	AF2-051 E	7.4326	50/50	7.4326
957941	AF2-088 C	0.5347	Adder	0.63
957942	AF2-088 E	0.3565	Adder	0.42
958361	AF2-130 C	2.6771	Adder	3.15
958362	AF2-130 E	1.7847	Adder	2.1
958731	AF2-164 C O1	16.7578	50/50	16.7578
958732	AF2-164 E O1	11.1718	50/50	11.1718
958741	AF2-165 C	3.7702	50/50	3.7702
958742	AF2-165 E	2.5134	50/50	2.5134
958751	AF2-166 C	2.6771	Adder	3.15
958752	AF2-166 E	1.7847	Adder	2.1
959441	AF2-235 C	2.1210	50/50	2.1210
959442	AF2-235 E	1.4140	50/50	1.4140
959471	AF2-238 C	1.5818	Adder	1.86
959472	AF2-238 E	1.0545	Adder	1.24
959491	AF2-240 C	0.5117	Adder	0.6
959492	AF2-240 E	0.4359	Adder	0.51
959501	AF2-241 C	1.5297	Adder	1.8
959502	AF2-241 E	1.1777	Adder	1.39
959521	AF2-243 C	2.8276	50/50	2.8276
959522	AF2-243 E	1.8851	50/50	1.8851
959741	AF2-265 C	1.1336	Adder	1.33
959742	AF2-265 E	0.8436	Adder	0.99
959822	AF2-273 E	0.5334	Adder	0.63
960031	AF2-294 C	1.5422	Adder	1.81
960032	AF2-294 E	1.0282	Adder	1.21
960041	AF2-295 C	1.9302	Adder	2.27
960042	AF2-295 E	1.2868	Adder	1.51
960051	AF2-296 C	1.5138	Adder	1.78
960052	AF2-296 E	1.0092	Adder	1.19
961141	AF2-405	1.3537	Adder	1.59
961151	AF2-406	10.1528	Adder	11.94
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	42.7839	Adder	50.33
961211	AF2-412	18.3563	Adder	21.6
961971	AG1-040 C	5.6059	50/50	5.6059
961972	AG1-040 E	3.7373	50/50	3.7373
962511	AG1-100 C	5.8564	50/50	5.8564
962512	AG1-100 E	3.9042	50/50	3.9042
962891	AG1-138 C	0.5616	Adder	1.25
962892	AG1-138 E	0.0296	Adder	0.07
962901	AG1-139 C	1.4924	50/50	1.4924
962902	AG1-139 E	0.0785	50/50	0.0785
962911	AG1-140 C	0.8532	50/50	0.8532
962912	AG1-140 E	0.3887	50/50	0.3887
963281	AG1-177 C O1	5.2748	50/50	5.2748
963282	AG1-177 E O1	3.5166	50/50	3.5166
963441	AG1-193 C	4.4159	50/50	4.4159
963442	AG1-193 E	2.9439	50/50	2.9439
963481	AG1-197 C	4.1663	50/50	4.1663
963482	AG1-197 E	2.7775	50/50	2.7775
963491	AG1-198 C	3.1649	50/50	3.1649

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963492	AG1-198 E	2.1099	50/50	2.1099
963531	AG1-202 C	3.4156	50/50	3.4156
963532	AG1-202 E	1.7595	50/50	1.7595
963571	AG1-206 C	0.5589	Adder	1.24
963572	AG1-206 E	0.3010	Adder	0.67
963891	AG1-242 C	0.4346	Adder	0.96
963892	AG1-242 E	0.2340	Adder	0.52
963941	AG1-247 C	0.3516	Adder	0.78
963942	AG1-247 E	0.1865	Adder	0.41
963991	AG1-253 C	1.2798	50/50	1.2798
963992	AG1-253 E	0.6162	50/50	0.6162
964341	AG1-296 C	0.5337	Adder	1.18
964342	AG1-296 E	0.2874	Adder	0.64
964411	AG1-303 C O1	11.5423	50/50	11.5423
964412	AG1-303 E O1	7.6949	50/50	7.6949
964451	AG1-308 C O1	0.5652	Adder	1.25
964452	AG1-308 E O1	0.7900	Adder	1.75
964701	AG1-333 C	0.2997	Adder	0.67
964702	AG1-333 E	0.0409	Adder	0.09
965201	AG1-385 C	1.3153	Adder	2.92
965202	AG1-385 E	0.3896	Adder	0.86
965241	AG1-389 C O1	1.0596	Adder	2.35
965242	AG1-389 E O1	0.7064	Adder	1.57
965251	AG1-390 C O1	1.0596	Adder	2.35
965252	AG1-390 E O1	0.7064	Adder	1.57
965261	AG1-391 C O1	1.0596	Adder	2.35
965262	AG1-391 E O1	0.7064	Adder	1.57
965271	AG1-392 C O1	2.1192	Adder	4.7
965272	AG1-392 E O1	1.4128	Adder	3.14
965861	AG1-455	17.7516	50/50	17.7516
966121	AG1-481	5.3835	50/50	5.3835
966771	AG1-548 C	51.2256	50/50	51.2256
966772	AG1-548 E	15.5904	50/50	15.5904
G-007A	G-007A	10.2157	Confirmed LTF	10.2157
VFT	VFT	27.9221	Confirmed LTF	27.9221
CALDERWOOD	CALDERWOOD	1.2862	Confirmed LTF	1.2862
PRAIRIE	PRAIRIE	8.5058	Confirmed LTF	8.5058
CHEOAH	CHEOAH	1.2853	Confirmed LTF	1.2853
CBM-N	CBM-N	5.4048	Confirmed LTF	5.4048
COTTONWOOD	COTTONWOOD	6.1089	Confirmed LTF	6.1089
HAMLET	HAMLET	0.9962	Confirmed LTF	0.9962
GIBSON	GIBSON	1.8766	Confirmed LTF	1.8766
BLUEG	BLUEG	5.8607	Confirmed LTF	5.8607
TRIMBLE	TRIMBLE	1.8821	Confirmed LTF	1.8821
CATAWBA	CATAWBA	0.6958	Confirmed LTF	0.6958

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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
164793573	239036	02PERRY	ATSI	239334	02L.CENTER	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	135.48	138.3	DC	46.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200828	26HNSMLK 1	2.0560	50/50	2.0560
200829	26HNSMLK 2	2.0560	50/50	2.0560
200830	26HNSMLK 3	2.0560	50/50	2.0560
200831	26HNSMLK 4	2.0560	50/50	2.0560
200832	26HNSMLK 5	2.0560	50/50	2.0560
200849	26LAKVU GN	0.2755	50/50	0.2755
201201	26WRREN CT	2.1746	50/50	2.1746
203999	P-047 E	7.3776	Adder	8.68
239035	02PERRG1 (Deactivation : 31/05/2021)	106.6470	50/50	106.6470
915951	Y3-092 FTIR	398.9600	50/50	398.9600
916202	Z1-069 E	6.3531	Adder	7.47
921642	AA2-000	41.8540	Adder	49.24
930511	AB2-092	1.5368	Adder	1.81
931092	AB1-160 E	1.8152	Adder	2.14
935191	AD1-154	2.0946	Adder	2.46
936421	AD2-055	3.1639	Adder	3.72
938951	AE1-123	2.2944	Adder	2.7
939291	AE1-160 C	3.1331	50/50	3.1331
939292	AE1-160 E	1.8009	50/50	1.8009
940861	AE2-074 C	1.8321	Adder	2.16
940862	AE2-074 E	2.4117	Adder	2.84
941191	AE2-113 C	7.8958	Adder	9.29
941192	AE2-113 E	8.5013	Adder	10.0
941321	AE2-126 C	1.2902	Adder	1.52
941322	AE2-126 E	0.8601	Adder	1.01
942491	AE2-262 C	4.4515	Adder	5.24
942492	AE2-262 E	2.9914	Adder	3.52
942501	AE2-263 C	4.1844	Adder	4.92
942502	AE2-263 E	2.7937	Adder	3.29
942811	AE2-299 C	10.6435	50/50	10.6435
942812	AE2-299 E	42.5741	50/50	42.5741
942961	AE2-316 C	4.4147	Adder	5.19
942962	AE2-316 E	6.2953	Adder	7.41
943151	AE2-344 C	23.9491	50/50	23.9491
943152	AE2-344 E	15.9661	50/50	15.9661
943351	AF1-006 C	4.5919	50/50	4.5919
943352	AF1-006 E	2.5829	50/50	2.5829
943751	AF1-043	9.4917	Adder	11.17
944261	AF1-094 C	3.6968	50/50	3.6968

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944262	AF1-094 E	2.4646	50/50	2.4646
944281	AF1-096 C	2.9604	50/50	2.9604
944282	AF1-096 E	1.9736	50/50	1.9736
944301	AF1-098 C	15.5059	50/50	15.5059
944302	AF1-098 E	10.3373	50/50	10.3373
944311	AF1-099 C	6.7573	Adder	7.95
944312	AF1-099 E	4.5049	Adder	5.3
944321	AF1-100 C	14.3387	Adder	16.87
944322	AF1-100 E	9.5591	Adder	11.25
944381	AF1-103 O1	4.8362	50/50	4.8362
944391	AF1-104 O1	7.6438	50/50	7.6438
944411	AF1-106 O1	1.8392	Adder	2.16
944771	AF1-142 C	10.8117	Adder	12.72
944772	AF1-142 E	7.2078	Adder	8.48
944881	AF1-153 C O1	1.3216	Adder	1.55
944882	AF1-153 E O1	0.8811	Adder	1.04
944901	AF1-155 C	1.3217	Adder	1.55
944902	AF1-155 E	0.8811	Adder	1.04
945021	AF1-167 C	0.8305	Adder	0.98
945022	AF1-167 E	0.5547	Adder	0.65
945051	AF1-170 C	16.5666	50/50	16.5666
945052	AF1-170 E	11.0444	50/50	11.0444
945121	AF1-177	0.1908	50/50	0.1908
945451	AF1-210 C	0.9048	Adder	1.06
945452	AF1-210 E	0.6032	Adder	0.71
945751	AF1-240 C O1	1.2567	Adder	1.48
945752	AF1-240 E O1	0.8378	Adder	0.99
946111	AF1-276 C	9.7732	Adder	11.5
946112	AF1-276 E	4.8137	Adder	5.66
946121	AF1-277 C	9.7732	Adder	11.5
946122	AF1-277 E	4.8137	Adder	5.66
946131	AF1-278 C	7.7952	Adder	9.17
946132	AF1-278 E	3.8743	Adder	4.56
946211	AF1-286 C	0.7449	Adder	0.88
946212	AF1-286 E	0.5058	Adder	0.6
946221	AF1-287 C	4.0920	50/50	4.0920
946222	AF1-287 E	2.7280	50/50	2.7280
946381	AF1-302 C	1.9278	Adder	2.27
946382	AF1-302 E	2.5704	Adder	3.02
946401	AF1-304 C	11.3807	Adder	13.39
946402	AF1-304 E	7.5871	Adder	8.93
946421	AF1-306 C	5.6400	Adder	6.64
946422	AF1-306 E	22.5600	Adder	26.54
946771	AF1-217 C	4.0920	50/50	4.0920
946772	AF1-217 E	2.7280	50/50	2.7280
957161	AF2-010 C	14.0369	50/50	14.0369
957162	AF2-010 E	9.4597	50/50	9.4597
957451	AF2-039 C	0.7550	Adder	0.89
957452	AF2-039 E	0.5033	Adder	0.59
957571	AF2-051 C	10.1105	50/50	10.1105
957572	AF2-051 E	5.2085	50/50	5.2085
957941	AF2-088 C	0.3635	Adder	0.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957942	AF2-088 E	0.2423	Adder	0.29
958361	AF2-130 C	1.8544	Adder	2.18
958362	AF2-130 E	1.2362	Adder	1.45
958731	AF2-164 C O1	11.6918	50/50	11.6918
958732	AF2-164 E O1	7.7946	50/50	7.7946
958741	AF2-165 C	2.2304	Adder	2.62
958742	AF2-165 E	1.4870	Adder	1.75
958751	AF2-166 C	1.8544	Adder	2.18
958752	AF2-166 E	1.2362	Adder	1.45
959441	AF2-235 C	1.4802	50/50	1.4802
959442	AF2-235 E	0.9868	50/50	0.9868
959471	AF2-238 C	1.0731	Adder	1.26
959472	AF2-238 E	0.7154	Adder	0.84
959491	AF2-240 C	0.3476	Adder	0.41
959492	AF2-240 E	0.2961	Adder	0.35
959501	AF2-241 C	1.0392	Adder	1.22
959502	AF2-241 E	0.8001	Adder	0.94
959521	AF2-243 C	1.6728	Adder	1.97
959522	AF2-243 E	1.1152	Adder	1.31
959741	AF2-265 C	0.7691	Adder	0.9
959742	AF2-265 E	0.5723	Adder	0.67
959822	AF2-273 E	0.3635	Adder	0.43
960041	AF2-295 C	1.3217	Adder	1.55
960042	AF2-295 E	0.8811	Adder	1.04
961141	AF2-405	0.9196	Adder	1.08
961151	AF2-406	6.8971	Adder	8.11
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	29.1389	Adder	34.28
961211	AF2-412	12.4953	Adder	14.7
961971	AG1-040 C	3.9328	50/50	3.9328
961972	AG1-040 E	2.6218	50/50	2.6218
962511	AG1-100 C	4.1113	50/50	4.1113
962512	AG1-100 E	2.7409	50/50	2.7409
962891	AG1-138 C	0.3890	Adder	0.86
962892	AG1-138 E	0.0205	Adder	0.05
962901	AG1-139 C	0.4679	Adder	1.04
962902	AG1-139 E	0.0246	Adder	0.05
962911	AG1-140 C	0.5987	50/50	0.5987
962912	AG1-140 E	0.2727	50/50	0.2727
963281	AG1-177 C O1	3.6968	50/50	3.6968
963282	AG1-177 E O1	2.4646	50/50	2.4646
963441	AG1-193 C	3.0844	50/50	3.0844
963442	AG1-193 E	2.0562	50/50	2.0562
963481	AG1-197 C	2.9224	50/50	2.9224
963482	AG1-197 E	1.9483	50/50	1.9483
963491	AG1-198 C	2.2181	50/50	2.2181
963492	AG1-198 E	1.4787	50/50	1.4787
963531	AG1-202 C	2.4000	50/50	2.4000
963532	AG1-202 E	1.2363	50/50	1.2363
963571	AG1-206 C	0.3828	Adder	0.85
963572	AG1-206 E	0.2061	Adder	0.46
963941	AG1-247 C	0.2388	Adder	0.53
963942	AG1-247 E	0.1267	Adder	0.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963991	AG1-253 C	0.8980	50/50	0.8980
963992	AG1-253 E	0.4324	50/50	0.4324
964341	AG1-296 C	0.3649	Adder	0.81
964342	AG1-296 E	0.1965	Adder	0.44
964411	AG1-303 C O1	8.0884	50/50	8.0884
964412	AG1-303 E O1	5.3923	50/50	5.3923
965201	AG1-385 C	0.9007	Adder	2.0
965202	AG1-385 E	0.2668	Adder	0.59
965241	AG1-389 C O1	0.7265	Adder	1.61
965242	AG1-389 E O1	0.4843	Adder	1.08
965251	AG1-390 C O1	0.7265	Adder	1.61
965252	AG1-390 E O1	0.4843	Adder	1.08
965261	AG1-391 C O1	0.7265	Adder	1.61
965262	AG1-391 E O1	0.4843	Adder	1.08
965271	AG1-392 C O1	1.4530	Adder	3.23
965272	AG1-392 E O1	0.9687	Adder	2.15
965861	AG1-455	12.4694	50/50	12.4694
966121	AG1-481	3.7553	50/50	3.7553
966771	AG1-548 C	35.9087	50/50	35.9087
966772	AG1-548 E	10.9287	50/50	10.9287
G-007A	G-007A	5.9938	Confirmed LTF	5.9938
VFT	VFT	16.4411	Confirmed LTF	16.4411
CALDERWOOD	CALDERWOOD	1.1868	Confirmed LTF	1.1868
PRAIRIE	PRAIRIE	7.4700	Confirmed LTF	7.4700
CHEOAH	CHEOAH	1.1882	Confirmed LTF	1.1882
CBM-N	CBM-N	3.2088	Confirmed LTF	3.2088
COTTONWOOD	COTTONWOOD	5.4978	Confirmed LTF	5.4978
HAMLET	HAMLET	1.0233	Confirmed LTF	1.0233
GIBSON	GIBSON	1.6353	Confirmed LTF	1.6353
BLUEG	BLUEG	5.1229	Confirmed LTF	5.1229
TRIMBLE	TRIMBLE	1.6445	Confirmed LTF	1.6445
CATAWBA	CATAWBA	0.6860	Confirmed LTF	0.6860

11.6.23 Index 23

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
164793579	239036	02PERRY	ATSI	238684	02EASTLK	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	127.39	130.11	DC	45.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200828	26HNSMLK 1	1.9857	50/50	1.9857
200829	26HNSMLK 2	1.9857	50/50	1.9857
200830	26HNSMLK 3	1.9857	50/50	1.9857
200831	26HNSMLK 4	1.9857	50/50	1.9857
200832	26HNSMLK 5	1.9857	50/50	1.9857
200849	26LAKVU GN	0.2662	50/50	0.2662
201201	26WRREN CT	2.1003	50/50	2.1003
203999	P-047 E	7.1230	Adder	8.38
239035	02PERRG1 (Deactivation : 31/05/2021)	100.3455	50/50	100.3455
915951	Y3-092 FTIR	385.4000	50/50	385.4000
916202	Z1-069 E	6.1347	Adder	7.22
921642	AA2-000	40.4097	Adder	47.54
930511	AB2-092	1.4837	Adder	1.75
931092	AB1-160 E	1.7528	Adder	2.06
935191	AD1-154	2.0220	Adder	2.38
936421	AD2-055	3.0547	Adder	3.59
938951	AE1-123	2.2151	Adder	2.61
939291	AE1-160 C	3.0262	50/50	3.0262
939292	AE1-160 E	1.7394	50/50	1.7394
940861	AE2-074 C	1.7692	Adder	2.08
940862	AE2-074 E	2.3289	Adder	2.74
941191	AE2-113 C	7.6245	Adder	8.97
941192	AE2-113 E	8.2091	Adder	9.66
941321	AE2-126 C	1.2457	Adder	1.47
941322	AE2-126 E	0.8305	Adder	0.98
942491	AE2-262 C	4.2976	Adder	5.06
942492	AE2-262 E	2.8880	Adder	3.4
942501	AE2-263 C	4.0397	Adder	4.75
942502	AE2-263 E	2.6972	Adder	3.17
942811	AE2-299 C	10.2813	50/50	10.2813
942812	AE2-299 E	41.1251	50/50	41.1251
942961	AE2-316 C	4.2623	Adder	5.01
942962	AE2-316 E	6.0780	Adder	7.15
943151	AE2-344 C	23.1341	50/50	23.1341
943152	AE2-344 E	15.4227	50/50	15.4227
943351	AF1-006 C	4.4356	50/50	4.4356
943352	AF1-006 E	2.4950	50/50	2.4950
943751	AF1-043	9.1642	Adder	10.78
944261	AF1-094 C	3.5708	50/50	3.5708
944262	AF1-094 E	2.3806	50/50	2.3806

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944281	AF1-096 C	2.8594	50/50	2.8594
944282	AF1-096 E	1.9062	50/50	1.9062
944301	AF1-098 C	14.9784	50/50	14.9784
944302	AF1-098 E	9.9856	50/50	9.9856
944311	AF1-099 C	6.5238	Adder	7.68
944312	AF1-099 E	4.3492	Adder	5.12
944321	AF1-100 C	13.8440	Adder	16.29
944322	AF1-100 E	9.2293	Adder	10.86
944381	AF1-103 O1	4.6710	50/50	4.6710
944391	AF1-104 O1	7.3840	50/50	7.3840
944411	AF1-106 O1	1.7758	Adder	2.09
944771	AF1-142 C	10.4380	Adder	12.28
944772	AF1-142 E	6.9587	Adder	8.19
944881	AF1-153 C O1	1.2760	Adder	1.5
944882	AF1-153 E O1	0.8507	Adder	1.0
944901	AF1-155 C	1.2761	Adder	1.5
944902	AF1-155 E	0.8507	Adder	1.0
945021	AF1-167 C	0.8017	Adder	0.94
945022	AF1-167 E	0.5354	Adder	0.63
945051	AF1-170 C	16.0034	50/50	16.0034
945052	AF1-170 E	10.6690	50/50	10.6690
945121	AF1-177	0.1843	50/50	0.1843
945451	AF1-210 C	0.8733	Adder	1.03
945452	AF1-210 E	0.5822	Adder	0.68
945751	AF1-240 C O1	1.2132	Adder	1.43
945752	AF1-240 E O1	0.8088	Adder	0.95
946111	AF1-276 C	9.4383	Adder	11.1
946112	AF1-276 E	4.6487	Adder	5.47
946121	AF1-277 C	9.4383	Adder	11.1
946122	AF1-277 E	4.6487	Adder	5.47
946131	AF1-278 C	7.5281	Adder	8.86
946132	AF1-278 E	3.7415	Adder	4.4
946211	AF1-286 C	0.7192	Adder	0.85
946212	AF1-286 E	0.4884	Adder	0.57
946221	AF1-287 C	3.9528	50/50	3.9528
946222	AF1-287 E	2.6352	50/50	2.6352
946381	AF1-302 C	1.8612	Adder	2.19
946382	AF1-302 E	2.4817	Adder	2.92
946401	AF1-304 C	10.9910	Adder	12.93
946402	AF1-304 E	7.3273	Adder	8.62
946421	AF1-306 C	5.4456	Adder	6.41
946422	AF1-306 E	21.7822	Adder	25.63
946771	AF1-217 C	3.9528	50/50	3.9528
946772	AF1-217 E	2.6352	50/50	2.6352
957161	AF2-010 C	13.5585	50/50	13.5585
957162	AF2-010 E	9.1373	50/50	9.1373
957451	AF2-039 C	0.7289	Adder	0.86
957452	AF2-039 E	0.4859	Adder	0.57
957571	AF2-051 C	9.7663	50/50	9.7663
957572	AF2-051 E	5.0311	50/50	5.0311
957941	AF2-088 C	0.3510	Adder	0.41
957942	AF2-088 E	0.2340	Adder	0.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958361	AF2-130 C	1.7907	Adder	2.11
958362	AF2-130 E	1.1938	Adder	1.4
958731	AF2-164 C O1	11.2920	50/50	11.2920
958732	AF2-164 E O1	7.5280	50/50	7.5280
958741	AF2-165 C	2.1540	Adder	2.53
958742	AF2-165 E	1.4360	Adder	1.69
958751	AF2-166 C	1.7907	Adder	2.11
958752	AF2-166 E	1.1938	Adder	1.4
959441	AF2-235 C	1.4297	50/50	1.4297
959442	AF2-235 E	0.9531	50/50	0.9531
959471	AF2-238 C	1.0361	Adder	1.22
959472	AF2-238 E	0.6907	Adder	0.81
959491	AF2-240 C	0.3356	Adder	0.39
959492	AF2-240 E	0.2859	Adder	0.34
959501	AF2-241 C	1.0033	Adder	1.18
959502	AF2-241 E	0.7725	Adder	0.91
959521	AF2-243 C	1.6155	Adder	1.9
959522	AF2-243 E	1.0770	Adder	1.27
959741	AF2-265 C	0.7425	Adder	0.87
959742	AF2-265 E	0.5526	Adder	0.65
959822	AF2-273 E	0.3509	Adder	0.41
960041	AF2-295 C	1.2761	Adder	1.5
960042	AF2-295 E	0.8507	Adder	1.0
961141	AF2-405	0.8879	Adder	1.04
961151	AF2-406	6.6593	Adder	7.83
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	28.1342	Adder	33.1
961211	AF2-412	12.0644	Adder	14.19
961971	AG1-040 C	3.7988	50/50	3.7988
961972	AG1-040 E	2.5326	50/50	2.5326
962511	AG1-100 C	3.9714	50/50	3.9714
962512	AG1-100 E	2.6476	50/50	2.6476
962891	AG1-138 C	0.3757	Adder	0.83
962892	AG1-138 E	0.0198	Adder	0.04
962901	AG1-139 C	0.4519	Adder	1.0
962902	AG1-139 E	0.0238	Adder	0.05
962911	AG1-140 C	0.5783	50/50	0.5783
962912	AG1-140 E	0.2635	50/50	0.2635
963281	AG1-177 C O1	3.5708	50/50	3.5708
963282	AG1-177 E O1	2.3806	50/50	2.3806
963441	AG1-193 C	2.9790	50/50	2.9790
963442	AG1-193 E	1.9860	50/50	1.9860
963481	AG1-197 C	2.8229	50/50	2.8229
963482	AG1-197 E	1.8819	50/50	1.8819
963491	AG1-198 C	2.1425	50/50	2.1425
963492	AG1-198 E	1.4283	50/50	1.4283
963531	AG1-202 C	2.3183	50/50	2.3183
963532	AG1-202 E	1.1943	50/50	1.1943
963571	AG1-206 C	0.3696	Adder	0.82
963572	AG1-206 E	0.1990	Adder	0.44
963941	AG1-247 C	0.2306	Adder	0.51
963942	AG1-247 E	0.1224	Adder	0.27
963991	AG1-253 C	0.8675	50/50	0.8675

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963992	AG1-253 E	0.4177	50/50	0.4177
964341	AG1-296 C	0.3523	Adder	0.78
964342	AG1-296 E	0.1897	Adder	0.42
964411	AG1-303 C O1	7.8131	50/50	7.8131
964412	AG1-303 E O1	5.2087	50/50	5.2087
965201	AG1-385 C	0.8696	Adder	1.93
965202	AG1-385 E	0.2576	Adder	0.57
965241	AG1-389 C O1	0.7015	Adder	1.56
965242	AG1-389 E O1	0.4677	Adder	1.04
965251	AG1-390 C O1	0.7015	Adder	1.56
965252	AG1-390 E O1	0.4677	Adder	1.04
965261	AG1-391 C O1	0.7015	Adder	1.56
965262	AG1-391 E O1	0.4677	Adder	1.04
965271	AG1-392 C O1	1.4031	Adder	3.11
965272	AG1-392 E O1	0.9354	Adder	2.08
965861	AG1-455	12.0456	50/50	12.0456
966121	AG1-481	3.6270	50/50	3.6270
966771	AG1-548 C	34.6851	50/50	34.6851
966772	AG1-548 E	10.5563	50/50	10.5563
G-007A	G-007A	5.7804	Confirmed LTF	5.7804
VFT	VFT	15.8541	Confirmed LTF	15.8541
CALDERWOOD	CALDERWOOD	1.1342	Confirmed LTF	1.1342
PRAIRIE	PRAIRIE	7.1317	Confirmed LTF	7.1317
CHEOAH	CHEOAH	1.1356	Confirmed LTF	1.1356
CBM-N	CBM-N	3.0948	Confirmed LTF	3.0948
COTTONWOOD	COTTONWOOD	5.2500	Confirmed LTF	5.2500
HAMLET	HAMLET	0.9783	Confirmed LTF	0.9783
GIBSON	GIBSON	1.5616	Confirmed LTF	1.5616
BLUEG	BLUEG	4.8938	Confirmed LTF	4.8938
TRIMBLE	TRIMBLE	1.5710	Confirmed LTF	1.5710
CATAWBA	CATAWBA	0.6555	Confirmed LTF	0.6555

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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
164792866	966040	AG1-473 TAP	AP	200513	26LEWISTWN	PENELEC	1	ATSI-P1-2-CEI-345-700T	single	621.0	136.26	137.96	DC	10.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	5.8194	80/20	5.8194
200643	26SENECA#2	5.4961	80/20	5.4961
200644	26SENECA#3	0.6006	80/20	0.6006
200649	26PENNTech	1.5002	80/20	1.5002
200665	26SHAWVL 3	9.0998	80/20	9.0998
200666	26SHAWVL 4	8.9582	80/20	8.9582
200715	26SHAWVL 1	5.7047	80/20	5.7047
200722	26SHAWVL 2	5.8358	80/20	5.8358
200849	26LAKVU GN	0.0759	80/20	0.0759
200887	26ARMNA MT	0.2231	80/20	0.2231
200905	26Q36	0.1708	80/20	0.1708
200913	26SHAW-D	0.2447	80/20	0.2447
201201	26WRREN CT	1.2716	80/20	1.2716
203261	26BLOSSBCT	0.3208	80/20	0.3208
203349	26Z1-069 C	0.2269	80/20	0.2269
203351	26GROZ1-110	0.4390	80/20	0.4390
203352	26CANZ2-011	0.4308	80/20	0.4308
203922	X1-109 G1	5.5905	80/20	5.5905
203923	X1-109 G2	5.5905	80/20	5.5905
919201	AA1-144 OP	15.8990	80/20	15.8990
921642	AA2-000	115.9583	80/20	115.9583
930511	AB2-092	4.2576	80/20	4.2576
931091	AB1-160 C	0.0648	80/20	0.0648
936421	AD2-055	8.7657	80/20	8.7657
936991	AD2-133 C	2.3479	80/20	2.3479
939171	AE1-147 C	5.9105	80/20	5.9105
940201	AE2-001 C	5.9323	80/20	5.9323
940681	AE2-055 C (Suspended)	6.2647	80/20	6.2647
940861	AE2-074 C	1.8019	80/20	1.8019
941191	AE2-113 C	10.8793	80/20	10.8793
941261	AE2-120 C	5.9442	80/20	5.9442
941271	AE2-121 C	3.1222	80/20	3.1222
941321	AE2-126 C	2.8931	80/20	2.8931
941331	AE2-129 C	2.2558	80/20	2.2558
941351	AE2-131 C (Suspended)	2.2558	80/20	2.2558
941421	AE2-139 C	6.4087	80/20	6.4087
942351	AE2-248 C	4.9008	80/20	4.9008
942491	AE2-262 C	20.0310	80/20	20.0310
942501	AE2-263 C	18.8291	80/20	18.8291
942811	AE2-299 C	3.0755	80/20	3.0755

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942961	AE2-316 C	7.3178	80/20	7.3178
943151	AE2-344 C	6.2567	80/20	6.2567
943351	AF1-006 C	1.1832	80/20	1.1832
943751	AF1-043	26.2972	80/20	26.2972
944001	AF1-068 C O1 (Withdrawn : 12/15/2020)	6.5789	80/20	6.5789
944181	AF1-086 C O1	2.3218	80/20	2.3218
944261	AF1-094 C	1.0902	80/20	1.0902
944301	AF1-098 C	5.0429	80/20	5.0429
944311	AF1-099 C	30.4071	80/20	30.4071
944321	AF1-100 C	49.6140	80/20	49.6140
944381	AF1-103 O1	2.8280	80/20	2.8280
944391	AF1-104 O1	1.7472	80/20	1.7472
944471	AF1-112 C	6.0896	80/20	6.0896
944671	AF1-132 C O1 (Withdrawn : 12/15/2020)	6.1913	80/20	6.1913
944691	AF1-134 C	2.1056	80/20	2.1056
944771	AF1-142 C	48.6513	80/20	48.6513
944881	AF1-153 C O1	2.9090	80/20	2.9090
944901	AF1-155 C	2.8891	80/20	2.8891
945051	AF1-170 C	4.0869	80/20	4.0869
945121	AF1-177	0.1116	80/20	0.1116
945161	AF1-181	0.0418	80/20	0.0418
945171	AF1-182	0.2096	80/20	0.2096
945181	AF1-183	0.0468	80/20	0.0468
945331	AF1-198	0.0422	80/20	0.0422
945491	AF1-214 C (Withdrawn : 12/03/2020)	5.9435	80/20	5.9435
946111	AF1-276 C	8.6048	80/20	8.6048
946121	AF1-277 C	8.6048	80/20	8.6048
946131	AF1-278 C	6.8633	80/20	6.8633
946221	AF1-287 C	1.0728	80/20	1.0728
946381	AF1-302 C	3.1955	80/20	3.1955
946421	AF1-306 C	12.7475	80/20	12.7475
946771	AF1-217 C	1.0728	80/20	1.0728
957161	AF2-010 C	4.1616	80/20	4.1616
957451	AF2-039 C	2.0933	80/20	2.0933
957941	AF2-088 C	1.0079	80/20	1.0079
958271	AF2-121 C	2.2558	80/20	2.2558
959061	AF2-197 C O1	3.5667	80/20	3.5667
959471	AF2-238 C	1.1756	80/20	1.1756
959741	AF2-265 C	0.8425	80/20	0.8425
960041	AF2-295 C	2.8891	80/20	2.8891
960051	AF2-296 C	2.1056	80/20	2.1056
961211	AF2-412	11.4920	80/20	11.4920
962411	AG1-090 C O1	11.2788	80/20	11.2788
962511	AG1-100 C	1.0580	80/20	1.0580
962911	AG1-140 C	0.1730	80/20	0.1730
962951	AG1-144 C	2.2558	80/20	2.2558
963281	AG1-177 C O1	1.0902	80/20	1.0902
963491	AG1-198 C	0.6541	80/20	0.6541

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963531	AG1-202 C	0.5791	80/20	0.5791
963571	AG1-206 C	1.5385	80/20	1.5385
963891	AG1-242 C	1.1406	80/20	1.1406
963991	AG1-253 C	0.2595	80/20	0.2595
964031	AG1-257 C	4.1916	80/20	4.1916
964041	AG1-258 C	4.1916	80/20	4.1916
964341	AG1-296 C	1.0283	80/20	1.0283
964451	AG1-308 C O1	1.7385	80/20	1.7385
965121	AG1-377 C O1	2.2558	80/20	2.2558
965131	AG1-378 C O1	2.2558	80/20	2.2558
965201	AG1-385 C	3.7405	80/20	3.7405
965241	AG1-389 C O1	1.3292	80/20	1.3292
965251	AG1-390 C O1	1.3292	80/20	1.3292
965261	AG1-391 C O1	1.3292	80/20	1.3292
965271	AG1-392 C O1	2.6585	80/20	2.6585
965301	AG1-395 C	2.8987	80/20	2.8987
965861	AG1-455	3.0761	80/20	3.0761
966041	AG1-473 C	21.3557	80/20	21.3557
966121	AG1-481	2.1959	80/20	2.1959
966771	AG1-548 C	10.5087	80/20	10.5087
WEC	WEC	0.0869	Confirmed LTF	0.0869
LGEE	LGEE	0.1608	Confirmed LTF	0.1608
CBM-W2	CBM-W2	1.8906	Confirmed LTF	1.8906
TVA	TVA	0.2394	Confirmed LTF	0.2394
SIGE	SIGE	0.1545	Confirmed LTF	0.1545
CBM-S2	CBM-S2	0.1984	Confirmed LTF	0.1984
CBM-S1	CBM-S1	0.0707	Confirmed LTF	0.0707
HAMLET	HAMLET	0.0098	Confirmed LTF	0.0098
MEC	MEC	0.4020	Confirmed LTF	0.4020
LAGN	LAGN	0.3115	Confirmed LTF	0.3115
CBM-W1	CBM-W1	4.2200	Confirmed LTF	4.2200

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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
165179604	999324	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-2-PN-345-002T	bus	854.0	145.0	146.27	DC	23.67

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	6.5754	Adder	7.74
200829	26HNSMLK 2	2.2076	50/50	2.2076
200830	26HNSMLK 3	2.2076	50/50	2.2076
200831	26HNSMLK 4	2.2076	50/50	2.2076
200832	26HNSMLK 5	2.2076	50/50	2.2076
200835	26ARN_Z1-066	-0.8316	Adder	-0.98
200838	26HOMER C2	49.2411	50/50	49.2411
200839	26HOMER C3	52.1282	50/50	52.1282
200894	26K02	6.5883	Adder	7.75
203932	AA2-133 GEN	2.4753	Adder	2.91
203999	P-047 E	15.6652	Adder	18.43
294573	P-028 E	12.7265	Adder	14.97
915951	Y3-092 FTIR	143.2300	Merchant Transmission	143.2300
916202	Z1-069 E	12.5548	Adder	14.77
917673	Z2-108 BAT	2.2012	Merchant Transmission	2.2012
919201	AA1-144 OP	21.9768	Adder	25.86
920341	AA2-132 (Withdrawn : 12/07/2020)	3.2631	Adder	3.84
921642	AA2-000	46.1713	Adder	54.32
930511	AB2-092	1.6953	Adder	1.99
931092	AB1-160 E	3.5871	Adder	4.22
936421	AD2-055	3.4903	Adder	4.11
938352	AE1-053 BAT	1.2229	Merchant Transmission	1.2229
938951	AE1-123	1.8876	Adder	2.22
939291	AE1-160 C	1.6561	Adder	1.95
939292	AE1-160 E	0.9519	Adder	1.12
940861	AE2-074 C	4.0007	50/50	4.0007
940862	AE2-074 E	5.2663	50/50	5.2663
941191	AE2-113 C	11.4130	Adder	13.43
941192	AE2-113 E	12.2881	Adder	14.46
941321	AE2-126 C	1.0801	Adder	1.27
941322	AE2-126 E	0.7201	Adder	0.85
941421	AE2-139 C	4.2516	Adder	9.44
941422	AE2-139 E	2.8344	Adder	6.29
942811	AE2-299 C	4.5609	Adder	5.37
942812	AE2-299 E	18.2436	Adder	21.46
942961	AE2-316 C	5.6581	Adder	6.66
942962	AE2-316 E	8.0685	Adder	9.49
943151	AE2-344 C	9.7702	Adder	11.49
943152	AE2-344 E	6.5135	Adder	7.66
943351	AF1-006 C	1.6941	Adder	1.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943352	AF1-006 E	0.9529	Adder	1.12
943751	AF1-043	10.4708	Adder	12.32
944261	AF1-094 C	1.6065	Adder	1.89
944262	AF1-094 E	1.0710	Adder	1.26
944281	AF1-096 C	1.5648	Adder	1.84
944282	AF1-096 E	1.0432	Adder	1.23
944301	AF1-098 C	6.7887	Adder	7.99
944302	AF1-098 E	4.5258	Adder	5.32
944321	AF1-100 C	11.2736	Adder	13.26
944322	AF1-100 E	7.5157	Adder	8.84
944381	AF1-103 O1	3.2213	Adder	3.79
944391	AF1-104 O1	2.5337	Adder	2.98
944411	AF1-106 O1	3.5595	Adder	4.19
944751	AF1-140 C	-1.1101	Adder	-1.31
944881	AF1-153 C O1	1.3113	Adder	1.54
944882	AF1-153 E O1	0.8742	Adder	1.03
944901	AF1-155 C	1.3158	Adder	1.55
944902	AF1-155 E	0.8772	Adder	1.03
945021	AF1-167 C	1.0229	Adder	1.2
945022	AF1-167 E	0.6832	Adder	0.8
945051	AF1-170 C	6.3141	Adder	7.43
945052	AF1-170 E	4.2094	Adder	4.95
945451	AF1-210 C	1.1567	Adder	1.36
945452	AF1-210 E	0.7711	Adder	0.91
945673	AF1-232 BAT (Withdrawn : 01/19/2021)	2.8594	Merchant Transmission	2.8594
946111	AF1-276 C	17.8260	50/50	17.8260
946112	AF1-276 E	8.7800	50/50	8.7800
946121	AF1-277 C	17.8260	50/50	17.8260
946122	AF1-277 E	8.7800	50/50	8.7800
946131	AF1-278 C	14.2182	50/50	14.2182
946132	AF1-278 E	7.0666	50/50	7.0666
946211	AF1-286 C	1.4416	Adder	1.7
946212	AF1-286 E	0.9789	Adder	1.15
946221	AF1-287 C	1.6851	Adder	1.98
946222	AF1-287 E	1.1234	Adder	1.32
946381	AF1-302 C	2.4708	Adder	2.91
946382	AF1-302 E	3.2944	Adder	3.88
946401	AF1-304 C	7.7438	Adder	9.11
946402	AF1-304 E	5.1626	Adder	6.07
946421	AF1-306 C	5.4045	Adder	6.36
946422	AF1-306 E	21.6180	Adder	25.43
946771	AF1-217 C	1.6851	Adder	1.98
946772	AF1-217 E	1.1234	Adder	1.32
957161	AF2-010 C	6.1504	Adder	7.24
957162	AF2-010 E	4.1449	Adder	4.88
957513	AF2-045 BAT	2.4710	Merchant Transmission	2.4710
957571	AF2-051 C	5.2061	Adder	6.12
957572	AF2-051 E	2.6819	Adder	3.16
957931	AF2-087 C (Suspended)	-0.2624	Adder	-0.31
958361	AF2-130 C	1.3964	Adder	1.64
958362	AF2-130 E	0.9309	Adder	1.1
958472	AF2-141 BAT	2.4458	Merchant Transmission	2.4458

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958731	AF2-164 C O1	10.6708	Adder	12.55
958732	AF2-164 E O1	7.1139	Adder	8.37
958741	AF2-165 C	1.5743	Adder	1.85
958742	AF2-165 E	1.0495	Adder	1.23
958751	AF2-166 C	1.3964	Adder	1.64
958752	AF2-166 E	0.9309	Adder	1.1
959061	AF2-197 C O1	5.7745	Adder	6.79
959062	AF2-197 E O1	8.6617	Adder	10.19
959441	AF2-235 C	0.7824	Adder	0.92
959442	AF2-235 E	0.5216	Adder	0.61
959471	AF2-238 C	2.1560	Adder	2.54
959472	AF2-238 E	1.4373	Adder	1.69
959481	AF2-239 C	1.5504	Adder	1.82
959482	AF2-239 E	1.2431	Adder	1.46
959491	AF2-240 C	0.6727	Adder	0.79
959492	AF2-240 E	0.5731	Adder	0.67
959501	AF2-241 C	2.0111	Adder	2.37
959502	AF2-241 E	1.5484	Adder	1.82
959521	AF2-243 C	1.1807	Adder	1.39
959522	AF2-243 E	0.7871	Adder	0.93
959741	AF2-265 C	1.5451	Adder	1.82
959742	AF2-265 E	1.1499	Adder	1.35
959793	AF2-270 BAT	0.2144	Merchant Transmission	0.2144
959822	AF2-273 E	0.4581	Adder	0.54
960031	AF2-294 C	1.9677	Adder	2.31
960032	AF2-294 E	1.3118	Adder	1.54
960041	AF2-295 C	1.3158	Adder	1.55
960042	AF2-295 E	0.8772	Adder	1.03
960271	AF2-318 C	1.6761	Adder	1.97
960272	AF2-318 E	1.1174	Adder	1.31
960891	AF2-380 C	0.7454	Adder	0.88
960892	AF2-380 E	0.4969	Adder	0.58
961141	AF2-405	1.7797	Adder	2.09
961151	AF2-406	13.3480	Adder	15.7
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	85.0620	50/50	85.0620
961211	AF2-412	28.0526	Adder	33.0
961451	AF2-436	0.1867	Adder	0.22
961971	AG1-040 C	0.9378	Adder	2.08
961972	AG1-040 E	0.6252	Adder	1.39
962511	AG1-100 C	0.8941	Adder	1.98
962512	AG1-100 E	0.5961	Adder	1.32
962642	AG1-113 BAT	0.6820	Merchant Transmission	0.6820
962652	AG1-114 BAT	0.6481	Merchant Transmission	0.6481
962891	AG1-138 C	0.2929	Adder	0.65
962892	AG1-138 E	0.0154	Adder	0.03
962901	AG1-139 C	0.3303	Adder	0.73
962902	AG1-139 E	0.0174	Adder	0.04
962911	AG1-140 C	0.1360	Adder	0.3
962912	AG1-140 E	0.0619	Adder	0.14
963281	AG1-177 C O1	0.8514	Adder	1.89
963282	AG1-177 E O1	0.5676	Adder	1.26
963441	AG1-193 C	0.9811	Adder	2.18

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963442	AG1-193 E	0.6541	Adder	1.45
963481	AG1-197 C	0.7110	Adder	1.58
963482	AG1-197 E	0.4740	Adder	1.05
963491	AG1-198 C	0.5109	Adder	1.13
963492	AG1-198 E	0.3406	Adder	0.76
963531	AG1-202 C	0.4659	Adder	1.03
963532	AG1-202 E	0.2400	Adder	0.53
963571	AG1-206 C	0.3450	Adder	0.77
963572	AG1-206 E	0.1858	Adder	0.41
963941	AG1-247 C	0.4622	Adder	1.03
963942	AG1-247 E	0.2452	Adder	0.54
963991	AG1-253 C	0.2040	Adder	0.45
963992	AG1-253 E	0.0982	Adder	0.22
964341	AG1-296 C	0.4979	Adder	1.11
964342	AG1-296 E	0.2681	Adder	0.6
964411	AG1-303 C O1	2.2074	Adder	4.9
964412	AG1-303 E O1	1.4716	Adder	3.27
964701	AG1-333 C	0.3824	Adder	0.85
964702	AG1-333 E	0.0521	Adder	0.12
964753	AG1-338 BAT	0.3214	Merchant Transmission	0.3214
964763	AG1-339 BAT	0.3214	Merchant Transmission	0.3214
964773	AG1-340 BAT	0.3214	Merchant Transmission	0.3214
965201	AG1-385 C	0.8936	Adder	1.98
965202	AG1-385 E	0.2647	Adder	0.59
965241	AG1-389 C O1	1.4137	Adder	3.14
965242	AG1-389 E O1	0.9425	Adder	2.09
965251	AG1-390 C O1	1.4137	Adder	3.14
965252	AG1-390 E O1	0.9425	Adder	2.09
965261	AG1-391 C O1	1.4137	Adder	3.14
965262	AG1-391 E O1	0.9425	Adder	2.09
965271	AG1-392 C O1	2.8274	Adder	6.28
965272	AG1-392 E O1	1.8850	Adder	4.18
965861	AG1-455	2.5189	Adder	5.59
966121	AG1-481	1.3257	Adder	2.94
966771	AG1-548 C	8.1742	Adder	18.14
966772	AG1-548 E	2.4878	Adder	5.52
966783	AG1-549 BAT	1.5794	Merchant Transmission	1.5794
WEC	WEC	0.0995	Confirmed LTF	0.0995
LGEE	LGEE	0.1294	Confirmed LTF	0.1294
CALDERWOOD	CALDERWOOD	0.0408	Confirmed LTF	0.0408
CBM-W2	CBM-W2	1.0931	Confirmed LTF	1.0931
TVA	TVA	0.0182	Confirmed LTF	0.0182
O-066	O-066	5.1821	Confirmed LTF	5.1821
SIGE	SIGE	0.1035	Confirmed LTF	0.1035
CHEOAH	CHEOAH	0.0445	Confirmed LTF	0.0445
CBM-S1	CBM-S1	0.0182	Confirmed LTF	0.0182
G-007	G-007	0.9314	Confirmed LTF	0.9314
HAMLET	HAMLET	0.2293	Confirmed LTF	0.2293
MEC	MEC	0.3925	Confirmed LTF	0.3925
LAGN	LAGN	0.0718	Confirmed LTF	0.0718
CATAWBA	CATAWBA	0.1061	Confirmed LTF	0.1061
CBM-W1	CBM-W1	6.5053	Confirmed LTF	6.5053

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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
165179585	999325	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-2-PN-345-001T	bus	827.0	150.68	152.0	DC	23.8

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	6.6128	Adder	7.78
200829	26HNSMLK 2	2.2201	50/50	2.2201
200830	26HNSMLK 3	2.2201	50/50	2.2201
200831	26HNSMLK 4	2.2201	50/50	2.2201
200832	26HNSMLK 5	2.2201	50/50	2.2201
200835	26ARN_Z1-066	-0.8363	Adder	-0.98
200838	26HOMER C2	49.5211	50/50	49.5211
200839	26HOMER C3	52.4246	50/50	52.4246
200894	26K02	6.6254	Adder	7.79
203932	AA2-133 GEN	2.4893	Adder	2.93
203999	P-047 E	15.7542	Adder	18.53
294573	P-028 E	12.7990	Adder	15.06
915951	Y3-092 FTIR	144.0500	Merchant Transmission	144.0500
916202	Z1-069 E	12.6261	Adder	14.85
917673	Z2-108 BAT	2.2138	Merchant Transmission	2.2138
919201	AA1-144 OP	22.1015	Adder	26.0
920341	AA2-132 (Withdrawn : 12/07/2020)	3.2815	Adder	3.86
921642	AA2-000	46.4350	Adder	54.63
930511	AB2-092	1.7050	Adder	2.01
931092	AB1-160 E	3.6075	Adder	4.24
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2299	Merchant Transmission	1.2299
938951	AE1-123	1.8984	Adder	2.23
939291	AE1-160 C	1.6655	Adder	1.96
939292	AE1-160 E	0.9573	Adder	1.13
940861	AE2-074 C	4.0233	50/50	4.0233
940862	AE2-074 E	5.2961	50/50	5.2961
941191	AE2-113 C	11.4779	Adder	13.5
941192	AE2-113 E	12.3580	Adder	14.54
941321	AE2-126 C	1.0862	Adder	1.28
941322	AE2-126 E	0.7241	Adder	0.85
941421	AE2-139 C	4.2758	Adder	9.49
941422	AE2-139 E	2.8505	Adder	6.33
942811	AE2-299 C	4.5867	Adder	5.4
942812	AE2-299 E	18.3469	Adder	21.58
942961	AE2-316 C	5.6904	Adder	6.69
942962	AE2-316 E	8.1145	Adder	9.55
943151	AE2-344 C	9.8255	Adder	11.56
943152	AE2-344 E	6.5503	Adder	7.71
943351	AF1-006 C	1.7037	Adder	2.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943352	AF1-006 E	0.9583	Adder	1.13
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.6156	Adder	1.9
944262	AF1-094 E	1.0771	Adder	1.27
944281	AF1-096 C	1.5737	Adder	1.85
944282	AF1-096 E	1.0491	Adder	1.23
944301	AF1-098 C	6.8275	Adder	8.03
944302	AF1-098 E	4.5516	Adder	5.35
944321	AF1-100 C	11.3373	Adder	13.34
944322	AF1-100 E	7.5582	Adder	8.89
944381	AF1-103 O1	3.2395	Adder	3.81
944391	AF1-104 O1	2.5481	Adder	3.0
944411	AF1-106 O1	3.5797	Adder	4.21
944751	AF1-140 C	-1.1164	Adder	-1.31
944881	AF1-153 C O1	1.3189	Adder	1.55
944882	AF1-153 E O1	0.8792	Adder	1.03
944901	AF1-155 C	1.3232	Adder	1.56
944902	AF1-155 E	0.8822	Adder	1.04
945021	AF1-167 C	1.0287	Adder	1.21
945022	AF1-167 E	0.6871	Adder	0.81
945051	AF1-170 C	6.3497	Adder	7.47
945052	AF1-170 E	4.2331	Adder	4.98
945451	AF1-210 C	1.1632	Adder	1.37
945452	AF1-210 E	0.7755	Adder	0.91
945673	AF1-232 BAT (Withdrawn : 01/19/2021)	2.8756	Merchant Transmission	2.8756
946111	AF1-276 C	17.9272	50/50	17.9272
946112	AF1-276 E	8.8298	50/50	8.8298
946121	AF1-277 C	17.9272	50/50	17.9272
946122	AF1-277 E	8.8298	50/50	8.8298
946131	AF1-278 C	14.2989	50/50	14.2989
946132	AF1-278 E	7.1067	50/50	7.1067
946211	AF1-286 C	1.4498	Adder	1.71
946212	AF1-286 E	0.9844	Adder	1.16
946221	AF1-287 C	1.6947	Adder	1.99
946222	AF1-287 E	1.1298	Adder	1.33
946381	AF1-302 C	2.4849	Adder	2.92
946382	AF1-302 E	3.3132	Adder	3.9
946401	AF1-304 C	7.7877	Adder	9.16
946402	AF1-304 E	5.1918	Adder	6.11
946421	AF1-306 C	5.4351	Adder	6.39
946422	AF1-306 E	21.7403	Adder	25.58
946771	AF1-217 C	1.6947	Adder	1.99
946772	AF1-217 E	1.1298	Adder	1.33
957161	AF2-010 C	6.1856	Adder	7.28
957162	AF2-010 E	4.1686	Adder	4.9
957513	AF2-045 BAT	2.4851	Merchant Transmission	2.4851
957571	AF2-051 C	5.2355	Adder	6.16
957572	AF2-051 E	2.6971	Adder	3.17
957931	AF2-087 C (Suspended)	-0.2639	Adder	-0.31
958361	AF2-130 C	1.4043	Adder	1.65
958362	AF2-130 E	0.9362	Adder	1.1
958472	AF2-141 BAT	2.4598	Merchant Transmission	2.4598

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958731	AF2-164 C O1	10.7312	Adder	12.62
958732	AF2-164 E O1	7.1541	Adder	8.42
958741	AF2-165 C	1.5832	Adder	1.86
958742	AF2-165 E	1.0555	Adder	1.24
958751	AF2-166 C	1.4043	Adder	1.65
958752	AF2-166 E	0.9362	Adder	1.1
959061	AF2-197 C O1	5.8074	Adder	6.83
959062	AF2-197 E O1	8.7111	Adder	10.25
959441	AF2-235 C	0.7868	Adder	0.93
959442	AF2-235 E	0.5246	Adder	0.62
959471	AF2-238 C	2.1682	Adder	2.55
959472	AF2-238 E	1.4455	Adder	1.7
959481	AF2-239 C	1.5591	Adder	1.83
959482	AF2-239 E	1.2501	Adder	1.47
959491	AF2-240 C	0.6766	Adder	0.8
959492	AF2-240 E	0.5763	Adder	0.68
959501	AF2-241 C	2.0225	Adder	2.38
959502	AF2-241 E	1.5572	Adder	1.83
959521	AF2-243 C	1.1874	Adder	1.4
959522	AF2-243 E	0.7916	Adder	0.93
959741	AF2-265 C	1.5539	Adder	1.83
959742	AF2-265 E	1.1564	Adder	1.36
959793	AF2-270 BAT	0.2156	Merchant Transmission	0.2156
959822	AF2-273 E	0.4607	Adder	0.54
960031	AF2-294 C	1.9788	Adder	2.33
960032	AF2-294 E	1.3192	Adder	1.55
960041	AF2-295 C	1.3232	Adder	1.56
960042	AF2-295 E	0.8822	Adder	1.04
960271	AF2-318 C	1.6856	Adder	1.98
960272	AF2-318 E	1.1237	Adder	1.32
960891	AF2-380 C	0.7497	Adder	0.88
960892	AF2-380 E	0.4998	Adder	0.59
961141	AF2-405	1.7898	Adder	2.11
961151	AF2-406	13.4238	Adder	15.79
961201	AF2-411 O1 (Withdrawn : 12/08/2020)	85.5450	50/50	85.5450
961211	AF2-412	28.2129	Adder	33.19
961451	AF2-436	0.1877	Adder	0.22
961971	AG1-040 C	0.9431	Adder	2.09
961972	AG1-040 E	0.6288	Adder	1.4
962511	AG1-100 C	0.8992	Adder	2.0
962512	AG1-100 E	0.5995	Adder	1.33
962642	AG1-113 BAT	0.6859	Merchant Transmission	0.6859
962652	AG1-114 BAT	0.6518	Merchant Transmission	0.6518
962891	AG1-138 C	0.2946	Adder	0.65
962892	AG1-138 E	0.0155	Adder	0.03
962901	AG1-139 C	0.3322	Adder	0.74
962902	AG1-139 E	0.0175	Adder	0.04
962911	AG1-140 C	0.1367	Adder	0.3
962912	AG1-140 E	0.0623	Adder	0.14
963281	AG1-177 C O1	0.8563	Adder	1.9
963282	AG1-177 E O1	0.5708	Adder	1.27
963441	AG1-193 C	0.9866	Adder	2.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
963442	AG1-193 E	0.6578	Adder	1.46
963481	AG1-197 C	0.7150	Adder	1.59
963482	AG1-197 E	0.4767	Adder	1.06
963491	AG1-198 C	0.5138	Adder	1.14
963492	AG1-198 E	0.3425	Adder	0.76
963531	AG1-202 C	0.4686	Adder	1.04
963532	AG1-202 E	0.2414	Adder	0.54
963571	AG1-206 C	0.3470	Adder	0.77
963572	AG1-206 E	0.1868	Adder	0.41
963941	AG1-247 C	0.4648	Adder	1.03
963942	AG1-247 E	0.2466	Adder	0.55
963991	AG1-253 C	0.2051	Adder	0.46
963992	AG1-253 E	0.0988	Adder	0.22
964341	AG1-296 C	0.5007	Adder	1.11
964342	AG1-296 E	0.2696	Adder	0.6
964411	AG1-303 C O1	2.2199	Adder	4.93
964412	AG1-303 E O1	1.4799	Adder	3.29
964701	AG1-333 C	0.3845	Adder	0.85
964702	AG1-333 E	0.0524	Adder	0.12
964753	AG1-338 BAT	0.3232	Merchant Transmission	0.3232
964763	AG1-339 BAT	0.3232	Merchant Transmission	0.3232
964773	AG1-340 BAT	0.3232	Merchant Transmission	0.3232
965201	AG1-385 C	0.8988	Adder	2.0
965202	AG1-385 E	0.2662	Adder	0.59
965241	AG1-389 C O1	1.4217	Adder	3.16
965242	AG1-389 E O1	0.9478	Adder	2.1
965251	AG1-390 C O1	1.4217	Adder	3.16
965252	AG1-390 E O1	0.9478	Adder	2.1
965261	AG1-391 C O1	1.4217	Adder	3.16
965262	AG1-391 E O1	0.9478	Adder	2.1
965271	AG1-392 C O1	2.8434	Adder	6.31
965272	AG1-392 E O1	1.8956	Adder	4.21
965861	AG1-455	2.5330	Adder	5.62
966121	AG1-481	1.3332	Adder	2.96
966771	AG1-548 C	8.2203	Adder	18.25
966772	AG1-548 E	2.5018	Adder	5.55
966783	AG1-549 BAT	1.5884	Merchant Transmission	1.5884
WEC	WEC	0.1002	Confirmed LTF	0.1002
LGEE	LGEE	0.1301	Confirmed LTF	0.1301
CALDERWOOD	CALDERWOOD	0.0408	Confirmed LTF	0.0408
CBM-W2	CBM-W2	1.1021	Confirmed LTF	1.1021
TVA	TVA	0.0182	Confirmed LTF	0.0182
O-066	O-066	5.2090	Confirmed LTF	5.2090
SIGE	SIGE	0.1041	Confirmed LTF	0.1041
CHEOAH	CHEOAH	0.0445	Confirmed LTF	0.0445
CBM-S1	CBM-S1	0.0182	Confirmed LTF	0.0182
G-007	G-007	0.9366	Confirmed LTF	0.9366
HAMLET	HAMLET	0.2310	Confirmed LTF	0.2310
MEC	MEC	0.3941	Confirmed LTF	0.3941
LAGN	LAGN	0.0718	Confirmed LTF	0.0718
CATAWBA	CATAWBA	0.1067	Confirmed LTF	0.1067
CBM-W1	CBM-W1	6.5473	Confirmed LTF	6.5473

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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
165179569	999332	KEYSTONE	PENELEC	200011	KEYSTONE	PENELEC	4	APS-P2-2-WP-500-DRT19	bus	634.0	148.24	149.17	DC	12.85

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

11.7 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
AA1-144	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
AB1-105	Highland-Hanna 345kV	Suspended
AB1-160	Gold-Sabinsville 115kV	In Service
AB2-019	Erie West 345kV	Engineering and Procurement
AB2-092	Bergen 138kV	Partially in Service - Under Construction
AC1-025	Dale Summit	In Service
AC1-103	Nottingham 138kV	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
AE1-116	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
AE2-299	Erie East 230 kV	Active

Queue Number	Project Name	Status
AE2-316	Brookville-Squab Hollow 138 kV	Active
AE2-344	Edinboro South-Venango Junction 115 kV	Active
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
AF1-177	Warren 115 kV	Partially in Service - Under Construction
AF1-181	Shawville 3 230 kV	Partially in Service - Under Construction
AF1-182	Shawville 4 230 kV	Partially in Service - Under Construction
AF1-183	Shawville 1 230 kV	Partially in Service - Under Construction
AF1-198	Blossburg #1 CT 34.5 kV	Partially in Service - Under Construction
AF1-200	Plano 345 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
AF1-271	Keisters-Krendale 138 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

Queue Number	Project Name	Status
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
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
AF2-318	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
AF2-380	Karns City-Bear Creek 25 kV	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
AG1-100	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

Queue Number	Project Name	Status
AG1-193	Utica Junction 34.5 kV	Active
AG1-197	Morgan Street-Cochranton 34.5 kV	Active
AG1-198	Union City 34.5 kV	Active
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
X1-109	E. Towanda 230kV	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
Z1-110	Grover 34kV	In Service

Queue Number	Project Name	Status
Z2-011	Canton 34.5kV	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
PN-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PN-P2-2-PN-345-002T	CONTINGENCY 'PN-P2-2-PN-345-002T' /* HOMER CITY SOUTH 345KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202641 CKT S/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYS 23.00 END
ATSI-P1-3-CEI-345-722	CONTINGENCY 'ATSI-P1-3-CEI-345-722' /* TRAN 02S8-ATT 345 TO 02ASH_3 138 CK 8 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 END
PN-P2-2-PN-230-007T	CONTINGENCY 'PN-P2-2-PN-230-007T' /* LEWISTOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 966040 CKT 1 /* 26LEWISTWN 230 AG1-473 TAP 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-14BT	CONTINGENCY 'PN-P2-3-PN-230-14BT' /* LEWISTOWN STUCK 230KV BREAKER B5 (RAYSTOWN) DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 DISCONNECT BRANCH FROM BUS 200517 TO BUS 200539 CKT 1 /* 26RAYSTOWN 230 26RAYSTOWN 46 DISCONNECT BRANCH FROM BUS 200513 TO BUS 966040 CKT 1 /* 26LEWISTWN 230 AG1-473 TAP 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200548 CKT 1 /* 26LEWISTWN 230 26LEWISTWN 46.00 END
PN-P2-2-PN-115-037	CONTINGENCY 'PN-P2-2-PN-115-037' /* ECLIPSE 115KV BUS FAULT DISCONNECT BRANCH FROM BUS 200586 TO BUS 200576 CKT 1 /* 26ECLIPSE 115 26UTICA JT 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200587 CKT 1 /* 26ECLIPSE 115 26CLRK SUM 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200583 CKT 1 /* 26ECLIPSE 115 26PINEY 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200546 CKT 2 /* 26ECLIPSE 115 26ECLIPS#2 35 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200610 CKT 1 /* 26ECLIPSE 115 26ECLIPSE 35 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200658 CKT 1 /* 26ECLIPSE 115 26SCRUB GR 115 REMOVE MACHINE 1 FROM BUS 200662 /* 26SCRUB GR 14 DISCONNECT BUS 200586 /* 26ECLIPSE 115 END
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

Contingency Name	Contingency Definition
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
AP-P2-2-WP-230-005T	CONTINGENCY 'AP-P2-2-WP-230-005T' /* SHINGLETOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 966040 CKT 1 /* 01SHINGL 230 AG1- 473 TAP 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 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

Contingency Name	Contingency Definition
ATSI-P7-1-CEI-345-016	CONTINGENCY 'ATSI-P7-1-CEI-345-016' /* PERRY-NORTHFEILD AND PERRY-LC 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 239036 TO BUS 239358 CKT 1 /* 02PERRY 345 02NFIELD 345 DISCONNECT BRANCH FROM BUS 239036 TO BUS 239334 CKT 1 /* 02PERRY 345 02L.CENTER 345 END
PN-P2-3-PN-115-20A-A	CONTINGENCY 'PN-P2-3-PN-115-20A-A' /* ECLIPSE 115 KV SB (CLARK SUMMIT) DISCONNECT BRANCH FROM BUS 200576 TO BUS 200586 CKT 1 /* 26UTICA JT 115 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200583 TO BUS 200586 CKT 1 /* 26PINEY 115 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200610 CKT 1 /* 26ECLIPSE 115 26ECLIPSE 35 DISCONNECT BRANCH FROM BUS 200546 TO BUS 200586 CKT 2 /* 26ECLIPS#2 35 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200587 CKT 1 /* 26ECLIPSE 115 26CLRK SUM 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200658 CKT 1 /* 26ECLIPSE 115 26SCRUB GR 115 DISCONNECT BRANCH FROM BUS 200658 TO BUS 200662 CKT 1 /* 26SCRUB GR 115 26SCRUB GR 14 END
PN-P1-3-PN-230-027	CONTINGENCY 'PN-P1-3-PN-230-027' /* ERIE SOUTH #7 XFMR FAULT DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
PN-P1-2-PN-115-020-A-A	CONTINGENCY 'PN-P1-2-PN-115-020-A-A' /* GRANDVIEW - TITUSVILLE 115 KV DISCONNECT BRANCH FROM BUS 200584 TO BUS 946400 CKT 1 /* 26GRANDVW 115 AF1-304 TAP 115 END
PN-P1-2-PN-345-107T	CONTINGENCY 'PN-P1-2-PN-345-107T' /* ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BUS 238547 /* 02AT 345 END

Contingency Name	Contingency Definition
PN-P2-2-PN-345-001T	CONTINGENCY 'PN-P2-2-PN-345-001T' /* HOMER CITY NORTH 345KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 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
PN-P1-3-PN-230-006	CONTINGENCY 'PN-P1-3-PN-230-006' /* ERIE SOUTH #8 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200600 TO BUS 200819 CKT 8 /* 26ERIE SO 345 26ERIE SE 230 END
PN-P1-3-PN-230-008	CONTINGENCY 'PN-P1-3-PN-230-008' /* ERIE SOUTH #6 230/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200568 TO BUS 200567 CKT 6 /* 26ERIE SO. 230 26ERIE SO. 115 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200918 CKT ZB /* 26ERIE SO. 230 26ERIE S TIE230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200600 TO BUS 200568 CKT 5 /* 26ERIE SO 345 26ERIE SO. 230 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 DISCONNECT BUS 200568 /* 26ERIE SO. 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
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-230-14CT	CONTINGENCY 'PN-P2-3-PN-230-14CT' /* LEWISTOWN STUCK 230KV BREAKER - SHINGLETOWN DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 966040 CKT 1 /* 26LEWISTWN 230 AG1-473 TAP 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200548 CKT 2 /* 26LEWISTWN 230 26LEWISTWN 46.00 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 CKT 3 /* 26LEWISTWN 230 26LEWISTWN 115 END
PJM_GEN_P1-1: UNIT02PERRG1	CONTINGENCY 'PJM_GEN_P1-1: UNIT02PERRG1' REMOVE MACHINE 1 FROM BUS 239035 END
PN-P1-2-PN-115-022-A	CONTINGENCY 'PN-P1-2-PN-115-022-A' /* ERIE SOUTH - UNION CITY 115KV DISCONNECT BRANCH FROM BUS 200567 TO BUS 966770 CKT 1 /* 26ERIE SO. 115 AG1- 548 TAP 115 END
Base Case	

Contingency Name	Contingency Definition
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-P1-2-PN-345-003	CONTINGENCY 'PN-P1-2-PN-345-003' /* HANDSOME LAKE - WAYNE 345KV DISCONNECT BRANCH FROM BUS 200826 TO BUS 200595 CKT 1 /* 26HANDSMLK 345 26WAYNE 345 END
ATSI-P1-2-CEI-345-700T	CONTINGENCY 'ATSI-P1-2-CEI-345-700T' /* PN/ATSI ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 239036 TO BUS 238547 CKT 1 /* 02PERRY 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 DISCONNECT BRANCH FROM BUS 238547 TO BUS 200599 CKT 1 /* 02AT 345 26ERIE W 345 END
PN-P1-3-PN-115-070-A	CONTINGENCY 'PN-P1-3-PN-115-070-A' /* GRANDVIEW #2 XFMR FAULT DISCONNECT BRANCH FROM BUS 200584 TO BUS 200592 CKT 2 /* 26GRANDVW 115 26GRNDVW#2 35 DISCONNECT BRANCH FROM BUS 200584 TO BUS 946400 CKT 1 /* 26GRANDVW 115 AF1-304 TAP 115 DISCONNECT BRANCH FROM BUS 200584 TO BUS 200587 CKT 1 /* 26GRANDVW 115 26CLRK SUM 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
ATSI-P2-4-CEI-138-125B	CONTINGENCY 'ATSI-P2-4-CEI-138-125B' /* AT BUS 138KV_ BRKR FAILURE - Q-2-3-AT-TIE (B155) DISCONNECT BRANCH FROM BUS 238544 TO BUS 239082 CKT 8 /* 02ASH_3 138 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 238544 TO BUS 238543 CKT ZB /* 02ASH_3 138 02ASH_2 138 DISCONNECT BRANCH FROM BUS 238544 TO BUS 239098 CKT 1 /* 02ASH_3 138 02SBRNQ4 138 DISCONNECT BRANCH FROM BUS 238544 TO BUS 239182 CKT 1 /* 02ASH_3 138 02ZQN-16 138 DISCONNECT BRANCH FROM BUS 238543 TO BUS 238542 CKT ZB /* 02ASH_2 138 02ASH_1 138 DISCONNECT BRANCH FROM BUS 238543 TO BUS 239096 CKT 1 /* 02ASH_2 138 02SBRNQ2 138 DISCONNECT BRANCH FROM BUS 238543 TO BUS 239097 CKT 1 /* 02ASH_2 138 02SBRNQ3 138 DISCONNECT BUS 238543 /* 02ASH_2 138 DISCONNECT BUS 238544 /* 02ASH_3 138 DISCONNECT BUS 238692 /* 02ELKEM 138 DISCONNECT BUS 238548 /* 02ATCQ31 138 DISCONNECT BUS 241936 /* 02PETMIN 138 DISCONNECT BUS 239182 /* 02ZQN-16 138 END
PN-P2-3-PN-115-20C	CONTINGENCY 'PN-P2-3-PN-115-20C' /* 618 DISCONNECT BRANCH FROM BUS 200576 TO BUS 200586 CKT 1 /* 26UTICA JT 115 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200583 TO BUS 200586 CKT 1 /* 26PINEY 115 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200610 CKT 1 /* 26ECLIPSE 115 26ECLIPSE 35 DISCONNECT BRANCH FROM BUS 200546 TO BUS 200586 CKT 2 /* 26ECLIPS#2 35 26ECLIPSE 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200587 CKT 1 /* 26ECLIPSE 115 26CLRK SUM 115 DISCONNECT BRANCH FROM BUS 200586 TO BUS 200658 CKT 1 /* 26ECLIPSE 115 26SCRUB GR 115 DISCONNECT BRANCH FROM BUS 200658 TO BUS 200662 CKT 1 /* 26SCRUB GR 115 26SCRUB GR 14 DISCONNECT BRANCH FROM BUS 200576 TO BUS 200598 CKT 1 /* 26UTICA JT 115 26WAYNE 115 DISCONNECT BRANCH FROM BUS 200576 TO BUS 200621 CKT 1 /* 26UTICA JT 115 26UTICA JT 35 END
PN-P2-3-PN-230-6G	CONTINGENCY 'PN-P2-3-PN-230-6G' /* ERIE SOUTH 230KV SB 35 OPEN BUS 200819 /*ERIE SOUTH 1 230KV BUS OPEN BUS 200918 /*ERIE SOUTH 230 KV BUS TIE 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