



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF2-062
LEWIS RUN-PIERCE BROOK 230 KV
120 MW Capacity / 200 MW Energy**

July 2020

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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, Inc. (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 generating facility located in McKean County, Pennsylvania. The installed facilities will have a total capability of 200 MW with 120 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is May 31, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-062
Project Name	LEWIS RUN-PIERCE BROOK 230 KV
State	Pennsylvania
County	McKean
Transmission Owner	MAIT (PENELEC zone)
MFO	200
MWE	200
MWC	120
Fuel	Solar
Basecase Study Year	2023

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 at the Primary POI will be accomplished by constructing a new 230 kV three (3) breaker ring bus substation and looping the Lewis Run – Pierce Brook 230 kV line into the new station. The new substation will be located approximately 5.7 miles from Pierce Brook 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 Non-Direct Connection upgrades at Lewis Run Substation and Pierce Brook Substation.

Attachment 1 shows a one-line diagram of the proposed primary Direct Connection facilities for the AF2-062 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 Direct Connection facilities.

5 Cost Summary

The AF2-062 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$8,923,600
Total System Network Upgrade Costs	\$1,374,422,699 ¹²
Total Costs	\$1,383,346,299

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 88-129. 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 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’s MW contribution to a facility that is already overloaded by a prior queue is less than 5 MW, then they will not receive cost allocation.

² 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.

6 Transmission Owner Scope of Work

The interconnection of the project at the Primary POI will be accomplished by constructing a new 230 kV three (3) breaker ring bus substation and looping the Lewis Run – Pierce Brook 230 kV line into the new station. The new substation will be located approximately 5.7 miles from Pierce Brook 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 Non-Direct Connection upgrades at Lewis Run Substation and Pierce Brook Substation.

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

Description	Total Cost
Install 230 kV terminal position for customer's generator lead line.	\$804,500
Construct a new 230 kV ring bus interconnection station.	\$7,241,600
Loop the Lewis Run – Pierce Brook 230 kV line into the new switching station.	\$404,500
Upgrade relaying at Lewis Run substation.	\$204,200
Upgrade relaying at Pierce Brook substation.	\$204,200
Review drawings and nameplates for customer substation.	\$64,600
Total Physical Interconnection Costs	\$8,923,600

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 and construction kickoff call to complete the installation. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined Direct Connection and network upgrades, and that all transmission system outages will be allowed when requested.

If the customer is ultimately responsible for any 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 AF2-062 project did not contribute to any overloads on the <100 kV FE transmission 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 230 kV circuit breaker to protect the AF2-062 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 AF2-062 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)
- Irradiance (Watts/meter²)
- Ambient air temperature (Fahrenheit) – (Accepted, not required)
- Wind speed (meters/second) – (Accepted, not required)

10.3 Interconnected Transmission Owner Requirements

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

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

11 Summer Peak - Load Flow Analysis²

The Queue Project AF2-062 was evaluated as a 200.0 MW (Capacity 120.0 MW) injection tapping the Pierce Brook to Lewis Run 230 kV line in the PENELEC area. Project AF2-062 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-062 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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99088705	200819	26ERIE SE	230.0	PENELEC	200600	26ERIE SO	345.0	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	96.62	101.27	DC	40.13
100954836	957580	AF2-052 TAP	115.0	PENELEC	941190	AE2-113 TAP	115.0	PENELEC	1	PN-P2-3-PN-230-8I	breaker	160.0	92.49	108.95	DC	26.34
100955760	957580	AF2-052 TAP	115.0	PENELEC	941190	AE2-113 TAP	115.0	PENELEC	1	PN-P7-1-PN-230-002A	tower	160.0	92.49	108.95	DC	26.34

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	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99088478	200513	26LEWISTWN	230.0	PENEL EC	208005	JUNI BU2	230.0	PPL	1	PN-P2-3-PN-115-55A	breaker	624.0	152.51	154.1	DC	22.04
100954545	200579	26WARREN	115.0	PENEL EC	200570	26CARRY E.	115.0	PENEL EC	1	PN-P2-2-PN-230-009	bus	245.0	100.13	103.16	DC	16.36
99088869	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	Base Case	single	520.0	130.3	134.93	DC	24.53
99088870	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-003	single	621.0	126.46	129.88	DC	24.78
98651379	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	single	1560.0	105.08	106.99	DC	29.76
100954943	200674	26TOWANDA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202.0	158.42	161.61	DC	6.44
99088881	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	135.04	136.68	DC	10.98
99088882	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	single	515.0	130.84	132.97	DC	11.65
990888201	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P2-2-WP-230-005T	bus	984.0	117.6	119.0	DC	30.31
99088216	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	119.18	120.6	DC	30.71
100954627	200711	26WHETSTON	115.0	PENEL EC	200720	26HARVY.RU	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	breaker	172.0	145.38	149.72	DC	16.51
100954628	200711	26WHETSTON	115.0	PENEL EC	200720	26HARVY.RU	115.0	PENEL EC	1	AP-P2-3-WP-230-445	breaker	172.0	127.77	131.42	DC	13.93
100954629	200711	26WHETSTON	115.0	PENEL EC	200720	26HARVY.RU	115.0	PENEL EC	1	AP-P2-3-WP-230-708DT	breaker	172.0	126.55	130.88	DC	16.51

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 LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPA CT
100954846	200712	26DUBOIS	115.0	PENEL EC	200713	26ROCKTON	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	breaker	190.0	104.82	108.79	DC	16.72
100954863	200713	26ROCKTON	115.0	PENEL EC	200714	26SHAWVL1	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	breaker	190.0	103.19	107.16	DC	16.72
100954673	200720	26HARVY.RU	115.0	PENEL EC	200712	26DUBOIS	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	breaker	179.0	135.05	139.26	DC	16.72
100954674	200720	26HARVY.RU	115.0	PENEL EC	200712	26DUBOIS	115.0	PENEL EC	1	AP-P2-3-WP-230-445	breaker	179.0	117.89	121.44	DC	14.1
100954675	200720	26HARVY.RU	115.0	PENEL EC	200712	26DUBOIS	115.0	PENEL EC	1	AP-P2-3-WP-230-708DT	breaker	179.0	116.73	120.94	DC	16.72
98651293	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-005	single	554.0	127.09	128.95	DC	10.34
98651294	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-2-WP-230-005B	single	554.0	127.09	128.95	DC	10.34
98651295	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-005A	single	554.0	114.49	116.35	DC	10.34
99088657	200767	26HOMERCT	230.0	PENEL EC	200793	26SEWARD2	230.0	PENEL EC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	101.79	105.56	DC	30.76
99088829	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	141.47	144.48	DC	27.46
99088830	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	141.47	144.48	DC	27.46
99088832	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	Base Case	single	731.0	119.59	122.5	DC	21.9
99088184	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	133.8	140.66	DC	56.88
99088428	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	153.11	160.14	DC	57.03
99088498	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	133.8	140.66	DC	56.88
99088964	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	111.9	116.1	DC	34.32
99088999	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	108.97	113.06	DC	34.13
99088627	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-C	breaker	1147.0	110.66	112.03	DC	36.29
99088628	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-B	breaker	1147.0	110.62	112.0	DC	36.29
99088629	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-A	breaker	1147.0	110.61	111.99	DC	36.29
99088398	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	184.24	186.53	DC	45.83
99088844	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	136.18	139.12	DC	27.94
99088845	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	136.18	139.12	DC	27.94
99088846	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	PN-P1-2-PN-230-025	single	917.0	110.65	113.69	DC	28.12
99088847	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	PN-P1-3-PN-230-001T	single	917.0	110.65	113.69	DC	28.12
99088848	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	Base Case	single	731.0	110.23	113.18	DC	22.09
99088527	200810	26KEYSTONE	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN-P4-500-001A	breaker	635.0	138.14	140.1	DC	27.27
99088528	200810	26KEYSTONE	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN-P4-500-001D	breaker	635.0	138.14	140.1	DC	27.27
99088562	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P2-3-PN-345-003A	breaker	621.0	133.98	139.27	DC	32.81
99088577	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-C	breaker	1066.0	119.07	120.54	DC	36.29
99088578	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-B	breaker	1066.0	119.03	120.51	DC	36.29
99088579	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	119.02	120.5	DC	36.29
99088925	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHPN	230.0	PENEL EC	1	Base Case	single	546.0	122.35	124.36	DC	11.65

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 LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPA CT
99088926	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	123.83	125.34	DC	10.98
100954713	200927	26FOURMIL E	115.0	PENEL EC	200820	26ERIE SE	115.0	PENEL EC	1	PN-P2-3-PN-230-6G	break er	245.0	146.6	149.67	DC	16.6
100482400	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P2-3-CEI-345-004D	break er	228.0	121.01	123.05	DC	10.31
100482716	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	228.0	104.95	106.24	DC	6.48
100482717	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	PN-P1-2-PN-345-107T	single	228.0	104.95	106.24	DC	6.48
100482338	235174	01ELKO	138.0	AP	235237	01RIDGWY	138.0	AP	1	AP-P2-3-WP-230-447	break er	133.0	154.99	158.94	DC	11.65
100482576	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	single	179.0	175.76	177.79	DC	8.05
100482577	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	175.76	177.79	DC	8.05
100482613	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	268.0	136.42	137.86	DC	8.51
100482614	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	single	268.0	136.42	137.86	DC	8.51
100482620	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	155.44	157.48	DC	6.84
100482621	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	155.44	157.48	DC	6.84
98651273	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	Base Case	single	491.0	151.21	153.83	DC	12.86
98651274	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	PN-P1-2-PN-230-004	single	570.0	144.96	147.79	DC	16.38
100482605	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	163.91	165.96	DC	6.84
100482606	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	163.91	165.96	DC	6.84
98651324	235970	01DALE	230.0	AP	235248	01SHINGL	230.0	AP	1	AP-P1-2-WP-230-322T	single	554.0	112.23	114.0	DC	9.81
98651325	235970	01DALE	230.0	AP	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-325T	single	554.0	111.66	113.46	DC	9.96
98651761	239036	02PERRY	345.0	ATSI	239334	02L.CENTER	345.0	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	133.86	134.78	DC	33.25
98651763	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	125.92	126.8	DC	32.12
100954637	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWAY	115.0	PENEL EC	1	PN-P2-3-PN-230-8I	break er	160.0	130.95	147.41	DC	26.34
100955701	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWAY	115.0	PENEL EC	1	PN-P7-1-PN-230-002A	tower	160.0	130.95	147.41	DC	26.34
98651350	942490	AE2-262 TAP	230.0	AP	235219	01MILESB	230.0	AP	1	AP-P1-3-WP-230-325T	single	688.0	111.6	113.13	DC	10.49
98651351	942490	AE2-262 TAP	230.0	AP	235219	01MILESB	230.0	AP	1	AP-P1-2-WP-230-322T	single	688.0	111.48	113.01	DC	10.5
100954474	944300	AF1-098 TAP	115.0	PENEL EC	200927	26FOURMIL E	115.0	PENEL EC	1	PN-P2-2-PN-230-009	bus	245.0	118.57	121.59	DC	16.36
100954815	945550	AF1-220 TAP	115.0	PENEL EC	200711	26WHETST ON	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	break er	239.0	109.72	112.88	DC	16.72
99088187	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	133.79	140.65	DC	56.88
99088503	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	break er	824.0	133.79	140.65	DC	56.88
99089007	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	108.97	113.06	DC	34.13
99088433	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	break er	807.0	153.1	160.13	DC	57.03
99088974	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	111.89	116.09	DC	34.32
99088532	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	break er	634.0	137.61	139.58	DC	27.27

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPA CT
99088533	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	137.61	139.58	DC	27.27

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 PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPA CT
99088884	200513	26LEWISTWN	230.0	PENEL EC	208005	JUNI BU2	230.0	PPL	1	Base Case	operation	493.0	165.84	167.66	DC	19.92
99088885	200513	26LEWISTWN	230.0	PENEL EC	208005	JUNI BU2	230.0	PPL	1	PN-P1-2-PN-115-094-A	operation	624.0	152.42	154.01	DC	22.05
99089213	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	776.0	103.53	108.22	DC	36.28
100955262	200579	26WARREN	115.0	PENEL EC	200570	26CORRY E.	115.0	PENEL EC	1	PN-P1-2-PN-230-003	operation	245.0	99.77	102.8	DC	16.41
98651427	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHL LW	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	621.0	110.91	118.0	DC	44.02
98651428	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHL LW	230.0	AP	1	PN-P1-2-PN-345-107T	operation	621.0	110.91	118.0	DC	44.02
98651430	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHL LW	230.0	AP	1	Base Case	operation	499.0	97.36	105.17	DC	38.94
100955193	200582	26RIDGWAY	115.0	PENEL EC	200647	26FOREST	115.0	PENEL EC	1	200711 26WHETSTON 115 945550 AF1-220 TAP 115 1	operation	277.0	106.49	108.53	DC	12.53
100955194	200582	26RIDGWAY	115.0	PENEL EC	200647	26FOREST	115.0	PENEL EC	1	PN-P1-2-PN-115-027-B	operation	277.0	106.49	108.53	DC	12.53
99088864	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	Base Case	operation	520.0	177.36	185.23	DC	40.89
99088866	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-003	operation	621.0	174.11	180.77	DC	41.3
98651374	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	operation	1560.0	123.77	125.21	DC	49.6
98651375	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	ATSI-P1-1-CEI-345-711	operation	1900.0	113.14	114.32	DC	49.6
100954942	200674	26TOWANDA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operation	202.0	188.65	190.96	DC	10.74
99088874	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operation	515.0	157.77	159.18	DC	19.42
99088875	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	615.0	151.98	153.23	DC	18.3

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/D C	MW IMPACT
99088876	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMAN + 23023522001MOSHAN2302301	operation	615.0	151.98	153.23	DC	18.3
99088877	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMAN + 230919490 AA2-000 TAP 2301	operation	615.0	151.98	153.23	DC	18.3
99089139	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	Base Case	operation	855.0	110.52	111.97	DC	27.48
99089140	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMAN + 230919490 AA2-000 TAP 2301	operation	984.0	112.02	113.23	DC	26.3
99089141	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMAN + 23023522001MOSHAN2302301	operation	984.0	112.02	113.23	DC	26.3
99089142	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	984.0	112.02	113.23	DC	26.3
99089162	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	Base Case	operation	855.0	106.98	108.46	DC	27.85
100955076	200711	26WHETSTON	115.0	PENEL EC	200720	26HARVY.RU	115.0	PENEL EC	1	AP-P1-2-WP-230-321T	operation	172.0	126.37	130.71	DC	16.52
100955140	200720	26HARVY.RU	115.0	PENEL EC	200712	26DUBOIS	115.0	PENEL EC	1	AP-P1-2-WP-230-321T	operation	179.0	116.54	120.76	DC	16.72
98651288	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-005	operation	554.0	157.89	159.3	DC	17.24
98651289	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-2-WP-230-005B	operation	554.0	157.89	159.3	DC	17.24
99088824	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	189.56	194.56	DC	45.77
99088825	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	189.56	194.56	DC	45.77
99088826	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	Base Case	operation	731.0	168.8	173.7	DC	36.49
99088963	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	136.8	143.85	DC	57.21
99088967	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	Base Case	operation	653.0	96.99	101.98	DC	32.82
99088998	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	133.23	140.09	DC	56.89
99089002	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	Base Case	operation	647.0	95.67	100.6	DC	32.08
99089197	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMAGH	230.0	PENEL EC	1	PN-P1_2-PN-230-0103	operation	1147.0	107.23	108.66	DC	35.81
99088839	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	183.28	185.6	DC	46.56
99088840	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	183.28	185.6	DC	46.56
99088843	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operation	731.0	159.56	161.87	DC	36.81
99089056	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operation	635.0	131.82	133.79	DC	27.32

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
99089059	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	Base Case	operati on	494.0	112.87	114.56	DC	18.28
99089075	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	Base Case	operati on	520.0	135.07	141.31	DC	32.37
99089076	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P1-2-PN-115-100-A	operati on	621.0	133.86	139.83	DC	37.03
99089154	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P1_2-PN-230-0103	operati on	1066.0	115.38	116.91	DC	35.81
99088920	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	147.75	149.08	DC	19.42
99088921	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	200908 26CHAPMAN + 230 235220 01MOSHAN 230 230 1	operati on	666.0	139.47	140.63	DC	18.3
99088922	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A -B	operati on	666.0	139.47	140.63	DC	18.3
99088923	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	200908 26CHAPMAN + 230 919490 AA2-000 TAP 230 1	operati on	666.0	139.47	140.63	DC	18.3
99089238	200943	26PIERCEBR K	230.0	PENEL EC	200942	26PIERCEBR K	345.0	PENEL EC	1	PN-P1-2-PN-230-004	operati on	769.0	92.25	108.55	DC	125.26
99089204	208005	JUNI BU2	230.0	PPL	208004	JUNI BU1	230.0	PPL	1	PL_P12_100 598	operati on	641.0	112.05	112.95	DC	12.79
99089205	208005	JUNI BU2	230.0	PPL	208004	JUNI BU1	230.0	PPL	1	PL_P12_000 196	operati on	641.0	112.05	112.95	DC	12.79
99089206	208005	JUNI BU2	230.0	PPL	208004	JUNI BU1	230.0	PPL	1	PL_P21_000 305	operati on	641.0	112.05	112.95	DC	12.79
100482714	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	228.0	117.9	120.04	DC	10.81
100482715	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	228.0	117.9	120.04	DC	10.81
100482574	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	179.0	227.08	230.46	DC	13.42
100482575	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	179.0	227.08	230.46	DC	13.42
100482611	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	268.0	175.6	177.98	DC	14.18
100482612	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	268.0	175.6	177.98	DC	14.18
98651298	235219	01MILESB	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-2-WP-230-322T	operati on	554.0	155.4	156.73	DC	16.26
98651305	235219	01MILESB	230.0	AP	235970	01DALE	230.0	AP	1	Base Case	operati on	489.0	115.67	116.61	DC	10.17
98651432	235220	01MOSHAN	230.0	AP	942490	AE2-262 TAP	230.0	AP	1	AP-P1-2-WP-230-322T	operati on	688.0	110.67	111.82	DC	17.51
100482618	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	151.0	181.95	185.36	DC	11.4
100482619	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	181.95	185.36	DC	11.4
98651268	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	Base Case	operati on	491.0	205.42	207.4	DC	21.43
98651269	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	PN-P1-2-PN-230-012A-A	operati on	570.0	200.07	201.86	DC	22.55
100482603	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	190.43	193.83	DC	11.4

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/D C	MW IMPACT
100482604	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	151.0	190.43	193.83	DC	11.4
98651319	235970	01DALE	230.0	AP	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-325T	operation	554.0	151.48	152.84	DC	16.6
98651443	235971	01SQUABHL LW	230.0	AP	235175	01ELKO	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	621.0	105.89	111.77	DC	36.48
98651444	235971	01SQUABHL LW	230.0	AP	235175	01ELKO	230.0	AP	1	PN-P1-2-PN-345-107T	operation	621.0	105.89	111.77	DC	36.48
100482770	235972	01SQUABHL LW	138.0	AP	235174	01ELKO	138.0	AP	1	AP-P1-2-WP-230-002	operation	350.0	102.12	108.03	DC	20.66
100955019	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWAY	115.0	PENEL EC	1	PN-P1-2-PN-230-028-A	operation	160.0	127.48	144.62	DC	27.42
100955023	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWAY	115.0	PENEL EC	1	Base Case	operation	133.0	111.47	116.12	DC	13.72
98651347	942490	AE2-262 TAP	230.0	AP	235219	01MILESB	230.0	AP	1	AP-P1-3-WP-230-325T	operation	688.0	138.72	139.87	DC	17.49
100955146	944300	AF1-098 TAP	115.0	PENEL EC	200927	26FOURMIL E	115.0	PENEL EC	1	PN-P1-2-PN-230-003	operation	245.0	118.23	121.26	DC	16.41
100955229	957580	AF2-052 TAP	115.0	PENEL EC	941190	AE2-113 TAP	115.0	PENEL EC	1	PN-P1-2-PN-230-028-A	operation	160.0	87.49	104.63	DC	27.42
99089220	957680	AF2-062 TAP	230.0	PENEL EC	200943	26PIERCEBR K	230.0	PENEL EC	1	PN-P1-2-PN-230-004	operation	666.0	89.21	111.53	DC	148.66
99089006	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	133.23	140.09	DC	56.89
99089010	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	Base Case	operation	647.0	95.67	100.6	DC	32.08
99088973	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	136.79	143.84	DC	57.21
99088977	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	Base Case	operation	653.0	96.97	101.97	DC	32.82
99089064	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	131.3	133.28	DC	27.32
99089069	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	Base Case	operation	493.0	112.14	113.84	DC	18.28

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI²

ID	Idx	Facility	Upgrade Description	Cost
99088577,99088578,99088579	24	26CONEMAGH 230.0 kV - CONEM-GH 500.0 kV Ckt 3	PENELEC PN-AF2-F-0005 (1703) : 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 : FAC Cost : \$85,596,000 Time Estimate : 48.0 Months PJM-AF1-F-0001a (1908) : Replace/ upgrade transformer detail. Reconductor existing section of 1033.5 AAC subconductor circular (SCCIR) Project Type : FAC Cost : \$26,180,000 Time Estimate : 24.0 Months PJM-AF1-F-0001b (1909) : Replace 5.83 Amp BDD relay (thermal) Project Type : FAC Cost : \$357,000 Time Estimate : 12.0 Months	\$112,133,000
99088433,99088974	42	STAR601 1.0 kV - 26HOMER CT 230.0 kV Ckt N		
99088428,99088964	19	26HOMER CY 345.0 kV - STAR601 1.0 kV Ckt N		
99088832,99088829,99088830	17	26HOMER CT 230.0 kV - 26SHELOCTA 230.0 kV Ckt 1		
99088846,99088847,99088844,99088845,99088848,990888398	21	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
99088628,99088629,99088627	20	26SEWARD 2 230.0 kV - 26CONEMAGH 230.0 kV Ckt 1		
99088503,99089007,99088187	41	STAR602 1.0 kV - 26HOMER CT 230.0 kV Ckt S		
99088527,99088528	22	26KEYSTONE 230.0 kV - STAR592 1.0 kV Ckt 4		
99088657	16	26HOMER CT 230.0 kV - 26SEWARD 2 230.0 kV Ckt 1		
99088498,99088999,99088184	18	26HOMER CY 345.0 kV - STAR602 1.0 kV Ckt S		
99088532,99088533	43	STAR592 1.0 kV - KEYSTONE 500.0 kV Ckt 4		
100954846	12	26DUBOIS 115.0 kV - 26ROCKTON 115.0 kV Ckt 1	PENELEC PN-AF2-F-0054A (1818) : Replace line trap at Dubois. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0054B (1819) : Reconductor 11.67 miles of transmission line Project Type : FAC Cost : \$28,540,152 Time Estimate : 48.0 Months	\$28,662,432

ID	Idx	Facility	Upgrade Description	Cost
99088882,9908881	8	26E.TWANDA 230.0 kV - 26CANYON 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0046A (1799) : Replace substation conductor at East Towanda Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months PN-AF2-F-0046B (1800) : Reconductor 13.01 miles of transmission line. Replace transmission line drops at East Towanda Project Type : FAC Cost : \$55,680,198 Time Estimate : 54.0 Months PN-AF2-F-0046C (1801) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months Note: It should be noted that this contingency 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.	\$56,047,038
99088478	3	26LEWISTWN 230.0 kV - JUNI BU2 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0018B (1735) : Rebuild 24.59 miles of transmission line Project Type : FAC Cost : \$105,240,282 Time Estimate : 48.0 Months PN-AF2-F-0018C (1736) : Adjust/replace the relays, CT, and meters Project Type : FAC Cost : \$1,467,360 Time Estimate : 12.0 Months <u>PPL</u> R-PL-0006 (1929) : Rebuild PPL's ~0.9mi LEWI-JUNI 230kV Line and replace terminal equipment at Juniata 230kV Project Type : FAC Cost : \$7,000,000 Time Estimate : 24.0 Months R-PL-0007 (1930) : Replace two (2) CB's MOD switches Project Type : FAC Cost : \$600,000 Time Estimate : 24.0 Months	\$114,307,642

ID	Idx	Facility	Upgrade Description	Cost
100954863	13	26ROCKTON 115.0 kV - 26SHAWVL 1 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0050A (1811) : Replace line trap at Shawville. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0050B (1812) : Reconductor 8.63 miles of transmission line. Replace line drops at Shawville. Project Type : FAC Cost : \$26,381,910 Time Estimate : 48.0 Months	\$26,504,190
98651294,9865 1295,98651293	15	26SHAWVL 2 230.0 kV - 01SHINGL 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0016A (709) : Replace risers at Shingletown substation with 1033 ACSS. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0016B (710) : Replace 1200 A line side and bus side disconnect switches at Shingletown substation. Adjust line relaying as necessary at Shingletown. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months s2051.1_s2051.2 (1899) : Shawville 230 kV Substation Replace line trap and substation conductor on the Shawville Shingletown 230 kV Line (s2051.1) Shingletown 230 kV Substation Replace line relaying, line trap, and substation conductor on the Shawville Shingletown 230 kV Line (s2051.2) Project Type : FAC Cost : \$0 <u>PENELEC</u> PN-AF2-F-0023A (1746) : Reconductor 40.7 miles of transmission line Project Type : FAC Cost : \$174,187,860 Time Estimate : 90.0 Months PN-AF2-F-0023B (1747) : Replace breaker disconnect switches at Shawville Adjust line relaying as necessary at Shawville Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months	\$175,234,540

ID	Idx	Facility	Upgrade Description	Cost
99088562	23	26WARREN 230.0 kV - 26ERIE S TIE 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0001 (1673) : Replace substation conductor at Warren and Erie South substations. Project Type : FAC Cost : \$305,700 Time Estimate : 12.0 Months	\$305,700
98651324,9865 1325	34	01DALE 230.0 kV - 01SHINGL 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0013 (701) : Replace WT at Shingletown substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months	\$162,816
100954628,100 954629,100954 627	11	26WHETSTON 115.0 kV - 26HARVY.RU 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0060A (1834) : Replace disconnect switches at Whetstone. Project Type : FAC Cost : \$183,420 Time Estimate : 12.0 Months PN-AF2-F-0060B (1835) : Replace bus conductor at Whetstone. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0060C (1836) : Reconductor 0.04 miles of transmission line Project Type : FAC Cost : \$97,824 Time Estimate : 12.0 Months PN-AF2-F-0060D (1837) : Adjust CT ratios at Whetstone. Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months PN-AF2-F-0060E (1838) : Reconductor 4.71 miles of transmission line Project Type : FAC Cost : \$11,518,776 Time Estimate : 36.0 Months	\$12,350,280

ID	Idx	Facility	Upgrade Description	Cost
99088925,99088926	25	26CANYON 230.0 kV - 26N.MESHPN 230.0 kV Ckt 1	PENELEC PN-AF2-F-0047A (1804) : Reconductor 9.24 miles of transmission line Project Type : FAC Cost : \$39,545,352 Time Estimate : 48.0 Months PN-AF2-F-0047B (1805) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months PN-AF2-F-0047C (1806) : Adjust line relaying as necessary at North Meshoppen Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months b2952 (1858) : PJM Baseline Upgrade b2952. Replace the North Meshoppen #3 230/115kV transformer eliminating the old reactor and installing two breakers to complete a 230kV ring bus at North Meshoppen. The baseline project has a projected in-service date of 06/01/2022. Project Type : CON Cost : \$0 Note: It should be noted that this contingency 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.	\$40,248,462

ID	Idx	Facility	Upgrade Description	Cost
98651379	6	26ERIE W 345.0 kV - 02AT 345.0 kV Ckt 1	<u>ATSI</u> CEI-001B (739) : Replace the (2) 1200 A WaveTrap at Ashtabula on the PY-AT-EW 29T 345 kV line. Wavetraps need to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$376,808 Time Estimate : 12.0 Months CEI-001C (740) : Upgrade the (4) 2000 A CTs at Ashtabula on the PY-AT-EW 29T 345 kV line. CTs need to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$1,256,025 Time Estimate : 12.0 Months CEI-001D (741) : Adjust/upgrade the Impedance Relays at Ashtabula on the PY-AT-EW 29T 345 kV Line. They will need to exceed to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$565,211 Time Estimate : 12.0 Months CEI-001E (742) : Replace the 2000 A disconnect switch at Ashtabula on the PY-AT-EW 29T 345 kV Line. The new switch needs to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$251,205 Time Estimate : 12.0 Months CEI-001F (743) : Replace the 3500 SAC substation conductor at Ashtabula on the PY-AT-EW 29T 345 kV line. The substation conductor needs to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-001G (744) : Reconductor the ATSI owned portion of the Erie West-Ashtabula 3-point tap 345 kV Line (~ 15 miles from Ashtabula to structure 13083). The existing conductor is (2) 954 ACSR conductor and the new conductor is (2) 795 ACSS conductor. Project Type : Facility Cost : \$37,680,750 Time Estimate : 30.0 Months CEI-001H (745) : Protection Upgrades at Perry: Remove TC10B carrier sets and replace with UPLC II. Project Type : Facility Cost : \$565,211 Time Estimate : 12.0 Months <u>PENELEC</u> PN-AF2-F-0004 (1702) : Reconductor 7.2 miles of line. Refer to CEI-004A for ATSI (CEI) scope of work (Engineering to determine if a full rebuild is necessary) Project Type : FAC Cost : \$18,342,000 Time Estimate : 24.0 Months	\$59,225,614

ID	Idx	Facility	Upgrade Description	Cost
99088705	1	26ERIE SE 230.0 kV - 26ERIE SO 345.0 kV Ckt 8	PENELEC PN-AF2-F-0003 (1701) : Replace circuit switcher on the high side of the transformer with a 230 kV breaker Project Type : CON Cost : \$978,240 Time Estimate : 12.0 Months	\$978,240
100954713	26	26FOURMILE 115.0 kV - 26ERIE SE 115.0 kV Ckt 1	PENELEC PN-AF2-F-0020A (1742) : Reconductor 4.62 miles of transmission line. Replace line drops at Four Mile and Erie South substations Project Type : FAC Cost : \$14,123,340 Time Estimate : 30.0 Months PN-AF2-F-0020B (1743) : Replace the substation conductor at Four Mile Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months	\$14,245,620
100954815	40	AF1-220 TAP 115.0 kV - 26WHETSTON 115.0 kV Ckt 1	PENELEC PN-AF2-F-0061A (1839) : Reconductor 1.61 miles of transmission line Project Type : FAC Cost : \$4,921,770 Time Estimate : 30.0 Months PN-AF2-F-0061B (1840) : Reconductor 7.2 miles of transmission line Project Type : FAC Cost : \$22,010,400 Time Estimate : 42.0 Months	\$26,932,170
99088869,99088870	5	26GLADE 230.0 kV - 26WARREN 230.0 kV Ckt 1	PENELEC PN-AF2-F-0019A (1737) : Replace substation conductor at Warren and Glade substations Project Type : FAC Cost : \$305,700 Time Estimate : 12.0 Months PN-AF2-F-0019B (1738) : Rebuild 11.53 miles of transmission line Project Type : FAC Cost : \$42,296,652 Time Estimate : 48.0 Months PN-AF2-F-0019C (1739) : Replace line trap at Glade Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months Note: It should be noted that this contingency 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.	\$42,755,202

ID	Idx	Facility	Upgrade Description	Cost
100482400,100 482716,100482 717	27	01ARMSTR 138.0 kV - 01KITTAN 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0001 (663) : Replace relaying (WT, RT) at Kittanning substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$455,884
98651274,9865 1273	32	01SHINGL 230.0 kV - 26LEWISTWN 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0007A (681) : Replace 1033.5 ACSR & 2.00 IPS AL bus conductor at Shingletown substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0007B (682) : Replace risers at Shingletown substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0007C (683) : Replace 1200 A line side and bus side disconnect switches at Shingletown substation. Adjust line relaying as necessary at Shingletown substation. Project Type : FAC Cost : \$390,758 Time Estimate : 12.0 Months WP-AF2-F-0007D (684) : Replace 1600 A circuit breaker at Shingletown substation. Project Type : FAC Cost : \$1,042,020 Time Estimate : 12.0 Months WP-AF2-F-0007E (685) : Replace relaying at Shingletown substation. Project Type : FAC Cost : \$521,010 Time Estimate : 12.0 Months <u>PENELEC</u> PN-AF2-F-0032A (1769) : Reconductor 26.12 miles of transmission line Project Type : FAC Cost : \$111,788,376 Time Estimate : 48.0 Months PN-AF2-F-0032B (1770) : Adjust/replace line relaying at Lewistown Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months	\$114,556,915

ID	Idx	Facility	Upgrade Description	Cost
98651761	35	02PERRY 345.0 kV - 02L.CENTER 345.0 kV Ckt 1	<u>ATSI</u> CEI-002B (746) : Upgrade existing 954 ACSR 48/7 substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002C (747) : Upgrade existing 3500 kcmil AL 127 substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002D (748) : Reconductor the entire Leroy Center - Perry S6 345 kV Line (9.3 miles) with 795 kcmil ACSS 26/7 (2 conductors per phase). The existing conductor is 954 ACSR. Project Type : Facility Cost : \$58,405,162 Time Estimate : 48.0 Months CEI-002E (749) : Replace the 3000 A WaveTrap on the Leroy Center - Perry 345 kV line at Perry with a 4000 A WaveTrap. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002F (750) : Replace the 3000 A WaveTrap at Leroy Center on the Leroy Center - Perry 345 kV line with a 4000 A WaveTrap. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002G (751) : Upgrade existing 1590 SAC 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 : \$188,404 Time Estimate : 12.0 Months	\$59,347,181

ID	Idx	Facility	Upgrade Description	Cost
100482338	28	01ELKO 138.0 kV - 01RIDGWY 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0015A (706) : Replace 4/0 CU bus conductor at Ridgway substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AF2-F-0015B (707) : Replace 4/0 CW line riser at Ridgway substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AF2-F-0015C (708) : Reconductor 8.89 miles of 4/0 CW (63 spans) Project Type : FAC Cost : \$23,158,894 Time Estimate : 48.0 Months	\$23,419,400
98651763	36	02PERRY 345.0 kV - 02EASTLK 345.0 kV Ckt 1	<u>ATSI</u> CEI-003B (754) : Replace the 954 ACSR 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 : \$188,404 Time Estimate : 12.0 Months CEI-003C (755) : Replace 3500 SAC 127 substation conductor at Eastlake on the Eastlake - Perry 345 kV line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-003D (756) : Reconductor the entire Eastlake - Perry S8 345 kV Line (~22 miles) with 795 kcmil ACSS 26/7 (2 conductors per phase). The existing conductor is (2) 954 ACSR and 3500 ACSR. Project Type : Facility Cost : \$40,192,800 Time Estimate : 30.0 Months CEI-003G (759) : 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 : \$1,130,422 Time Estimate : 12.0 Months	\$41,700,030
100955760,100954836	2	AF2-052 TAP 115.0 kV - AE2-113 TAP 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0057A (1825) : Reconductor 3.89 miles of transmission line Project Type : FAC Cost : \$11,891,730 Time Estimate : 36.0 Months	\$11,891,730

ID	Idx	Facility	Upgrade Description	Cost
100954675,100 954674,100954 673	14	26HARVY.RU 115.0 kV - 26DUBOIS 115.0 kV Ckt 1	PENELEC PN-AF2-F-0058A (1826) : Replace relays at Dubois Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months PN-AF2-F-0058B (1827) : Replace line trap at Dubois. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0058C (1828) : Replace bus conductor at Dubois. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0058D (1829) : Reconductor 0.98 miles of transmission line Project Type : FAC Cost : \$2,995,860 Time Estimate : 12.0 Months PN-AF2-F-0058E (1830) : Adjust CT ratios at Dubois. Project Type : FAC Cost : \$733,680 Time Estimate : 12.0 Months	\$4,402,080
100482614,100 482613	30	01KISSNG 138.0 kV - 01KARNSC 138.0 kV Ckt 1	APS WP-AF2-F-0003A (666) : 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-AF2-F-0003B (667) : Replace relaying (RT, WT, MT, ZR, OR) at Karns City substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AF2-F-0003C (668) : Replace 954 ACSR & 1024.5 ACAR bus conductor at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months	\$20,124,011

ID	Idx	Facility	Upgrade Description	Cost
100482576,100 482577	29	01KARNSC 138.0 kV - 01BUTLER 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0008A (686) : 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-AF2-F-0008B (687) : 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-AF2-F-0008C (688) : Replace 336 ACSR line risers at Butler substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AF2-F-0008D (689) : Replace 336 ACSR line risers at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AF2-F-0008E (690) : 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 WP-AF2-F-0008F (691) : Replace 600 A line side and bus side disconnects at Butler substation. Project Type : FAC Cost : \$390,758 Time Estimate : 12.0 Months WP-AF2-F-0008G (692) : Replace 350 CU wire to WT at Butler substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months WP-AF2-F-0008H (693) : Replace relaying (WT, ZR) at Butler substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$42,136,684
100482605,100 482606	33	01GAR RN 138.0 kV - 01COLMBGPN 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0017 (711) : 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

ID	Idx	Facility	Upgrade Description	Cost
99088216	10	26OXBOW 230.0 kV - LACK 230.0 kV Ckt 1	PENELEC PN-AF2-F-0048A (1807) : Construct a new 230 kV circuit (approximately 27 miles) between North Meshoppen and Lackawanna 230 kV. Connect the new circuit between at North Meshoppen substation. Project Type : CON Cost : \$115,554,600 Time Estimate : 72.0 Months	\$115,554,600
99088201	9	26N.MESHPN 230.0 kV - 26OXBOW 230.0 kV Ckt 1	PPL PPL will evaluate PENELEC's proposed mitigation to the overload on this facility which drove the need to establish a new 230 kV circuit between North Meshoppen and Lackawanna. Note: It should be noted that this contingency 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.	
100954943	7	26TOWANDA 115.0 kV - 26NO MESHO 115.0 kV Ckt 1	PENELEC PN-AF2-F-0045 (1798) : Reconductor 2 miles of transmission. Adjust relay settings as necessary at East Towanda and North Meshoppen Project Type : FAC Cost : \$6,114,000 Time Estimate : 30.0 Months b3137 (1900) : PJM Baseline Upgrade b3137. Rebuild 20 miles of the East Towanda - North Meshoppen 115 kV line. The baseline project has an projected in-service date of 06/01/2024. Project Type : FAC Cost : \$0 b2678 (1901) : PJM Baseline Upgrade b2678. Convert the East Towanda 115 kV substation to breaker and half configuration. The baseline project has a projected in-service date of 06/01/2020. Project Type : FAC Cost : \$0 s1729 (1902) : Expand the existing North Meshoppen 115 kV yard to a breaker-and-a-half configuration. (s1729) Project Type : FAC Cost : \$0	\$6,114,000
100954545	4	26WARREN 115.0 kV - 26CORY E. 115.0 kV Ckt 1	PENELEC PN-AF2-F-0002 (1700) : Reconductor approximately 21.6 miles of line. Project Type : FAC Cost : \$52,824,960 Time Estimate : 42.0 Months	\$52,824,960

ID	Idx	Facility	Upgrade Description	Cost
98651351,98651350	38	AE2-262 TAP 230.0 kV - 01MILESB 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0014A (702) : Replace 1200 A bus side and line side disconnects at Milesburg Substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AF2-F-0014B (703) : Replace 1272 ACSR bus conductor at Milesburg substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0014C (704) : Replace 1272 ACSR line riser at Milesburg substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0014D (705) : Reconductor 15.3 miles of 1272 ACSR on the Milesburg - Moshannon 230 kV line, from Milesburg substation to structure 102, where new generator AE2-262 tap will be located (103 spans) Project Type : FAC Cost : \$69,750,214 Time Estimate : 54.0 Months	\$70,531,729
100482620,100482621	31	01COLMBGPN 138.0 kV - 01KISKIV 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0018A (712) : Reconductor 3.7 miles of 4/0 CU Project Type : FAC Cost : \$9,638,685 Time Estimate : 36.0 Months WP-AF2-F-0018B (713) : Replace relays (RT) at Kiski Valley substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$10,094,569
100954474	39	AF1-098 TAP 115.0 kV - 26FOURMILE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0053A (1816) : Reconductor approximately 7.74 miles of transmission line. Replace transmission line drops at Four Mile. Project Type : FAC Cost : \$23,661,180 Time Estimate : 42.0 Months PN-AF2-F-0053B (1817) : Replace substation conductor at Four Mile Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months	\$23,783,460

ID	Idx	Facility	Upgrade Description	Cost
100955701,100 954637	37	AE2-113 TAP 115.0 kV - 26RIDGWAY 115.0 kV Ckt 1	<u>PENELEC</u> PN-0003 (1887) : Reconductor line with 636 ACSS high temperature conductor (22 miles) Project Type : FAC Cost : \$40,300,000 Time Estimate : 36.0 Months	\$40,300,000
			TOTAL COST	\$1,374,422,699

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
99088705	200819	26ERIE SE	PENELEC	200600	26ERIE SO	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	96.62	101.27	DC	40.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	11.5912	50/50	11.5912
200643	26SENECA#2	10.9472	50/50	10.9472
200644	26SENECA#3	1.0779	50/50	1.0779
200649	26PENNTech	1.1711	50/50	1.1711
200823	26MHP_X3-003	1.3166	Adder	1.55
200849	26LAKVU GN	0.5452	50/50	0.5452
200894	26K02	4.7191	Adder	5.55
200898	26AA1-106	1.6819	Adder	1.98
201201	26WRREN CT	3.6060	50/50	3.6060
201477	26Y2-055	10.6273	50/50	10.6273
203349	26Z1-069 C	0.3106	50/50	0.3106
203909	26Z1-038	1.2989	Adder	1.53
203910	26Z1-091	1.6272	Adder	1.91
203999	P-047 E	7.1265	Adder	8.38
235003	AC1-025 E	0.1088	Adder	0.13
236828	01GRAYMONT	0.2998	Adder	0.35
294573	P-028 E	7.8999	Adder	9.29
915952	Y3-092 NFTWR	131.5300	50/50	131.5300
916202	Z1-069 E	7.6755	50/50	7.6755
918682	AA1-082 E	4.5082	Adder	5.3
919201	AA1-144 OP	12.8380	Adder	15.1
919491	AA2-000	41.6966	Adder	49.05
920341	AA2-132 (Suspended)	1.7803	Adder	2.09
922932	AB1-082 OP (Suspended)	3.1553	50/50	3.1553
923442	AB1-160 C	0.0887	50/50	0.0887
923443	AB1-160 E	2.1930	50/50	2.1930
923821	AB2-019 FTWR	3.6828	50/50	3.6828
930511	AB1-092	1.5310	Adder	1.8
936421	AD2-055	3.1520	Adder	3.71
939171	AE1-147 C	0.9039	Adder	1.06
939172	AE1-147 E	0.6026	Adder	0.71
940201	AE2-001 C	0.9014	Adder	1.06
940202	AE2-001 E	0.6009	Adder	0.71
940681	AE2-055 C (Suspended)	0.8624	Adder	1.01
940682	AE2-055 E (Suspended)	0.5749	Adder	0.68
940861	AE2-074 C	2.3958	50/50	2.3958
940862	AE2-074 E	3.1538	50/50	3.1538
941191	AE2-113 C	10.5550	50/50	10.5550
941192	AE2-113 E	11.3643	50/50	11.3643
941261	AE2-120 C	0.8999	Adder	1.06
941262	AE2-120 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941271	AE2-121 C	0.4830	Adder	0.57
941272	AE2-121 E	0.3225	Adder	0.38
941321	AE2-126 C	1.5685	50/50	1.5685
941322	AE2-126 E	1.0457	50/50	1.0457
941331	AE2-129 C	0.8607	Adder	1.01
941332	AE2-129 E	0.5738	Adder	0.68
941351	AE2-131 C	0.8607	Adder	1.01
941352	AE2-131 E	0.5738	Adder	0.68
941421	AE2-139 C	4.8559	Adder	5.71
941422	AE2-139 E	3.2373	Adder	3.81
942351	AE2-248 C	0.7029	Adder	0.83
942352	AE2-248 E	0.4686	Adder	0.55
942491	AE2-262 C	4.3057	Adder	5.07
942492	AE2-262 E	2.8934	Adder	3.4
942501	AE2-263 C	4.0473	Adder	4.76
942502	AE2-263 E	2.7022	Adder	3.18
942811	AE2-299 C	18.6630	50/50	18.6630
942812	AE2-299 E	74.6522	50/50	74.6522
942961	AE2-316 C	2.8685	Adder	3.37
942962	AE2-316 E	4.0905	Adder	4.81
943351	AF1-006 C	2.6250	50/50	2.6250
943352	AF1-006 E	1.4766	50/50	1.4766
943751	AF1-043	9.4560	Adder	11.12
944001	AF1-068 C O1	0.9320	Adder	1.1
944002	AF1-068 E O1	0.5242	Adder	0.62
944301	AF1-098 C	23.9050	50/50	23.9050
944302	AF1-098 E	15.9366	50/50	15.9366
944311	AF1-099 C	6.5360	Adder	7.69
944312	AF1-099 E	4.3573	Adder	5.13
944321	AF1-100 C	13.9982	Adder	16.47
944322	AF1-100 E	9.3321	Adder	10.98
944381	AF1-103 O1	7.3352	50/50	7.3352
944411	AF1-106 O1	1.8731	Adder	2.2
944471	AF1-112 C	0.9418	Adder	1.11
944472	AF1-112 E	0.5297	Adder	0.62
944671	AF1-132 C O1	0.8710	Adder	1.02
944672	AF1-132 E O1	0.5807	Adder	0.68
944771	AF1-142 C	10.4576	Adder	12.3
944772	AF1-142 E	6.9717	Adder	8.2
944841	AF1-149 C	0.8998	Adder	1.06
944842	AF1-149 E	0.5999	Adder	0.71
944881	AF1-153 C O1	1.4118	50/50	1.4118
944882	AF1-153 E O1	0.9412	50/50	0.9412
944901	AF1-155 C	1.4022	50/50	1.4022
944902	AF1-155 E	0.9348	50/50	0.9348
945121	AF1-177	1.8338	50/50	1.8338
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0895	Adder	0.11
945331	AF1-198	0.2269	Adder	0.27
945491	AF1-214 C	0.9000	Adder	1.06
945492	AF1-214 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945551	AF1-220 C	13.7619	50/50	13.7619
945552	AF1-220 E	9.1797	50/50	9.1797
946111	AF1-276 C	14.2094	50/50	14.2094
946112	AF1-276 E	6.9986	50/50	6.9986
946121	AF1-277 C	14.2094	50/50	14.2094
946122	AF1-277 E	6.9986	50/50	6.9986
946131	AF1-278 C	11.3251	50/50	11.3251
946132	AF1-278 E	5.6328	50/50	5.6328
946211	AF1-286 C O1	0.7586	Adder	0.89
946212	AF1-286 E O1	0.5151	Adder	0.61
946381	AF1-302 C	1.2526	Adder	1.47
946382	AF1-302 E	1.6701	Adder	1.96
946421	AF1-306 C	6.9690	50/50	6.9690
946422	AF1-306 E	27.8762	50/50	27.8762
957451	AF2-039 C	0.3683	Adder	0.82
957452	AF2-039 E	0.2455	Adder	0.54
957581	AF2-052 C	6.4628	50/50	6.4628
957582	AF2-052 E	3.1441	50/50	3.1441
957681	AF2-062 C	24.0768	50/50	24.0768
957682	AF2-062 E	16.0512	50/50	16.0512
957941	AF2-088 C	0.1773	Adder	0.39
957942	AF2-088 E	0.1182	Adder	0.26
958031	AF2-097 C	0.6152	50/50	0.6152
958032	AF2-097 E	0.4102	50/50	0.4102
958271	AF2-121 C	0.4562	Adder	1.01
958272	AF2-121 E	0.3041	Adder	0.68
959061	AF2-197 C O1	1.7085	Adder	3.79
959062	AF2-197 E O1	2.5628	Adder	5.69
959471	AF2-238 C	0.5528	Adder	1.23
959472	AF2-238 E	0.3685	Adder	0.82
959481	AF2-239 C	0.4656	Adder	1.03
959482	AF2-239 E	0.3733	Adder	0.83
959491	AF2-240 C	0.5361	Adder	1.19
959492	AF2-240 E	0.4567	Adder	1.01
959501	AF2-241 C	0.5609	Adder	1.25
959502	AF2-241 E	0.4318	Adder	0.96
959741	AF2-265 C	0.3961	Adder	0.88
959742	AF2-265 E	0.2948	Adder	0.65
960022	AF2-293 E	0.0466	Adder	0.1
960031	AF2-294 C	0.5690	Adder	1.26
960032	AF2-294 E	0.3793	Adder	0.84
960041	AF2-295 C	1.4022	50/50	1.4022
960042	AF2-295 E	0.9348	50/50	0.9348
960271	AF2-318 C	0.5033	Adder	1.12
960272	AF2-318 E	0.3355	Adder	0.74
961141	AF2-405	0.4964	Adder	1.1
961151	AF2-406	3.7227	Adder	8.26
961201	AF2-411 O1	14.0515	Adder	31.19
961211	AF2-412 O1	6.3332	Adder	14.06
961451	AF2-436	0.0581	Adder	0.13
NEWTON	NEWTON	1.4946	Confirmed LTF	1.4946
FARMERCITY	FARMERCITY	0.0768	Confirmed LTF	0.0768

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
G-007A	G-007A	4.5505	Confirmed LTF	4.5505
VFT	VFT	12.5517	Confirmed LTF	12.5517
CALDERWOOD	CALDERWOOD	0.5402	Confirmed LTF	0.5402
PRAIRIE	PRAIRIE	3.4819	Confirmed LTF	3.4819
CHEOAH	CHEOAH	0.5405	Confirmed LTF	0.5405
EDWARDS	EDWARDS	0.5089	Confirmed LTF	0.5089
TILTON	TILTON	0.9053	Confirmed LTF	0.9053
MADISON	MADISON	0.0585	Confirmed LTF	0.0585
GIBSON	GIBSON	0.7617	Confirmed LTF	0.7617
BLUEG	BLUEG	2.3905	Confirmed LTF	2.3905
TRIMBLE	TRIMBLE	0.7680	Confirmed LTF	0.7680
CATAWBA	CATAWBA	0.3028	Confirmed LTF	0.3028

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
100955760	957580	AF2-052 TAP	PENELEC	941190	AE2-113 TAP	PENELEC	1	PN-P7-1-PN-230-002A	tower	160.0	92.49	108.95	DC	26.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
203349	26Z1-069 C	0.2583	50/50	0.2583
235007	AC1-025 BAT	0.0873	Merchant Transmission	0.0873
236828	01GRAYMONT	-0.2056	Adder	-0.24
916202	Z1-069 E	6.3827	50/50	6.3827
922932	AB1-082 OP (Suspended)	3.4087	50/50	3.4087
923442	AB1-160 C	0.0738	50/50	0.0738
923443	AB1-160 E	1.8236	50/50	1.8236
939171	AE1-147 C	-0.6204	Adder	-0.73
940681	AE2-055 C (Suspended)	-0.5873	Adder	-0.69
940861	AE2-074 C	2.5882	50/50	2.5882
940862	AE2-074 E	3.4070	50/50	3.4070
944841	AF1-149 C	-0.6171	Adder	-0.73
944842	AF1-149 E	-0.4114	Adder	-0.48
946111	AF1-276 C	8.7663	50/50	8.7663
946112	AF1-276 E	4.3177	50/50	4.3177
946121	AF1-277 C	8.7663	50/50	8.7663
946122	AF1-277 E	4.3177	50/50	4.3177
946131	AF1-278 C	6.9869	50/50	6.9869
946132	AF1-278 E	3.4751	50/50	3.4751
946423	AF1-306 BAT	27.4626	50/50	27.4626
957581	AF2-052 C	10.7807	50/50	10.7807
957582	AF2-052 E	5.2447	50/50	5.2447
957681	AF2-062 C	15.8040	50/50	15.8040
957682	AF2-062 E	10.5360	50/50	10.5360
960023	AF2-293 BAT	0.0376	Merchant Transmission	0.0376
WEC	WEC	0.0261	Confirmed LTF	0.0261
LGEE	LGEE	0.0439	Confirmed LTF	0.0439
CPL	CPL	0.0185	Confirmed LTF	0.0185
CBM-W2	CBM-W2	0.5815	Confirmed LTF	0.5815
CBM-W1	CBM-W1	1.1259	Confirmed LTF	1.1259
TVA	TVA	0.0882	Confirmed LTF	0.0882
O-066	O-066	0.8131	Confirmed LTF	0.8131
CBM-S2	CBM-S2	0.2254	Confirmed LTF	0.2254
CBM-S1	CBM-S1	0.5623	Confirmed LTF	0.5623
G-007	G-007	0.1331	Confirmed LTF	0.1331
MEC	MEC	0.1239	Confirmed LTF	0.1239

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
99088478	200513	26LEWISTWN	PENELEC	208005	JUNI BU2	PPL	1	PN-P2-3-PN-115-55A	breaker	624.0	152.51	154.1	DC	22.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	1.3440	50/50	1.3440
200665	26SHAWVL 3	7.5857	50/50	7.5857
200666	26SHAWVL 4	7.5605	50/50	7.5605
200715	26SHAWVL 1	5.0273	50/50	5.0273
200722	26SHAWVL 2	5.1561	50/50	5.1561
200812	26ALY HYDR	1.4504	50/50	1.4504
200852	26WARR RDG	0.4144	50/50	0.4144
200883	Q-053 E	6.9533	50/50	6.9533
200886	26ARWF_N39	0.5592	50/50	0.5592
200894	26K02	7.5566	50/50	7.5566
200905	26Q36	0.3212	50/50	0.3212
200913	26SHAW-D	0.2283	50/50	0.2283
200915	26CHSTN_FL	0.1899	50/50	0.1899
201477	26Y2-055	2.7645	Adder	3.25
203034	26NA_O38_P22	0.4893	50/50	0.4893
235003	AC1-025 E	0.5632	50/50	0.5632
236828	01GRAYMONT	1.4477	50/50	1.4477
290086	Q-036 E	7.4480	50/50	7.4480
293301	N-039 E	12.9664	50/50	12.9664
293393	V3-030E	2.8182	Adder	3.32
293603	O-018 E	4.7612	Adder	5.6
294515	O38_P22	11.3456	50/50	11.3456
296332	R-032 E	5.4937	Adder	6.46
919491	AA2-000	93.2852	50/50	93.2852
930511	AB1-092	3.4252	50/50	3.4252
936421	AD2-055	7.0518	50/50	7.0518
936991	AD2-133 C	3.3516	50/50	3.3516
936992	AD2-133 E	15.3298	50/50	15.3298
938381	AE1-071 C	34.6617	50/50	34.6617
938382	AE1-071 E	21.2101	50/50	21.2101
939171	AE1-147 C	4.3175	50/50	4.3175
939172	AE1-147 E	2.8783	50/50	2.8783
940201	AE2-001 C	4.3319	50/50	4.3319
940202	AE2-001 E	2.8879	50/50	2.8879
940681	AE2-055 C (Suspended)	4.5526	50/50	4.5526
940682	AE2-055 E (Suspended)	3.0350	50/50	3.0350
941191	AE2-113 C	9.1621	50/50	9.1621
941192	AE2-113 E	9.8647	50/50	9.8647
941231	AE2-117 C	4.8049	50/50	4.8049
941232	AE2-117 E	3.2033	50/50	3.2033
941241	AE2-118 C	4.8049	50/50	4.8049

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941242	AE2-118 E	3.2033	50/50	3.2033
941261	AE2-120 C	4.3398	50/50	4.3398
941262	AE2-120 E	2.8932	50/50	2.8932
941271	AE2-121 C	2.2821	50/50	2.2821
941272	AE2-121 E	1.5238	50/50	1.5238
941321	AE2-126 C	2.4082	50/50	2.4082
941322	AE2-126 E	1.6054	50/50	1.6054
941331	AE2-129 C	2.4204	50/50	2.4204
941332	AE2-129 E	1.6136	50/50	1.6136
941351	AE2-131 C	2.4204	50/50	2.4204
941352	AE2-131 E	1.6136	50/50	1.6136
942121	AE2-224 C	7.8468	50/50	7.8468
942122	AE2-224 E	5.2312	50/50	5.2312
942351	AE2-248 C	3.5684	50/50	3.5684
942352	AE2-248 E	2.3789	50/50	2.3789
942491	AE2-262 C	14.9385	50/50	14.9385
942492	AE2-262 E	10.0387	50/50	10.0387
942501	AE2-263 C	14.0422	50/50	14.0422
942502	AE2-263 E	9.3754	50/50	9.3754
942511	AE2-264 C	15.7541	50/50	15.7541
942512	AE2-264 E	10.5027	50/50	10.5027
942961	AE2-316 C	6.0886	50/50	6.0886
942962	AE2-316 E	8.6824	50/50	8.6824
943751	AF1-043	21.1554	50/50	21.1554
944001	AF1-068 C O1	4.7875	50/50	4.7875
944002	AF1-068 E O1	2.6929	50/50	2.6929
944181	AF1-086 C O1	2.7357	50/50	2.7357
944182	AF1-086 E O1	11.9019	50/50	11.9019
944311	AF1-099 C	22.6766	50/50	22.6766
944312	AF1-099 E	15.1178	50/50	15.1178
944321	AF1-100 C	38.2035	50/50	38.2035
944322	AF1-100 E	25.4690	50/50	25.4690
944381	AF1-103 O1	1.9052	Adder	2.24
944471	AF1-112 C	4.7322	50/50	4.7322
944472	AF1-112 E	2.6618	50/50	2.6618
944671	AF1-132 C O1	4.5038	50/50	4.5038
944672	AF1-132 E O1	3.0026	50/50	3.0026
944691	AF1-134 C O1	2.0483	50/50	2.0483
944692	AF1-134 E O1	1.3655	50/50	1.3655
944751	AF1-140 C	1.0127	Adder	1.19
944752	AF1-140 E	0.6751	Adder	0.79
944771	AF1-142 C	36.2826	50/50	36.2826
944772	AF1-142 E	24.1884	50/50	24.1884
944841	AF1-149 C	4.3408	50/50	4.3408
944842	AF1-149 E	2.8938	50/50	2.8938
944881	AF1-153 C O1	2.3069	50/50	2.3069
944882	AF1-153 E O1	1.5379	50/50	1.5379
944901	AF1-155 C	2.2932	50/50	2.2932
944902	AF1-155 E	1.5288	50/50	1.5288
945121	AF1-177	0.4763	Adder	0.56
945161	AF1-181	0.2045	50/50	0.2045
945171	AF1-182	1.0253	50/50	1.0253

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945181	AF1-183	0.2389	50/50	0.2389
945491	AF1-214 C	4.3393	50/50	4.3393
945492	AF1-214 E	2.8929	50/50	2.8929
945551	AF1-220 C	17.0161	50/50	17.0161
945552	AF1-220 E	11.3503	50/50	11.3503
946111	AF1-276 C	6.4074	Adder	7.54
946112	AF1-276 E	3.1559	Adder	3.71
946121	AF1-277 C	6.4074	Adder	7.54
946122	AF1-277 E	3.1559	Adder	3.71
946131	AF1-278 C	5.1068	Adder	6.01
946132	AF1-278 E	2.5400	Adder	2.99
946381	AF1-302 C	2.6588	50/50	2.6588
946382	AF1-302 E	3.5450	50/50	3.5450
946421	AF1-306 C	10.0128	50/50	10.0128
946422	AF1-306 E	40.0513	50/50	40.0513
957451	AF2-039 C	1.7865	50/50	1.7865
957452	AF2-039 E	1.1910	50/50	1.1910
957512	AF2-045 E	0.9316	Adder	2.07
957561	AF2-050 C	3.9234	50/50	3.9234
957562	AF2-050 E	2.6156	50/50	2.6156
957581	AF2-052 C	2.0784	Adder	4.61
957582	AF2-052 E	1.0111	Adder	2.24
957681	AF2-062 C	5.9580	Adder	13.23
957682	AF2-062 E	3.9720	Adder	8.82
957931	AF2-087 C	0.6633	50/50	0.6633
957932	AF2-087 E	0.9135	50/50	0.9135
957941	AF2-088 C	0.8602	50/50	0.8602
957942	AF2-088 E	0.5735	50/50	0.5735
957981	AF2-092 C	0.3509	Adder	0.78
957982	AF2-092 E	0.2339	Adder	0.52
958271	AF2-121 C	2.4204	50/50	2.4204
958272	AF2-121 E	1.6136	50/50	1.6136
958551	AF2-146 C	6.7078	50/50	6.7078
958552	AF2-146 E	4.4718	50/50	4.4718
958561	AF2-147 C	4.4149	50/50	4.4149
958562	AF2-147 E	2.9433	50/50	2.9433
958571	AF2-148 C	4.5277	50/50	4.5277
958572	AF2-148 E	3.0185	50/50	3.0185
959401	AF2-231 C	1.2012	50/50	1.2012
959402	AF2-231 E	0.8008	50/50	0.8008
959802	AF2-271 E	0.5341	50/50	0.5341
960022	AF2-293 E	0.4189	50/50	0.4189
960041	AF2-295 C	2.2932	50/50	2.2932
960042	AF2-295 E	1.5288	50/50	1.5288
960051	AF2-296 C	2.0483	50/50	2.0483
960052	AF2-296 E	1.3655	50/50	1.3655
960211	AF2-312 C	0.5747	Adder	1.28
960212	AF2-312 E	0.3832	Adder	0.85
960391	AF2-330 C	6.3179	50/50	6.3179
960392	AF2-330 E	2.7632	50/50	2.7632
960451	AF2-336 C O1	0.5848	Adder	1.3
960452	AF2-336 E O1	0.3898	Adder	0.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960461	AF2-337 C O1	0.5848	Adder	1.3
960462	AF2-337 E O1	0.3898	Adder	0.87
960471	AF2-338 C O1	0.5848	Adder	1.3
960472	AF2-338 E O1	0.3898	Adder	0.87
960481	AF2-339 C O1	0.5848	Adder	1.3
960482	AF2-339 E O1	0.3898	Adder	0.87
WEC	WEC	0.3947	Confirmed LTF	0.3947
LGEE	LGEE	0.6840	Confirmed LTF	0.6840
CPL	CPL	0.3565	Confirmed LTF	0.3565
CBM-W2	CBM-W2	9.0827	Confirmed LTF	9.0827
CBM-W1	CBM-W1	16.5007	Confirmed LTF	16.5007
TVA	TVA	1.4182	Confirmed LTF	1.4182
O-066	O-066	22.6061	Confirmed LTF	22.6061
CBM-S2	CBM-S2	3.9477	Confirmed LTF	3.9477
CBM-S1	CBM-S1	8.9290	Confirmed LTF	8.9290
G-007	G-007	3.5079	Confirmed LTF	3.5079
MEC	MEC	1.9052	Confirmed LTF	1.9052

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
100954545	200579	26WARREN	PENELEC	200570	26CORY E.	PENELEC	1	PN-P2-2-PN-230-009	bus	245.0	100.13	103.16	DC	16.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	5.6727	50/50	5.6727
200643	26SENECA#2	5.3575	50/50	5.3575
200644	26SENECA#3	0.5275	50/50	0.5275
201201	26WRREN CT	2.2484	50/50	2.2484
201477	26Y2-055	6.5946	50/50	6.5946
922932	AB1-082 OP (Suspended)	0.9684	Adder	1.14
940861	AE2-074 C	0.7353	Adder	0.87
940862	AE2-074 E	0.9679	Adder	1.14
941191	AE2-113 C	3.7029	Adder	4.36
941192	AE2-113 E	3.9868	Adder	4.69
941321	AE2-126 C	0.5849	Adder	0.69
941322	AE2-126 E	0.3899	Adder	0.46
942813	AE2-299 BAT	10.8464	Merchant Transmission	10.8464
944381	AF1-103 O1	4.5736	50/50	4.5736
944392	AF1-104 BAT	1.0258	Merchant Transmission	1.0258
944881	AF1-153 C O1	0.5324	Adder	0.63
944882	AF1-153 E O1	0.3550	Adder	0.42
944901	AF1-155 C	0.5287	Adder	0.62
944902	AF1-155 E	0.3524	Adder	0.41
945121	AF1-177	1.1434	50/50	1.1434
945551	AF1-220 C	5.1902	Adder	6.11
945552	AF1-220 E	3.4620	Adder	4.07
946111	AF1-276 C	5.0999	Adder	6.0
946112	AF1-276 E	2.5119	Adder	2.96
946121	AF1-277 C	5.0999	Adder	6.0
946122	AF1-277 E	2.5119	Adder	2.96
946131	AF1-278 C	4.0647	Adder	4.78
946132	AF1-278 E	2.0217	Adder	2.38
946421	AF1-306 C	2.6719	Adder	3.14
946422	AF1-306 E	10.6875	Adder	12.57
957581	AF2-052 C	1.1496	Adder	2.55
957582	AF2-052 E	0.5593	Adder	1.24
957681	AF2-062 C	4.4210	Adder	9.81
957682	AF2-062 E	2.9474	Adder	6.54
960041	AF2-295 C	0.2802	Adder	0.62
960042	AF2-295 E	0.1868	Adder	0.41
NEWTON	NEWTON	0.4760	Confirmed LTF	0.4760
FARMERCITY	FARMERCITY	0.0245	Confirmed LTF	0.0245
G-007A	G-007A	1.3282	Confirmed LTF	1.3282
VFT	VFT	3.6507	Confirmed LTF	3.6507
CALDERWOOD	CALDERWOOD	0.1730	Confirmed LTF	0.1730

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
PRAIRIE	PRAIRIE	1.1107	Confirmed LTF	1.1107
CHEOAH	CHEOAH	0.1727	Confirmed LTF	0.1727
EDWARDS	EDWARDS	0.1620	Confirmed LTF	0.1620
TILTON	TILTON	0.2885	Confirmed LTF	0.2885
MADISON	MADISON	0.0181	Confirmed LTF	0.0181
GIBSON	GIBSON	0.2430	Confirmed LTF	0.2430
BLUEG	BLUEG	0.7621	Confirmed LTF	0.7621
TRIMBLE	TRIMBLE	0.2449	Confirmed LTF	0.2449
CATAWBA	CATAWBA	0.0973	Confirmed LTF	0.0973

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
99088869	200593	26GLADE	PENELEC	200811	26WARREN	PENELEC	1	Base Case	single	520.0	130.3	134.93	DC	24.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	14.1272	80/20	14.1272
200643	26SENECA#2	13.3424	80/20	13.3424
200644	26SENECA#3	1.3137	80/20	1.3137
200649	26PENNTech	1.3034	80/20	1.3034
200665	26SHAWVL 3	3.4974	80/20	3.4974
200666	26SHAWVL 4	3.4794	80/20	3.4794
200715	26SHAWVL 1	2.3847	80/20	2.3847
200722	26SHAWVL 2	2.4434	80/20	2.4434
200887	26ARMNA MT	0.2182	80/20	0.2182
200898	26AA1-106	1.3693	80/20	1.3693
200905	26Q36	0.1267	80/20	0.1267
200913	26SHAW-D	0.1121	80/20	0.1121
200949	26X1-109	7.3553	80/20	7.3553
203261	26BLOSSBCT	0.2315	80/20	0.2315
203349	26Z1-069 C	0.2477	80/20	0.2477
203350	26MILZ1-092	0.1940	80/20	0.1940
203351	26GROZ1-110	0.2362	80/20	0.2362
203352	26CANZ2-011	0.2362	80/20	0.2362
919201	AA1-144 OP	9.3008	80/20	9.3008
919491	AA2-000	46.7769	80/20	46.7769
922932	AB1-082 OP (Suspended)	2.8574	80/20	2.8574
923442	AB1-160 C	0.0708	80/20	0.0708
923821	AB2-019 FTWR	2.9372	80/20	2.9372
930511	AB1-092	1.7175	80/20	1.7175
934801	AD1-108	0.0178	80/20	0.0178
934811	AD1-109	0.0131	80/20	0.0131
935061	AD1-142	0.0107	80/20	0.0107
936421	AD2-055	3.5360	80/20	3.5360
936991	AD2-133 C	1.3225	80/20	1.3225
939171	AE1-147 C	1.1243	80/20	1.1243
939291	AE1-160 C	-0.8062	Adder	-0.95
940201	AE2-001 C	1.1209	80/20	1.1209
940681	AE2-055 C (Suspended)	1.0704	80/20	1.0704
940861	AE2-074 C	2.1696	80/20	2.1696
941191	AE2-113 C	10.8987	80/20	10.8987
941261	AE2-120 C	1.1191	80/20	1.1191
941271	AE2-121 C	0.6008	80/20	0.6008
941321	AE2-126 C	1.7225	80/20	1.7225
941331	AE2-129 C	1.0692	80/20	1.0692
941351	AE2-131 C	1.0692	80/20	1.0692
941421	AE2-139 C	3.8345	80/20	3.8345
942351	AE2-248 C	0.8732	80/20	0.8732

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942491	AE2-262 C	5.3830	80/20	5.3830
942501	AE2-263 C	5.0600	80/20	5.0600
942961	AE2-316 C	3.7292	80/20	3.7292
943751	AF1-043	10.6081	80/20	10.6081
944001	AF1-068 C O1	1.1575	80/20	1.1575
944311	AF1-099 C	8.1714	80/20	8.1714
944321	AF1-100 C	17.7030	80/20	17.7030
944411	AF1-106 O1	1.1302	80/20	1.1302
944471	AF1-112 C	1.1702	80/20	1.1702
944671	AF1-132 C O1	1.0816	80/20	1.0816
944691	AF1-134 C O1	0.9002	80/20	0.9002
944771	AF1-142 C	13.0742	80/20	13.0742
944841	AF1-149 C	1.1189	80/20	1.1189
944881	AF1-153 C O1	1.5708	80/20	1.5708
944901	AF1-155 C	1.5598	80/20	1.5598
945161	AF1-181	0.0943	80/20	0.0943
945171	AF1-182	0.4718	80/20	0.4718
945181	AF1-183	0.1133	80/20	0.1133
945331	AF1-198	0.1766	80/20	0.1766
945491	AF1-214 C	1.1192	80/20	1.1192
945551	AF1-220 C	15.2689	80/20	15.2689
946111	AF1-276 C	14.9872	80/20	14.9872
946121	AF1-277 C	14.9872	80/20	14.9872
946131	AF1-278 C	11.9450	80/20	11.9450
946211	AF1-286 C O1	0.4577	80/20	0.4577
946381	AF1-302 C	1.6285	80/20	1.6285
946421	AF1-306 C	7.8629	80/20	7.8629
957451	AF2-039 C	0.8774	80/20	0.8774
957581	AF2-052 C	6.3869	80/20	6.3869
957681	AF2-062 C	24.5328	80/20	24.5328
957941	AF2-088 C	0.4224	80/20	0.4224
958271	AF2-121 C	1.0692	80/20	1.0692
959471	AF2-238 C	0.7648	80/20	0.7648
959491	AF2-240 C	0.6103	80/20	0.6103
959501	AF2-241 C	0.6386	80/20	0.6386
959741	AF2-265 C	0.5481	80/20	0.5481
960041	AF2-295 C	1.5598	80/20	1.5598
960051	AF2-296 C	0.9002	80/20	0.9002
961141	AF2-405	0.5651	80/20	0.5651
961151	AF2-406	4.2383	80/20	4.2383
961211	AF2-412 O1	8.5826	80/20	8.5826
NEWTON	NEWTON	1.1691	Confirmed LTF	1.1691
FARMERCITY	FARMERCITY	0.0601	Confirmed LTF	0.0601
G-007A	G-007A	3.4332	Confirmed LTF	3.4332
VFT	VFT	9.4299	Confirmed LTF	9.4299
CALDERWOOD	CALDERWOOD	0.4205	Confirmed LTF	0.4205
PRAIRIE	PRAIRIE	2.7225	Confirmed LTF	2.7225
CHEOAH	CHEOAH	0.4204	Confirmed LTF	0.4204
EDWARDS	EDWARDS	0.3986	Confirmed LTF	0.3986
TILTON	TILTON	0.7088	Confirmed LTF	0.7088
MADISON	MADISON	0.0464	Confirmed LTF	0.0464
GIBSON	GIBSON	0.5962	Confirmed LTF	0.5962

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
BLUEG	BLUEG	1.8697	Confirmed LTF	1.8697
TRIMBLE	TRIMBLE	0.6005	Confirmed LTF	0.6005
CATAWBA	CATAWBA	0.2342	Confirmed LTF	0.2342

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
98651379	200599	26ERIE W	PENELEC	238547	02AT	ATSI	1	Base Case	single	1560.0	105.08	106.99	DC	29.76

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	1.2899	80/20	1.2899
200642	26SENECA#1	12.2249	80/20	12.2249
200643	26SENECA#2	11.5457	80/20	11.5457
200644	26SENECA#3	1.1368	80/20	1.1368
200649	26PENNTech	1.5852	80/20	1.5852
200662	26SCRUB GR	5.0216	80/20	5.0216
200828	26HNSMLK 1	3.3779	80/20	3.3779
200829	26HNSMLK 2	3.3779	80/20	3.3779
200830	26HNSMLK 3	3.3779	80/20	3.3779
200831	26HNSMLK 4	3.3779	80/20	3.3779
200832	26HNSMLK 5	3.3779	80/20	3.3779
200849	26LAKVU GN	0.4444	80/20	0.4444
200898	26AA1-106	2.6032	Adder	3.06
201201	26WRREN CT	3.5217	80/20	3.5217
201477	26Y2-055	10.3791	80/20	10.3791
915951	Y3-092 FTIR	587.2500	80/20	587.2500
919491	AA2-000	64.5068	Adder	75.89
920341	AA2-132 (Suspended)	2.6303	Adder	3.09
922932	AB1-082 OP (Suspended)	4.2691	80/20	4.2691
930511	AB1-092	2.3685	Adder	2.79
935191	AD1-154	3.2643	Adder	3.84
936421	AD2-055	4.8763	Adder	5.74
938951	AE1-123	4.1726	80/20	4.1726
939291	AE1-160 C	4.6942	80/20	4.6942
940861	AE2-074 C	3.2415	80/20	3.2415
941191	AE2-113 C	13.9873	80/20	13.9873
941321	AE2-126 C	1.9608	Adder	2.31
941331	AE2-129 C	1.5685	Adder	1.85
941351	AE2-131 C	1.5685	Adder	1.85
942491	AE2-262 C	6.8034	Adder	8.0
942501	AE2-263 C	6.3952	Adder	7.52
942811	AE2-299 C	15.7126	80/20	15.7126
942961	AE2-316 C	6.7674	Adder	7.96
943151	AE2-344 C	35.3918	80/20	35.3918
943351	AF1-006 C	6.7738	80/20	6.7738
943751	AF1-043	14.6290	Adder	17.21
944261	AF1-094 C	5.4823	80/20	5.4823
944281	AF1-096 C	4.4354	80/20	4.4354
944301	AF1-098 C	22.9022	80/20	22.9022
944311	AF1-099 C	10.3276	Adder	12.15
944321	AF1-100 C	21.8765	Adder	25.74
944381	AF1-103 O1	7.1636	80/20	7.1636

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944391	AF1-104 O1	11.2622	80/20	11.2622
944411	AF1-106 O1	2.7752	Adder	3.26
944691	AF1-134 C O1	1.5950	Adder	1.88
944771	AF1-142 C	16.5241	Adder	19.44
944881	AF1-153 C O1	2.0105	Adder	2.37
944901	AF1-155 C	2.0110	Adder	2.37
945021	AF1-167 C	1.2912	Adder	1.52
945051	AF1-170 C	24.9431	80/20	24.9431
945121	AF1-177	1.7909	80/20	1.7909
945161	AF1-181	0.1166	Adder	0.14
945171	AF1-182	0.5828	Adder	0.69
945181	AF1-183	0.1444	Adder	0.17
945331	AF1-198	0.3515	Adder	0.41
945451	AF1-210 C	1.4103	Adder	1.66
945551	AF1-220 C	18.9972	80/20	18.9972
945751	AF1-240 C O1	1.9586	Adder	2.3
946111	AF1-276 C	17.1024	80/20	17.1024
946121	AF1-277 C	17.1024	80/20	17.1024
946131	AF1-278 C	13.6309	80/20	13.6309
946211	AF1-286 C O1	1.1240	Adder	1.32
946221	AF1-287 C	6.0481	80/20	6.0481
946381	AF1-302 C	2.9552	Adder	3.48
946401	AF1-304 C	21.0714	80/20	21.0714
946421	AF1-306 C	8.5386	Adder	10.05
946771	AF1-217 C O2	6.0481	80/20	6.0481
957161	AF2-010 C	20.8242	80/20	20.8242
957451	AF2-039 C	0.6139	Adder	1.36
957571	AF2-051 C O1	15.0124	80/20	15.0124
957581	AF2-052 C	8.4634	80/20	8.4634
957681	AF2-062 C	29.7600	80/20	29.7600
957941	AF2-088 C	0.2956	Adder	0.66
957951	AF2-089 C	1.2197	80/20	1.2197
958031	AF2-097 C	1.5876	80/20	1.5876
958271	AF2-121 C	0.8313	Adder	1.85
958361	AF2-130 C	3.3265	80/20	3.3265
958731	AF2-164 C O1	17.5694	80/20	17.5694
958741	AF2-165 C	3.9576	80/20	3.9576
958751	AF2-166 C	3.3265	80/20	3.3265
958791	AF2-170 C	6.7573	80/20	6.7573
959441	AF2-235 C	2.2177	80/20	2.2177
959461	AF2-237 C	2.7412	80/20	2.7412
959471	AF2-238 C	0.8617	Adder	1.91
959491	AF2-240 C	0.7943	Adder	1.76
959501	AF2-241 C	0.8310	Adder	1.84
959521	AF2-243 C	2.9682	80/20	2.9682
959741	AF2-265 C	0.6175	Adder	1.37
960031	AF2-294 C	0.8406	Adder	1.87
960041	AF2-295 C	1.0658	Adder	2.37
960051	AF2-296 C	0.8453	Adder	1.88
960321	AF2-323 C O1	11.9547	80/20	11.9547
961141	AF2-405	0.7354	Adder	1.63
961151	AF2-406	5.5158	Adder	12.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961201	AF2-411 O1	23.1323	Adder	51.35
961211	AF2-412 O1	9.9660	Adder	22.12
NEWTON	NEWTON	3.6791	Confirmed LTF	3.6791
FARMERCITY	FARMERCITY	0.1889	Confirmed LTF	0.1889
G-007A	G-007A	10.4387	Confirmed LTF	10.4387
VFT	VFT	28.5670	Confirmed LTF	28.5670
CALDERWOOD	CALDERWOOD	1.2733	Confirmed LTF	1.2733
PRAIRIE	PRAIRIE	8.5291	Confirmed LTF	8.5291
CHEOAH	CHEOAH	1.2718	Confirmed LTF	1.2718
EDWARDS	EDWARDS	1.2638	Confirmed LTF	1.2638
TILTON	TILTON	2.2409	Confirmed LTF	2.2409
MADISON	MADISON	0.1230	Confirmed LTF	0.1230
GIBSON	GIBSON	1.8739	Confirmed LTF	1.8739
BLUEG	BLUEG	5.8573	Confirmed LTF	5.8573
TRIMBLE	TRIMBLE	1.8810	Confirmed LTF	1.8810
CATAWBA	CATAWBA	0.6818	Confirmed LTF	0.6818

11.6.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
100954943	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	158.42	161.61	DC	6.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	0.3714	80/20	0.3714
200665	26SHAWVL 3	1.5072	80/20	1.5072
200666	26SHAWVL 4	1.4899	80/20	1.4899
200887	26ARMNA MT	0.5912	80/20	0.5912
200898	26AA1-106	3.3036	80/20	3.3036
200949	26X1-109	26.2332	80/20	26.2332
203261	26BLOSSBCT	0.4864	80/20	0.4864
203283	26MANOR_T86	0.0519	80/20	0.0519
203349	26Z1-069 C	0.2495	80/20	0.2495
203350	26MILZ1-092	0.6000	80/20	0.6000
203351	26GROZ1-110	0.5698	80/20	0.5698
203352	26CANZ2-011	0.5698	80/20	0.5698
919201	AA1-144 OP	31.9154	80/20	31.9154
919491	AA2-000	44.5915	80/20	44.5915
920351	AA2-133	0.2275	80/20	0.2275
922932	AB1-082 OP (Suspended)	1.6238	80/20	1.6238
923442	AB1-160 C	0.0713	80/20	0.0713
930511	AB1-092	1.6373	80/20	1.6373
934801	AD1-108	0.0430	80/20	0.0430
934811	AD1-109	0.0315	80/20	0.0315
935061	AD1-142	0.0332	80/20	0.0332
936421	AD2-055	3.3708	80/20	3.3708
940861	AE2-074 C	1.2330	80/20	1.2330
941191	AE2-113 C	3.4749	80/20	3.4749
941421	AE2-139 C	10.9083	80/20	10.9083
942491	AE2-262 C	2.5070	80/20	2.5070
942501	AE2-263 C	2.3566	80/20	2.3566
943751	AF1-043	10.1125	80/20	10.1125
944311	AF1-099 C	3.8056	80/20	3.8056
944321	AF1-100 C	7.8540	80/20	7.8540
944411	AF1-106 O1	3.4958	80/20	3.4958
944771	AF1-142 C	6.0890	80/20	6.0890
945161	AF1-181	0.0406	80/20	0.0406
945171	AF1-182	0.2020	80/20	0.2020
945331	AF1-198	0.3711	80/20	0.3711
946111	AF1-276 C	3.5322	80/20	3.5322
946121	AF1-277 C	3.5322	80/20	3.5322
946131	AF1-278 C	2.8152	80/20	2.8152
946211	AF1-286 C O1	1.4158	80/20	1.4158
957581	AF2-052 C	2.1708	80/20	2.1708
957681	AF2-062 C	6.4416	80/20	6.4416

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959061	AF2-197 C O1	10.2256	80/20	10.2256
959471	AF2-238 C	2.1307	80/20	2.1307
959481	AF2-239 C	2.5693	80/20	2.5693
959491	AF2-240 C	1.8877	80/20	1.8877
959501	AF2-241 C	1.9751	80/20	1.9751
959741	AF2-265 C	1.5270	80/20	1.5270
960271	AF2-318 C	2.7776	80/20	2.7776
961141	AF2-405	1.7479	80/20	1.7479
961151	AF2-406	13.1092	80/20	13.1092
961201	AF2-411 O1	34.0710	80/20	34.0710
961211	AF2-412 O1	18.2585	80/20	18.2585
961451	AF2-436	0.0994	80/20	0.0994
WEC	WEC	0.1852	Confirmed LTF	0.1852
LGEE	LGEE	0.3240	Confirmed LTF	0.3240
CPL	CPL	0.2209	Confirmed LTF	0.2209
CBM-W2	CBM-W2	4.3898	Confirmed LTF	4.3898
CBM-W1	CBM-W1	7.6686	Confirmed LTF	7.6686
TVA	TVA	0.7014	Confirmed LTF	0.7014
CBM-S2	CBM-S2	2.2195	Confirmed LTF	2.2195
CBM-S1	CBM-S1	4.3793	Confirmed LTF	4.3793
MEC	MEC	0.9026	Confirmed LTF	0.9026

11.6.8 Index 8

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
9908881	200675	26E.TWANDA	PENELEC	200924	26CANYON	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	135.04	136.68	DC	10.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O1	14.2789	80/20	14.2789
959471	AF2-238 C	3.7598	80/20	3.7598

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

11.6.9 Index 9

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
99088201	200706	26N.MESHPN	PENELEC	200708	26OXBOW	PENELEC	1	AP-P2-2-WP-230-005T	bus	984.0	117.6	119.0	DC	30.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.2766	50/50	11.2766
200851	26MEHOOP3	5.7382	50/50	5.7382
200894	26K02	17.1541	Adder	20.18
200898	26AA1-106	6.4806	Adder	7.62
200917	26MTNTP_P28	2.9177	50/50	2.9177
200949	26X1-109	61.1623	50/50	61.1623
203283	26MANOR_T86	0.1014	50/50	0.1014
203347	26NME_Y1-047	1.9354	50/50	1.9354
203909	26Z1-038	8.6625	50/50	8.6625
203910	26Z1-091	9.4063	50/50	9.4063
203999	P-047 E	24.5379	Adder	28.87
235003	AC1-025 E	0.2027	Adder	0.24
236828	01GRAYMONT	0.5509	Adder	0.65
294573	P-028 E	67.6596	50/50	67.6596
916202	Z1-069 E	12.5370	Adder	14.75
918602	AA1-077 E	-8.5025	Adder	-10.0
918682	AA1-082 E	26.6512	50/50	26.6512
919201	AA1-144 OP	74.5432	50/50	74.5432
919491	AA2-000	100.6189	Adder	118.38
920341	AA2-132 (Suspended)	7.2516	Adder	8.53
920351	AA2-133	1.5271	50/50	1.5271
922932	AB1-082 OP (Suspended)	3.5046	Adder	4.12
923443	AB1-160 E	3.5820	Adder	4.21
930511	AB1-092	3.6944	Adder	4.35
934821	AD1-110	0.1459	50/50	0.1459
936421	AD2-055	7.6062	Adder	8.95
938332	AE1-051 BAT	1.2662	Merchant Transmission	1.2662
939171	AE1-147 C	1.6579	Adder	1.95
939172	AE1-147 E	1.1053	Adder	1.3
940201	AE2-001 C	1.6545	Adder	1.95
940202	AE2-001 E	1.1030	Adder	1.3
940681	AE2-055 C (Suspended)	1.6032	Adder	1.89
940682	AE2-055 E (Suspended)	1.0688	Adder	1.26
940861	AE2-074 C	2.6610	Adder	3.13
940862	AE2-074 E	3.5029	Adder	4.12
941191	AE2-113 C	8.4141	Adder	9.9
941192	AE2-113 E	9.0593	Adder	10.66
941261	AE2-120 C	1.6531	Adder	1.94
941262	AE2-120 E	1.1021	Adder	1.3
941271	AE2-121 C	0.8835	Adder	1.04
941272	AE2-121 E	0.5899	Adder	0.69

Bus #	Bus	Gendoliv MW Impact	Type	Full MW Impact
941321	AE2-126 C	1.4861	Adder	1.75
941322	AE2-126 E	0.9908	Adder	1.17
941421	AE2-139 C	21.8690	Adder	25.73
941422	AE2-139 E	14.5793	Adder	17.15
942351	AE2-248 C	1.3016	Adder	1.53
942352	AE2-248 E	0.8677	Adder	1.02
942491	AE2-262 C	7.2633	Adder	8.55
942492	AE2-262 E	4.8809	Adder	5.74
942501	AE2-263 C	6.8275	Adder	8.03
942502	AE2-263 E	4.5584	Adder	5.36
943751	AF1-043	22.8185	Adder	26.85
944001	AF1-068 C O1	1.7269	Adder	2.03
944002	AF1-068 E O1	0.9714	Adder	1.14
944311	AF1-099 C	11.0256	Adder	12.97
944312	AF1-099 E	7.3504	Adder	8.65
944321	AF1-100 C	21.1268	Adder	24.86
944322	AF1-100 E	14.0845	Adder	16.57
944411	AF1-106 O1	6.5739	Adder	7.73
944471	AF1-112 C	1.7404	Adder	2.05
944472	AF1-112 E	0.9790	Adder	1.15
944671	AF1-132 C O1	1.6151	Adder	1.9
944672	AF1-132 E O1	1.0767	Adder	1.27
944771	AF1-142 C	17.6410	Adder	20.75
944772	AF1-142 E	11.7607	Adder	13.84
944841	AF1-149 C	1.6530	Adder	1.94
944842	AF1-149 E	1.1020	Adder	1.3
944881	AF1-153 C O1	1.4524	Adder	1.71
944882	AF1-153 E O1	0.9683	Adder	1.14
944901	AF1-155 C	1.4455	Adder	1.7
944902	AF1-155 E	0.9637	Adder	1.13
945161	AF1-181	0.1102	Adder	0.13
945171	AF1-182	0.5491	Adder	0.65
945181	AF1-183	0.1292	Adder	0.15
945331	AF1-198	0.7271	Adder	0.86
945491	AF1-214 C	1.6532	Adder	1.94
945492	AF1-214 E	1.1021	Adder	1.3
945551	AF1-220 C	11.5236	Adder	13.56
945552	AF1-220 E	7.6866	Adder	9.04
946111	AF1-276 C	8.5009	Adder	10.0
946112	AF1-276 E	4.1870	Adder	4.93
946121	AF1-277 C	8.5009	Adder	10.0
946122	AF1-277 E	4.1870	Adder	4.93
946131	AF1-278 C	6.7754	Adder	7.97
946132	AF1-278 E	3.3699	Adder	3.96
946211	AF1-286 C O1	2.6624	Adder	3.13
946212	AF1-286 E O1	1.8078	Adder	2.13
946421	AF1-306 C	6.3561	Adder	7.48
946422	AF1-306 E	25.4246	Adder	29.91
957451	AF2-039 C	0.5142	Adder	1.14
957452	AF2-039 E	0.3428	Adder	0.76
957581	AF2-052 C	2.7165	Adder	6.03
957582	AF2-052 E	1.3215	Adder	2.93

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	8.1917	Adder	18.18
957682	AF2-062 E	5.4611	Adder	12.12
957941	AF2-088 C	0.2476	Adder	0.55
957942	AF2-088 E	0.1651	Adder	0.37
959061	AF2-197 C O1	18.2811	50/50	18.2811
959062	AF2-197 E O1	27.4216	50/50	27.4216
959471	AF2-238 C	2.0124	Adder	4.47
959472	AF2-238 E	1.3416	Adder	2.98
959481	AF2-239 C	5.0215	50/50	5.0215
959482	AF2-239 E	4.0263	50/50	4.0263
959491	AF2-240 C	1.8815	Adder	4.18
959492	AF2-240 E	1.6027	Adder	3.56
959501	AF2-241 C	1.9686	Adder	4.37
959502	AF2-241 E	1.5156	Adder	3.36
959741	AF2-265 C	1.4422	Adder	3.2
959742	AF2-265 E	1.0733	Adder	2.38
959913	AF2-282 BAT	0.1007	Merchant Transmission	0.1007
959923	AF2-283 BAT	0.1007	Merchant Transmission	0.1007
960022	AF2-293 E	0.0854	Adder	0.19
960031	AF2-294 C	2.3176	Adder	5.14
960032	AF2-294 E	1.5451	Adder	3.43
960041	AF2-295 C	0.7661	Adder	1.7
960042	AF2-295 E	0.5108	Adder	1.13
960271	AF2-318 C	5.4287	50/50	5.4287
960272	AF2-318 E	3.6191	50/50	3.6191
961141	AF2-405	1.7421	Adder	3.87
961151	AF2-406	13.0656	Adder	29.0
961201	AF2-411 O1	40.1896	Adder	89.21
961211	AF2-412 O1	18.8515	Adder	41.85
961451	AF2-436	0.6673	50/50	0.6673
WEC	WEC	0.4804	Confirmed LTF	0.4804
LGEE	LGEE	0.8369	Confirmed LTF	0.8369
CPL	CPL	0.5365	Confirmed LTF	0.5365
CBM-W2	CBM-W2	11.2858	Confirmed LTF	11.2858
CBM-W1	CBM-W1	19.9785	Confirmed LTF	19.9785
TVA	TVA	1.7934	Confirmed LTF	1.7934
O-066	O-066	35.7840	Confirmed LTF	35.7840
CBM-S2	CBM-S2	5.5083	Confirmed LTF	5.5083
CBM-S1	CBM-S1	11.2038	Confirmed LTF	11.2038
G-007	G-007	5.1574	Confirmed LTF	5.1574
MEC	MEC	2.3342	Confirmed LTF	2.3342

11.6.10 Index 10

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99088216	200708	26OXBOW	PENELEC	208009	LACK	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	119.18	120.6	DC	30.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.5222	50/50	11.5222
200851	26MEHOOP3	5.8631	50/50	5.8631
200894	26K02	17.3483	Adder	20.41
200898	26AA1-106	6.5596	Adder	7.72
200917	26MTNTP_P28	2.9813	50/50	2.9813
200949	26X1-109	61.8419	50/50	61.8419
203283	26MANOR_T86	0.1048	50/50	0.1048
203347	26NME_Y1-047	1.9776	50/50	1.9776
203907	26Y2-042	12.3229	50/50	12.3229
203909	26Z1-038	11.5197	50/50	11.5197
203910	26Z1-091	9.5916	50/50	9.5916
203999	P-047 E	24.9012	Adder	29.3
235003	AC1-025 E	0.2051	Adder	0.24
236828	01GRAYMONT	0.5573	Adder	0.66
294573	P-028 E	69.1332	50/50	69.1332
916202	Z1-069 E	12.7129	Adder	14.96
917631	Z2-104	0.1858	50/50	0.1858
918682	AA1-082 E	26.9474	50/50	26.9474
919201	AA1-144 OP	64.0669	Adder	75.37
919491	AA2-000	101.7720	Adder	119.73
920341	AA2-132 (Suspended)	7.3849	Adder	8.69
920351	AA2-133	1.7724	50/50	1.7724
922932	AB1-082 OP (Suspended)	3.5528	Adder	4.18
923443	AB1-160 E	3.6323	Adder	4.27
930511	AB1-092	3.7368	Adder	4.4
934821	AD1-110	0.1491	50/50	0.1491
936421	AD2-055	7.6933	Adder	9.05
939171	AE1-147 C	1.6772	Adder	1.97
939172	AE1-147 E	1.1181	Adder	1.32
940201	AE2-001 C	1.6738	Adder	1.97
940202	AE2-001 E	1.1159	Adder	1.31
940681	AE2-055 C (Suspended)	1.6219	Adder	1.91
940682	AE2-055 E (Suspended)	1.0813	Adder	1.27
940861	AE2-074 C	2.6976	Adder	3.17
940862	AE2-074 E	3.5510	Adder	4.18
941191	AE2-113 C	8.5226	Adder	10.03
941192	AE2-113 E	9.1761	Adder	10.8
941261	AE2-120 C	1.6724	Adder	1.97
941262	AE2-120 E	1.1149	Adder	1.31
941271	AE2-121 C	0.8938	Adder	1.05
941272	AE2-121 E	0.5968	Adder	0.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941321	AE2-126 C	1.5042	Adder	1.77
941322	AE2-126 E	1.0028	Adder	1.18
941421	AE2-139 C	22.1140	Adder	26.02
941422	AE2-139 E	14.7426	Adder	17.34
942351	AE2-248 C	1.3168	Adder	1.55
942352	AE2-248 E	0.8779	Adder	1.03
942491	AE2-262 C	7.3483	Adder	8.65
942492	AE2-262 E	4.9380	Adder	5.81
942501	AE2-263 C	6.9074	Adder	8.13
942502	AE2-263 E	4.6118	Adder	5.43
943751	AF1-043	23.0800	Adder	27.15
944001	AF1-068 C O1	1.7469	Adder	2.06
944002	AF1-068 E O1	0.9826	Adder	1.16
944311	AF1-099 C	11.1546	Adder	13.12
944312	AF1-099 E	7.4364	Adder	8.75
944321	AF1-100 C	21.3766	Adder	25.15
944322	AF1-100 E	14.2511	Adder	16.77
944411	AF1-106 O1	6.6708	Adder	7.85
944471	AF1-112 C	1.7605	Adder	2.07
944472	AF1-112 E	0.9903	Adder	1.17
944671	AF1-132 C O1	1.6338	Adder	1.92
944672	AF1-132 E O1	1.0892	Adder	1.28
944771	AF1-142 C	17.8474	Adder	21.0
944772	AF1-142 E	11.8983	Adder	14.0
944841	AF1-149 C	1.6722	Adder	1.97
944842	AF1-149 E	1.1148	Adder	1.31
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4630	Adder	1.72
944902	AF1-155 E	0.9753	Adder	1.15
945161	AF1-181	0.1115	Adder	0.13
945171	AF1-182	0.5556	Adder	0.65
945181	AF1-183	0.1307	Adder	0.15
945331	AF1-198	0.7368	Adder	0.87
945491	AF1-214 C	1.6724	Adder	1.97
945492	AF1-214 E	1.1149	Adder	1.31
945551	AF1-220 C	11.6659	Adder	13.72
945552	AF1-220 E	7.7816	Adder	9.15
946111	AF1-276 C	8.6131	Adder	10.13
946112	AF1-276 E	4.2423	Adder	4.99
946121	AF1-277 C	8.6131	Adder	10.13
946122	AF1-277 E	4.2423	Adder	4.99
946131	AF1-278 C	6.8648	Adder	8.08
946132	AF1-278 E	3.4144	Adder	4.02
946211	AF1-286 C O1	2.7017	Adder	3.18
946212	AF1-286 E O1	1.8345	Adder	2.16
946421	AF1-306 C	6.4328	Adder	7.57
946422	AF1-306 E	25.7313	Adder	30.27
957451	AF2-039 C	0.5204	Adder	1.16
957452	AF2-039 E	0.3469	Adder	0.77
957581	AF2-052 C	2.7523	Adder	6.11
957582	AF2-052 E	1.3390	Adder	2.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	8.3004	Adder	18.42
957682	AF2-062 E	5.5336	Adder	12.28
957941	AF2-088 C	0.2506	Adder	0.56
957942	AF2-088 E	0.1670	Adder	0.37
959061	AF2-197 C O1	8.3668	Adder	18.57
959062	AF2-197 E O1	12.5502	Adder	27.86
959471	AF2-238 C	2.0414	Adder	4.53
959472	AF2-238 E	1.3609	Adder	3.02
959481	AF2-239 C	5.1860	50/50	5.1860
959482	AF2-239 E	4.1582	50/50	4.1582
959491	AF2-240 C	1.9092	Adder	4.24
959492	AF2-240 E	1.6263	Adder	3.61
959501	AF2-241 C	1.9976	Adder	4.43
959502	AF2-241 E	1.5380	Adder	3.41
959741	AF2-265 C	1.4630	Adder	3.25
959742	AF2-265 E	1.0887	Adder	2.42
960022	AF2-293 E	0.0864	Adder	0.19
960031	AF2-294 C	2.3602	Adder	5.24
960032	AF2-294 E	1.5735	Adder	3.49
960041	AF2-295 C	0.7754	Adder	1.72
960042	AF2-295 E	0.5169	Adder	1.15
960271	AF2-318 C	5.6065	50/50	5.6065
960272	AF2-318 E	3.7377	50/50	3.7377
961141	AF2-405	1.7678	Adder	3.92
961151	AF2-406	13.2582	Adder	29.43
961201	AF2-411 O1	40.7423	Adder	90.44
961211	AF2-412 O1	19.1215	Adder	42.45
961451	AF2-436	0.7745	50/50	0.7745
961461	AF2-437	1.0101	50/50	1.0101
WEC	WEC	0.4864	Confirmed LTF	0.4864
LGEE	LGEE	0.8472	Confirmed LTF	0.8472
CPL	CPL	0.5431	Confirmed LTF	0.5431
CBM-W2	CBM-W2	11.4250	Confirmed LTF	11.4250
CBM-W1	CBM-W1	20.2287	Confirmed LTF	20.2287
TVA	TVA	1.8158	Confirmed LTF	1.8158
O-066	O-066	36.2611	Confirmed LTF	36.2611
CBM-S2	CBM-S2	5.5777	Confirmed LTF	5.5777
CBM-S1	CBM-S1	11.3486	Confirmed LTF	11.3486
G-007	G-007	5.2260	Confirmed LTF	5.2260
MEC	MEC	2.3644	Confirmed LTF	2.3644

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
100954627	200711	26WHETSTON	PENELEC	200720	26HARVY.RU	PENELEC	1	AP-P2-3-WP-230-708C	breaker	172.0	145.38	149.72	DC	16.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.4989	50/50	4.4989
200643	26SENECA#2	4.2490	50/50	4.2490
200644	26SENECA#3	0.4184	50/50	0.4184
200649	26PENNTech	1.9928	50/50	1.9928
201477	26Y2-055	2.2533	Adder	2.65
235007	AC1-025 BAT	0.0833	Merchant Transmission	0.0833
236828	01GRAYMONT	-0.1938	Adder	-0.23
916202	Z1-069 E	2.4743	Adder	2.91
922932	AB1-082 OP (Suspended)	1.3359	Adder	1.57
923443	AB1-160 E	0.7070	Adder	0.83
939171	AE1-147 C	-0.5838	Adder	-0.69
940681	AE2-055 C (Suspended)	-0.5622	Adder	-0.66
940861	AE2-074 C	1.0144	Adder	1.19
940862	AE2-074 E	1.3353	Adder	1.57
941191	AE2-113 C	11.1822	50/50	11.1822
941192	AE2-113 E	12.0397	50/50	12.0397
944381	AF1-103 O1	1.5521	Adder	1.83
944841	AF1-149 C	-0.5817	Adder	-0.68
944842	AF1-149 E	-0.3878	Adder	-0.46
945121	AF1-177	0.3880	Adder	0.46
945551	AF1-220 C	31.1821	50/50	31.1821
945552	AF1-220 E	20.7995	50/50	20.7995
946111	AF1-276 C	4.9193	Adder	5.79
946112	AF1-276 E	2.4230	Adder	2.85
946121	AF1-277 C	4.9193	Adder	5.79
946122	AF1-277 E	2.4230	Adder	2.85
946131	AF1-278 C	3.9208	Adder	4.61
946132	AF1-278 E	1.9501	Adder	2.29
946421	AF1-306 C	9.7013	50/50	9.7013
946422	AF1-306 E	38.8050	50/50	38.8050
957581	AF2-052 C	4.5573	50/50	4.5573
957582	AF2-052 E	2.2171	50/50	2.2171
957681	AF2-062 C	4.4627	Adder	9.91
957682	AF2-062 E	2.9751	Adder	6.6
959803	AF2-271 BAT	0.0603	Merchant Transmission	0.0603
960023	AF2-293 BAT	0.0354	Merchant Transmission	0.0354
WEC	WEC	0.0636	Confirmed LTF	0.0636
LGEE	LGEE	0.1061	Confirmed LTF	0.1061
CPL	CPL	0.0410	Confirmed LTF	0.0410
CBM-W2	CBM-W2	1.3923	Confirmed LTF	1.3923
CBM-W1	CBM-W1	2.8022	Confirmed LTF	2.8022

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TVA	TVA	0.2100	Confirmed LTF	0.2100
O-066	O-066	2.4528	Confirmed LTF	2.4528
CBM-S2	CBM-S2	0.5029	Confirmed LTF	0.5029
CBM-S1	CBM-S1	1.3291	Confirmed LTF	1.3291
G-007	G-007	0.3786	Confirmed LTF	0.3786
MEC	MEC	0.3019	Confirmed LTF	0.3019

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
100954846	200712	26DUBOIS	PENELEC	200713	26ROCKTON	PENELEC	1	AP-P2-3-WP-230-708C	breaker	190.0	104.82	108.79	DC	16.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.5550	50/50	4.5550
200643	26SENECA#2	4.3020	50/50	4.3020
200644	26SENECA#3	0.4236	50/50	0.4236
200649	26PENNTech	2.0176	50/50	2.0176
201477	26Y2-055	2.2814	Adder	2.68
235007	AC1-025 BAT	0.0844	Merchant Transmission	0.0844
236828	01GRAYMONT	-0.1962	Adder	-0.23
916202	Z1-069 E	2.5052	Adder	2.95
922932	AB1-082 OP (Suspended)	1.3525	Adder	1.59
923443	AB1-160 E	0.7158	Adder	0.84
939171	AE1-147 C	-0.5911	Adder	-0.7
940681	AE2-055 C (Suspended)	-0.5693	Adder	-0.67
940861	AE2-074 C	1.0270	Adder	1.21
940862	AE2-074 E	1.3518	Adder	1.59
941191	AE2-113 C	11.3212	50/50	11.3212
941192	AE2-113 E	12.1893	50/50	12.1893
941321	AE2-126 C	6.6109	50/50	6.6109
941322	AE2-126 E	4.4073	50/50	4.4073
944381	AF1-103 O1	1.5715	Adder	1.85
944841	AF1-149 C	-0.5889	Adder	-0.69
944842	AF1-149 E	-0.3926	Adder	-0.46
945121	AF1-177	0.3929	Adder	0.46
945551	AF1-220 C	31.5706	50/50	31.5706
945552	AF1-220 E	21.0587	50/50	21.0587
946111	AF1-276 C	4.9803	Adder	5.86
946112	AF1-276 E	2.4530	Adder	2.89
946121	AF1-277 C	4.9803	Adder	5.86
946122	AF1-277 E	2.4530	Adder	2.89
946131	AF1-278 C	3.9694	Adder	4.67
946132	AF1-278 E	1.9743	Adder	2.32
946421	AF1-306 C	9.8220	50/50	9.8220
946422	AF1-306 E	39.2882	50/50	39.2882
957581	AF2-052 C	4.6143	50/50	4.6143
957582	AF2-052 E	2.2448	50/50	2.2448
957681	AF2-062 C	4.5183	Adder	10.03
957682	AF2-062 E	3.0122	Adder	6.69
959803	AF2-271 BAT	0.0610	Merchant Transmission	0.0610
960023	AF2-293 BAT	0.0358	Merchant Transmission	0.0358
WEC	WEC	0.0646	Confirmed LTF	0.0646
LGEE	LGEE	0.1073	Confirmed LTF	0.1073
CPL	CPL	0.0417	Confirmed LTF	0.0417

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	1.4087	Confirmed LTF	1.4087
CBM-W1	CBM-W1	2.8398	Confirmed LTF	2.8398
TVA	TVA	0.2128	Confirmed LTF	0.2128
O-066	O-066	2.4864	Confirmed LTF	2.4864
CBM-S2	CBM-S2	0.5144	Confirmed LTF	0.5144
CBM-S1	CBM-S1	1.3462	Confirmed LTF	1.3462
G-007	G-007	0.3838	Confirmed LTF	0.3838
MEC	MEC	0.3051	Confirmed LTF	0.3051

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
100954863	200713	26ROCKTON	PENELEC	200714	26SHAWVL 1	PENELEC	1	AP-P2-3-WP-230-708C	breaker	190.0	103.19	107.16	DC	16.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.5550	50/50	4.5550
200643	26SENECA#2	4.3020	50/50	4.3020
200644	26SENECA#3	0.4236	50/50	0.4236
200649	26PENNTech	2.0176	50/50	2.0176
201477	26Y2-055	2.2814	Adder	2.68
235007	AC1-025 BAT	0.0844	Merchant Transmission	0.0844
236828	01GRAYMONT	-0.1962	Adder	-0.23
916202	Z1-069 E	2.5052	Adder	2.95
922932	AB1-082 OP (Suspended)	1.3525	Adder	1.59
923443	AB1-160 E	0.7158	Adder	0.84
939171	AE1-147 C	-0.5911	Adder	-0.7
940681	AE2-055 C (Suspended)	-0.5693	Adder	-0.67
940861	AE2-074 C	1.0270	Adder	1.21
940862	AE2-074 E	1.3518	Adder	1.59
941191	AE2-113 C	11.3212	50/50	11.3212
941192	AE2-113 E	12.1893	50/50	12.1893
941321	AE2-126 C	6.6109	50/50	6.6109
941322	AE2-126 E	4.4073	50/50	4.4073
944381	AF1-103 O1	1.5715	Adder	1.85
944841	AF1-149 C	-0.5889	Adder	-0.69
944842	AF1-149 E	-0.3926	Adder	-0.46
945121	AF1-177	0.3929	Adder	0.46
945551	AF1-220 C	31.5706	50/50	31.5706
945552	AF1-220 E	21.0587	50/50	21.0587
946111	AF1-276 C	4.9803	Adder	5.86
946112	AF1-276 E	2.4530	Adder	2.89
946121	AF1-277 C	4.9803	Adder	5.86
946122	AF1-277 E	2.4530	Adder	2.89
946131	AF1-278 C	3.9694	Adder	4.67
946132	AF1-278 E	1.9743	Adder	2.32
946421	AF1-306 C	9.8220	50/50	9.8220
946422	AF1-306 E	39.2882	50/50	39.2882
957581	AF2-052 C	4.6143	50/50	4.6143
957582	AF2-052 E	2.2448	50/50	2.2448
957681	AF2-062 C	4.5183	Adder	10.03
957682	AF2-062 E	3.0122	Adder	6.69
959803	AF2-271 BAT	0.0610	Merchant Transmission	0.0610
960023	AF2-293 BAT	0.0358	Merchant Transmission	0.0358
WEC	WEC	0.0646	Confirmed LTF	0.0646
LGEE	LGEE	0.1073	Confirmed LTF	0.1073
CPL	CPL	0.0417	Confirmed LTF	0.0417

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-W2	CBM-W2	1.4087	Confirmed LTF	1.4087
CBM-W1	CBM-W1	2.8398	Confirmed LTF	2.8398
TVA	TVA	0.2128	Confirmed LTF	0.2128
O-066	O-066	2.4864	Confirmed LTF	2.4864
CBM-S2	CBM-S2	0.5144	Confirmed LTF	0.5144
CBM-S1	CBM-S1	1.3462	Confirmed LTF	1.3462
G-007	G-007	0.3838	Confirmed LTF	0.3838
MEC	MEC	0.3051	Confirmed LTF	0.3051

11.6.14 Index 14

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
100954673	200720	26HARVY.RU	PENELEC	200712	26DUBOIS	PENELEC	1	AP-P2-3-WP-230-708C	breaker	179.0	135.05	139.26	DC	16.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.5550	50/50	4.5550
200643	26SENECA#2	4.3020	50/50	4.3020
200644	26SENECA#3	0.4236	50/50	0.4236
200649	26PENNTech	2.0176	50/50	2.0176
201477	26Y2-055	2.2814	Adder	2.68
235007	AC1-025 BAT	0.0844	Merchant Transmission	0.0844
236828	01GRAYMONT	-0.1962	Adder	-0.23
916202	Z1-069 E	2.5052	Adder	2.95
922932	AB1-082 OP (Suspended)	1.3525	Adder	1.59
923443	AB1-160 E	0.7158	Adder	0.84
939171	AE1-147 C	-0.5911	Adder	-0.7
940681	AE2-055 C (Suspended)	-0.5693	Adder	-0.67
940861	AE2-074 C	1.0270	Adder	1.21
940862	AE2-074 E	1.3518	Adder	1.59
941191	AE2-113 C	11.3212	50/50	11.3212
941192	AE2-113 E	12.1893	50/50	12.1893
944381	AF1-103 O1	1.5715	Adder	1.85
944841	AF1-149 C	-0.5889	Adder	-0.69
944842	AF1-149 E	-0.3926	Adder	-0.46
945121	AF1-177	0.3929	Adder	0.46
945551	AF1-220 C	31.5706	50/50	31.5706
945552	AF1-220 E	21.0587	50/50	21.0587
946111	AF1-276 C	4.9803	Adder	5.86
946112	AF1-276 E	2.4530	Adder	2.89
946121	AF1-277 C	4.9803	Adder	5.86
946122	AF1-277 E	2.4530	Adder	2.89
946131	AF1-278 C	3.9694	Adder	4.67
946132	AF1-278 E	1.9743	Adder	2.32
946421	AF1-306 C	9.8220	50/50	9.8220
946422	AF1-306 E	39.2882	50/50	39.2882
957581	AF2-052 C	4.6143	50/50	4.6143
957582	AF2-052 E	2.2448	50/50	2.2448
957681	AF2-062 C	4.5183	Adder	10.03
957682	AF2-062 E	3.0122	Adder	6.69
959803	AF2-271 BAT	0.0610	Merchant Transmission	0.0610
960023	AF2-293 BAT	0.0358	Merchant Transmission	0.0358
WEC	WEC	0.0646	Confirmed LTF	0.0646
LGEE	LGEE	0.1073	Confirmed LTF	0.1073
CPL	CPL	0.0417	Confirmed LTF	0.0417
CBM-W2	CBM-W2	1.4087	Confirmed LTF	1.4087
CBM-W1	CBM-W1	2.8398	Confirmed LTF	2.8398

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TVA	TVA	0.2128	Confirmed LTF	0.2128
O-066	O-066	2.4864	Confirmed LTF	2.4864
CBM-S2	CBM-S2	0.5144	Confirmed LTF	0.5144
CBM-S1	CBM-S1	1.3462	Confirmed LTF	1.3462
G-007	G-007	0.3838	Confirmed LTF	0.3838
MEC	MEC	0.3051	Confirmed LTF	0.3051

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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
98651294	200726	26SHAWVL 2	PENELEC	235248	01SHINGL	AP	1	AP-P1-2-WP-230-005B	single	554.0	127.09	128.95	DC	10.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.4670	80/20	4.4670
200643	26SENECA#2	4.2189	80/20	4.2189
200644	26SENECA#3	0.4154	80/20	0.4154
200649	26PENNTech	1.2799	80/20	1.2799
200665	26SHAWVL 3	8.2678	80/20	8.2678
200666	26SHAWVL 4	8.3056	80/20	8.3056
200715	26SHAWVL 1	5.2644	80/20	5.2644
200722	26SHAWVL 2	5.4223	80/20	5.4223
200887	26ARMNA MT	0.2120	80/20	0.2120
200898	26AA1-106	1.8310	80/20	1.8310
200905	26Q36	0.2140	80/20	0.2140
200913	26SHAW-D	0.2267	80/20	0.2267
200949	26X1-109	8.5231	80/20	8.5231
201201	26WRREN CT	0.9291	80/20	0.9291
201477	26Y2-055	2.7428	80/20	2.7428
203261	26BLOSSBCT	0.2446	80/20	0.2446
203349	26Z1-069 C	0.1693	80/20	0.1693
203351	26GROZ1-110	0.3158	80/20	0.3158
203352	26CANZ2-011	0.3158	80/20	0.3158
919201	AA1-144 OP	11.1182	80/20	11.1182
919491	AA2-000	88.4330	80/20	88.4330
922932	AB1-082 OP (Suspended)	1.6881	80/20	1.6881
923442	AB1-160 C	0.0484	80/20	0.0484
930511	AB1-092	3.2470	80/20	3.2470
934801	AD1-108	0.0238	80/20	0.0238
934811	AD1-109	0.0175	80/20	0.0175
936421	AD2-055	6.6850	80/20	6.6850
936991	AD2-133 C	2.2329	80/20	2.2329
939171	AE1-147 C	-3.8780	Adder	-4.56
940681	AE2-055 C (Suspended)	-3.8826	Adder	-4.57
940861	AE2-074 C	1.2818	80/20	1.2818
941191	AE2-113 C	8.1543	80/20	8.1543
941321	AE2-126 C	2.3455	80/20	2.3455
941331	AE2-129 C	2.0011	80/20	2.0011
941351	AE2-131 C	2.0011	80/20	2.0011
941421	AE2-139 C	5.1961	80/20	5.1961
942491	AE2-262 C	11.9425	80/20	11.9425
942501	AE2-263 C	11.2259	80/20	11.2259
942961	AE2-316 C	5.5124	80/20	5.5124
943751	AF1-043	20.0550	80/20	20.0550
944181	AF1-086 C O1	1.9922	80/20	1.9922

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944311	AF1-099 C	18.1287	80/20	18.1287
944321	AF1-100 C	40.3470	80/20	40.3470
944381	AF1-103 O1	1.8900	80/20	1.8900
944691	AF1-134 C O1	1.7924	80/20	1.7924
944771	AF1-142 C	29.0059	80/20	29.0059
944841	AF1-149 C	-3.8784	Adder	-4.56
944881	AF1-153 C O1	2.2289	80/20	2.2289
944901	AF1-155 C	2.2129	80/20	2.2129
945121	AF1-177	0.4725	80/20	0.4725
945161	AF1-181	0.2229	80/20	0.2229
945171	AF1-182	1.1263	80/20	1.1263
945181	AF1-183	0.2502	80/20	0.2502
945331	AF1-198	0.1866	80/20	0.1866
945551	AF1-220 C	16.3099	80/20	16.3099
946111	AF1-276 C	5.9925	80/20	5.9925
946121	AF1-277 C	5.9925	80/20	5.9925
946131	AF1-278 C	4.7761	80/20	4.7761
946381	AF1-302 C	2.4071	80/20	2.4071
946421	AF1-306 C	9.7806	80/20	9.7806
957451	AF2-039 C	1.7739	80/20	1.7739
957581	AF2-052 C	3.8510	80/20	3.8510
957681	AF2-062 C	10.3440	80/20	10.3440
957941	AF2-088 C	0.8541	80/20	0.8541
958271	AF2-121 C	2.0011	80/20	2.0011
959061	AF2-197 C O1	2.4607	80/20	2.4607
959471	AF2-238 C	0.8146	80/20	0.8146
959741	AF2-265 C	0.5838	80/20	0.5838
960041	AF2-295 C	2.2129	80/20	2.2129
960051	AF2-296 C	1.7924	80/20	1.7924
WEC	WEC	0.1458	Confirmed LTF	0.1458
LGEE	LGEE	0.2447	Confirmed LTF	0.2447
CPL	CPL	0.0430	Confirmed LTF	0.0430
CBM-W2	CBM-W2	3.1122	Confirmed LTF	3.1122
CBM-W1	CBM-W1	6.3426	Confirmed LTF	6.3426
TVA	TVA	0.4550	Confirmed LTF	0.4550
CBM-S2	CBM-S2	0.8265	Confirmed LTF	0.8265
CBM-S1	CBM-S1	2.9309	Confirmed LTF	2.9309
MEC	MEC	0.6864	Confirmed LTF	0.6864

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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
99088657	200767	26HOMER CT	PENELEC	200793	26SEWARD 2	PENELEC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	101.79	105.56	DC	30.76

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200809	26SITHE	2.1503	50/50	2.1503
200823	26MHP_X3-003	1.1959	Adder	1.41
200832	26HNSMLK 5	1.2482	50/50	1.2482
200837	26HOMER C1	37.0333	50/50	37.0333
200838	26HOMER C2	30.2493	50/50	30.2493
200839	26HOMER C3	32.0228	50/50	32.0228
200894	26K02	3.6447	Adder	4.29
200898	26AA1-106	1.6144	Adder	1.9
201477	26Y2-055	2.5540	Adder	3.0
203349	26Z1-069 C	0.3309	50/50	0.3309
203909	26Z1-038	1.1785	Adder	1.39
203910	26Z1-091	1.6199	Adder	1.91
203999	P-047 E	8.7625	Adder	10.31
294573	P-028 E	7.1757	Adder	8.44
915951	Y3-092 FTIR	75.4500	Merchant Transmission	75.4500
916202	Z1-069 E	8.1773	50/50	8.1773
917672	Z2-108 E	-1.3354	Adder	-1.57
917673	Z2-108 BAT	1.5710	Merchant Transmission	1.5710
918682	AA1-082 E	4.3601	Adder	5.13
919201	AA1-144 OP	12.2631	Adder	14.43
919491	AA2-000	24.3962	Adder	28.7
920341	AA2-132 (Suspended)	1.8273	Adder	2.15
922932	AB1-082 OP (Suspended)	2.9173	50/50	2.9173
923442	AB1-160 C	0.0945	50/50	0.0945
923443	AB1-160 E	2.3364	50/50	2.3364
930511	AB1-092	0.8958	Adder	1.05
936421	AD2-055	1.8442	Adder	2.17
938352	AE1-053 BAT	0.8728	Merchant Transmission	0.8728
938882	AE1-116 BAT	0.9130	Merchant Transmission	0.9130
938951	AE1-123	0.9654	Adder	1.14
939291	AE1-160 C	0.8635	Adder	1.02
939292	AE1-160 E	0.4963	Adder	0.58
940861	AE2-074 C	2.2151	50/50	2.2151
940862	AE2-074 E	2.9159	50/50	2.9159
941191	AE2-113 C	6.2564	Adder	7.36
941192	AE2-113 E	6.7362	Adder	7.92
941321	AE2-126 C	0.5663	Adder	0.67
941322	AE2-126 E	0.3775	Adder	0.44
941421	AE2-139 C	4.3577	Adder	5.13
941422	AE2-139 E	2.9051	Adder	3.42
942811	AE2-299 C	2.4488	Adder	2.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	9.7953	Adder	11.52
942961	AE2-316 C	2.9564	Adder	3.48
942962	AE2-316 E	4.2159	Adder	4.96
943151	AE2-344 C	5.1608	Adder	6.07
943152	AE2-344 E	3.4405	Adder	4.05
943351	AF1-006 C	0.8993	Adder	1.06
943352	AF1-006 E	0.5059	Adder	0.6
943751	AF1-043	5.5326	Adder	6.51
944261	AF1-094 C	0.8490	Adder	1.0
944262	AF1-094 E	0.5660	Adder	0.67
944281	AF1-096 C	0.8159	Adder	0.96
944282	AF1-096 E	0.5439	Adder	0.64
944301	AF1-098 C	3.6410	Adder	4.28
944302	AF1-098 E	2.4273	Adder	2.86
944381	AF1-103 O1	1.7609	Adder	2.07
944391	AF1-104 O1	1.3374	Adder	1.57
944411	AF1-106 O1	1.9885	Adder	2.34
944881	AF1-153 C O1	0.6980	Adder	0.82
944882	AF1-153 E O1	0.4653	Adder	0.55
944901	AF1-155 C	0.7001	Adder	0.82
944902	AF1-155 E	0.4668	Adder	0.55
945021	AF1-167 C	0.5239	Adder	0.62
945022	AF1-167 E	0.3499	Adder	0.41
945051	AF1-170 C	3.2683	Adder	3.85
945052	AF1-170 E	2.1789	Adder	2.56
945121	AF1-177	0.4402	Adder	0.52
945331	AF1-198	0.2611	Adder	0.31
945451	AF1-210 C	0.5905	Adder	0.69
945452	AF1-210 E	0.3937	Adder	0.46
945551	AF1-220 C	5.7533	Adder	6.77
945552	AF1-220 E	3.8376	Adder	4.51
945673	AF1-232 BAT	2.0274	Merchant Transmission	2.0274
946111	AF1-276 C	9.9193	50/50	9.9193
946112	AF1-276 E	4.8856	50/50	4.8856
946121	AF1-277 C	9.9193	50/50	9.9193
946122	AF1-277 E	4.8856	50/50	4.8856
946131	AF1-278 C	7.9059	50/50	7.9059
946132	AF1-278 E	3.9322	50/50	3.9322
946211	AF1-286 C O1	0.8053	Adder	0.95
946212	AF1-286 E O1	0.5468	Adder	0.64
946221	AF1-287 C	0.8900	Adder	1.05
946222	AF1-287 E	0.5933	Adder	0.7
946381	AF1-302 C	1.2910	Adder	1.52
946382	AF1-302 E	1.7214	Adder	2.03
946401	AF1-304 C	4.0443	Adder	4.76
946402	AF1-304 E	2.6962	Adder	3.17
946421	AF1-306 C	2.9044	Adder	3.42
946422	AF1-306 E	11.6177	Adder	13.67
946771	AF1-217 C O2	0.8900	Adder	1.05
946772	AF1-217 E O2	0.5933	Adder	0.7
957161	AF2-010 C	1.7219	Adder	3.82
957162	AF2-010 E	1.1604	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957513	AF2-045 BAT	0.9480	Merchant Transmission	0.9480
957571	AF2-051 C O1	1.4415	Adder	3.2
957572	AF2-051 E O1	0.7426	Adder	1.65
957581	AF2-052 C	5.1682	50/50	5.1682
957582	AF2-052 E	2.5142	50/50	2.5142
957681	AF2-062 C	18.4584	50/50	18.4584
957682	AF2-062 E	12.3056	50/50	12.3056
957951	AF2-089 C	0.1189	Adder	0.26
957952	AF2-089 E	0.0613	Adder	0.14
958031	AF2-097 C	0.1117	Adder	0.25
958032	AF2-097 E	0.0745	Adder	0.17
958361	AF2-130 C	0.3810	Adder	0.85
958362	AF2-130 E	0.2540	Adder	0.56
958472	AF2-141 BAT	0.9252	Merchant Transmission	0.9252
958731	AF2-164 C O1	2.9249	Adder	6.49
958732	AF2-164 E O1	1.9499	Adder	4.33
958741	AF2-165 C	0.4319	Adder	0.96
958742	AF2-165 E	0.2879	Adder	0.64
958751	AF2-166 C	0.3810	Adder	0.85
958752	AF2-166 E	0.2540	Adder	0.56
958791	AF2-170 C	0.4253	Adder	0.94
958792	AF2-170 E	0.2835	Adder	0.63
959061	AF2-197 C O1	1.7185	Adder	3.81
959062	AF2-197 E O1	2.5778	Adder	5.72
959441	AF2-235 C	0.2162	Adder	0.48
959442	AF2-235 E	0.1441	Adder	0.32
959461	AF2-237 C	0.2250	Adder	0.5
959462	AF2-237 E	0.1500	Adder	0.33
959471	AF2-238 C	0.6388	Adder	1.42
959472	AF2-238 E	0.4259	Adder	0.95
959481	AF2-239 C	0.4662	Adder	1.03
959482	AF2-239 E	0.3738	Adder	0.83
959491	AF2-240 C	0.5691	Adder	1.26
959492	AF2-240 E	0.4848	Adder	1.08
959501	AF2-241 C	0.5955	Adder	1.32
959502	AF2-241 E	0.4584	Adder	1.02
959521	AF2-243 C	0.3239	Adder	0.72
959522	AF2-243 E	0.2159	Adder	0.48
959741	AF2-265 C	0.4578	Adder	1.02
959742	AF2-265 E	0.3407	Adder	0.76
959793	AF2-270 BAT	0.0805	Merchant Transmission	0.0805
959822	AF2-273 E	0.1241	Adder	0.28
960031	AF2-294 C	0.5840	Adder	1.3
960032	AF2-294 E	0.3893	Adder	0.86
960041	AF2-295 C	0.3711	Adder	0.82
960042	AF2-295 E	0.2474	Adder	0.55
960271	AF2-318 C	0.5039	Adder	1.12
960272	AF2-318 E	0.3360	Adder	0.75
960321	AF2-323 C O1	1.1578	Adder	2.57
960322	AF2-323 E O1	0.7719	Adder	1.71
961141	AF2-405	0.5269	Adder	1.17
961151	AF2-406	3.9521	Adder	8.77

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961201	AF2-411 O1	47.5800	50/50	47.5800
961211	AF2-412 O1	18.4457	50/50	18.4457
961451	AF2-436	0.0560	Adder	0.12
WEC	WEC	0.0400	Confirmed LTF	0.0400
LGEE	LGEE	0.0377	Confirmed LTF	0.0377
CALDERWOOD	CALDERWOOD	0.0537	Confirmed LTF	0.0537
CBM-W2	CBM-W2	0.1310	Confirmed LTF	0.1310
CBM-W1	CBM-W1	2.6271	Confirmed LTF	2.6271
O-066	O-066	4.4621	Confirmed LTF	4.4621
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
G-007	G-007	0.7634	Confirmed LTF	0.7634
MEC	MEC	0.1351	Confirmed LTF	0.1351
CATAWBA	CATAWBA	0.0851	Confirmed LTF	0.0851

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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
99088830	200767	26HOMER CT	PENELEC	200795	26SHELOCTA	PENELEC	1	PN-P1-2-PN-345-107T	single	917.0	141.47	144.48	DC	27.46

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	21.8285	80/20	21.8285
200642	26SENECA#1	8.0557	80/20	8.0557
200643	26SENECA#2	7.6082	80/20	7.6082
200644	26SENECA#3	0.7491	80/20	0.7491
200794	26CONEMAGH	0.4042	80/20	0.4042
200805	26COLVER13 (Deactivation : 01/09/2020)	10.0503	Adder	11.82
200809	26SITHE	2.3929	80/20	2.3929
200828	26HNSMLK 1	2.0014	80/20	2.0014
200829	26HNSMLK 2	2.0014	80/20	2.0014
200830	26HNSMLK 3	2.0014	80/20	2.0014
200831	26HNSMLK 4	2.0014	80/20	2.0014
200832	26HNSMLK 5	2.0014	80/20	2.0014
200833	26SEWRDB34	23.2757	80/20	23.2757
200834	26SW_E13_K22	0.0691	80/20	0.0691
200837	26HOMER C1	41.2116	80/20	41.2116
200838	26HOMER C2	35.1995	80/20	35.1995
200839	26HOMER C3	37.2634	80/20	37.2634
200846	26FORWARD	0.2470	80/20	0.2470
200886	26ARWF_N39	0.6484	80/20	0.6484
200888	26HIGHLAND	0.5293	80/20	0.5293
200889	26STNY CRK	0.4118	80/20	0.4118
200898	26AA1-106	2.6350	Adder	3.1
200915	26CHSTN_FL	0.2811	80/20	0.2811
200925	26R32	0.6108	80/20	0.6108
201477	26Y2-055	5.7435	80/20	5.7435
202225	26SCI_S29B	0.1075	80/20	0.1075
203034	26NA_O38_P22	0.5674	80/20	0.5674
203349	26Z1-069 C	0.4764	80/20	0.4764
203909	26Z1-038	1.9214	Adder	2.26
203910	26Z1-091	2.4510	Adder	2.88
915951	Y3-092 FTIR	192.3300	Merchant Transmission	192.3300
919201	AA1-144 OP	19.6311	Adder	23.1
919491	AA2-000	57.4701	Adder	67.61
920341	AA2-132 (Suspended)	2.6995	Adder	3.18
922932	AB1-082 OP (Suspended)	4.3036	80/20	4.3036
923442	AB1-160 C	0.1361	80/20	0.1361
930511	AB1-092	2.1101	Adder	2.48
935191	AD1-154	2.1961	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
936421	AD2-055	4.3444	Adder	5.11
936991	AD2-133 C	2.8213	Adder	3.32
938351	AE1-053	1.5925	Adder	1.87
938881	AE1-116	1.0012	80/20	1.0012
938951	AE1-123	2.2356	Adder	2.63
938991	AE1-128 C	16.8091	80/20	16.8091
939171	AE1-147 C	1.3204	Adder	1.55
939291	AE1-160 C	1.8792	Adder	2.21
940201	AE2-001 C	1.3184	Adder	1.55
940681	AE2-055 C (Suspended)	1.2873	Adder	1.51
940861	AE2-074 C	3.2677	80/20	3.2677
941191	AE2-113 C	12.6014	80/20	12.6014
941231	AE2-117 C	1.5908	Adder	1.87
941241	AE2-118 C	1.5908	Adder	1.87
941261	AE2-120 C	1.3172	Adder	1.55
941271	AE2-121 C	0.7039	Adder	0.83
941321	AE2-126 C	1.6846	Adder	1.98
941331	AE2-129 C	1.7421	Adder	2.05
941351	AE2-131 C	1.7421	Adder	2.05
941421	AE2-139 C	7.3172	Adder	8.61
942121	AE2-224 C	15.9210	80/20	15.9210
942351	AE2-248 C	1.0402	Adder	1.22
942491	AE2-262 C	5.9296	Adder	6.98
942501	AE2-263 C	5.5738	Adder	6.56
942511	AE2-264 C	7.4709	Adder	8.79
942811	AE2-299 C	5.3143	Adder	6.25
942961	AE2-316 C	5.5600	Adder	6.54
943151	AE2-344 C	11.5182	Adder	13.55
943351	AF1-006 C	2.1004	Adder	2.47
943711	AF1-039 C O1	1.0988	Adder	1.29
943751	AF1-043	13.0332	Adder	15.33
944001	AF1-068 C O1	1.3828	Adder	1.63
944181	AF1-086 C O1	2.1801	Adder	2.56
944261	AF1-094 C	1.8988	Adder	2.23
944281	AF1-096 C	1.7756	Adder	2.09
944301	AF1-098 C	7.9340	Adder	9.33
944311	AF1-099 C	9.0011	Adder	10.59
944321	AF1-100 C	18.8317	Adder	22.15
944381	AF1-103 O1	3.3667	Adder	3.96
944391	AF1-104 O1	3.2762	Adder	3.85
944411	AF1-106 O1	2.9167	Adder	3.43
944471	AF1-112 C	1.3906	Adder	1.64
944671	AF1-132 C O1	1.2942	Adder	1.52
944691	AF1-134 C O1	1.4014	Adder	1.65
944751	AF1-140 C	2.2196	80/20	2.2196
944771	AF1-142 C	14.4018	Adder	16.94
944781	AF1-143 C	9.5549	Adder	11.24
944841	AF1-149 C	1.3171	Adder	1.55
944881	AF1-153 C O1	1.6027	Adder	1.89
944901	AF1-155 C	1.6020	Adder	1.88
945021	AF1-167 C	0.9343	Adder	1.1
945051	AF1-170 C	7.6414	Adder	8.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945121	AF1-177	0.8417	Adder	0.99
945161	AF1-181	0.1005	Adder	0.12
945171	AF1-182	0.5025	Adder	0.59
945181	AF1-183	0.1282	Adder	0.15
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.0200	Adder	1.2
945491	AF1-214 C	1.3172	Adder	1.55
945551	AF1-220 C	13.3684	Adder	15.73
945671	AF1-232 C O2	23.4676	80/20	23.4676
945751	AF1-240 C O1	1.3176	Adder	1.55
946081	AF1-273 C O1	11.5357	80/20	11.5357
946111	AF1-276 C	15.0743	80/20	15.0743
946121	AF1-277 C	15.0743	80/20	15.0743
946131	AF1-278 C	12.0145	80/20	12.0145
946211	AF1-286 C O1	1.1813	Adder	1.39
946221	AF1-287 C	1.9781	Adder	2.33
946381	AF1-302 C	2.4280	Adder	2.86
946401	AF1-304 C	8.7475	Adder	10.29
946421	AF1-306 C	6.7886	Adder	7.99
946431	AF1-307 C	8.5410	80/20	8.5410
946571	AF1-321 C O1	3.0025	80/20	3.0025
946771	AF1-217 C O2	1.9781	Adder	2.33
957001	AF2-001 C O1	3.0025	80/20	3.0025
957011	AF2-002 C O1	1.5013	80/20	1.5013
957161	AF2-010 C	3.8458	Adder	8.54
957451	AF2-039 C	0.5621	Adder	1.25
957561	AF2-050 C	7.9605	80/20	7.9605
957571	AF2-051 C O1	2.9150	Adder	6.47
957581	AF2-052 C	8.0253	80/20	8.0253
957681	AF2-062 C	27.4632	80/20	27.4632
957931	AF2-087 C	0.6212	80/20	0.6212
957941	AF2-088 C	0.2707	Adder	0.6
957951	AF2-089 C	0.2588	Adder	0.57
957981	AF2-092 C	1.6705	80/20	1.6705
958031	AF2-097 C	0.2609	Adder	0.58
958101	AF2-104 C	0.5340	80/20	0.5340
958271	AF2-121 C	0.9233	Adder	2.05
958361	AF2-130 C	0.8471	Adder	1.88
958411	AF2-135 C	0.2532	Adder	0.56
958471	AF2-141	0.6752	Adder	1.5
958731	AF2-164 C O1	10.4098	80/20	10.4098
958741	AF2-165 C	0.9170	Adder	2.04
958751	AF2-166 C	0.8471	Adder	1.88
958791	AF2-170 C	1.0418	Adder	2.31
959061	AF2-197 C O1	2.6610	Adder	5.91
959301	AF2-221 C	1.5451	80/20	1.5451
959401	AF2-231 C	0.2108	Adder	0.47
959441	AF2-235 C	0.4705	Adder	1.04
959461	AF2-237 C	0.5032	Adder	1.12
959471	AF2-238 C	0.9410	Adder	2.09
959481	AF2-239 C	0.7234	Adder	1.61
959491	AF2-240 C	0.8348	Adder	1.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959501	AF2-241 C	0.8734	Adder	1.94
959521	AF2-243 C	0.6877	Adder	1.53
959741	AF2-265 C	0.6744	Adder	1.5
960031	AF2-294 C	0.8627	Adder	1.91
960041	AF2-295 C	0.8491	Adder	1.88
960051	AF2-296 C	0.7427	Adder	1.65
960211	AF2-312 C	0.8059	Adder	1.79
960271	AF2-318 C	0.7821	Adder	1.74
960321	AF2-323 C O1	2.3330	Adder	5.18
960391	AF2-330 C	10.7793	80/20	10.7793
960451	AF2-336 C O1	2.7841	80/20	2.7841
960461	AF2-337 C O1	2.7841	80/20	2.7841
960471	AF2-338 C O1	2.7841	80/20	2.7841
960481	AF2-339 C O1	2.7841	80/20	2.7841
960901	AF2-381 C	19.8673	80/20	19.8673
961141	AF2-405	0.7729	Adder	1.72
961151	AF2-406	5.7969	Adder	12.87
961201	AF2-411 O1	63.9870	80/20	63.9870
961211	AF2-412 O1	11.5924	Adder	25.73
961451	AF2-436	0.0885	Adder	0.2
NEWTON	NEWTON	1.5150	Confirmed LTF	1.5150
FARMERCITY	FARMERCITY	0.0783	Confirmed LTF	0.0783
G-007A	G-007A	2.6205	Confirmed LTF	2.6205
VFT	VFT	7.5078	Confirmed LTF	7.5078
CALDERWOOD	CALDERWOOD	0.6565	Confirmed LTF	0.6565
PRAIRIE	PRAIRIE	3.6033	Confirmed LTF	3.6033
CHEOAH	CHEOAH	0.6597	Confirmed LTF	0.6597
EDWARDS	EDWARDS	0.4963	Confirmed LTF	0.4963
TILTON	TILTON	0.8946	Confirmed LTF	0.8946
MADISON	MADISON	0.0706	Confirmed LTF	0.0706
GIBSON	GIBSON	0.7731	Confirmed LTF	0.7731
BLUEG	BLUEG	2.4651	Confirmed LTF	2.4651
TRIMBLE	TRIMBLE	0.7908	Confirmed LTF	0.7908
CATAWBA	CATAWBA	0.4323	Confirmed LTF	0.4323

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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
99088498	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	133.8	140.66	DC	56.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O1	2.6844	Adder	5.96
957572	AF2-051 E O1	1.3829	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O1	5.4038	Adder	12.0
958732	AF2-164 E O1	3.6026	Adder	8.0
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O1	3.2132	Adder	7.13
959062	AF2-197 E O1	4.8199	Adder	10.7
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1565	Adder	4.79
960322	AF2-323 E O1	1.4376	Adder	3.19
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O1	87.8850	50/50	87.8850
961211	AF2-412 O1	34.1484	50/50	34.1484
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

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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
99088428	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	153.11	160.14	DC	57.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O1	2.6870	Adder	5.96
957572	AF2-051 E O1	1.3842	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O1	5.4157	Adder	12.02
958732	AF2-164 E O1	3.6105	Adder	8.01
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O1	3.2158	Adder	7.14
959062	AF2-197 E O1	4.8237	Adder	10.71
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1585	Adder	4.79
960322	AF2-323 E O1	1.4390	Adder	3.19
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O1	88.1220	50/50	88.1220
961211	AF2-412 O1	34.2290	50/50	34.2290
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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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
99088628	200793	26SEWARD 2	PENELEC	200912	26CONEMAGH	PENELEC	1	PN-P2_3-PN-230-0252-B	breaker	1147.0	110.62	112.0	DC	36.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	31.2262	50/50	31.2262
200794	26CONEMAGH	0.6545	50/50	0.6545
200805	26COLVER13 (Deactivation : 01/09/2020)	23.2600	Adder	27.36
200809	26SITHE	2.0167	50/50	2.0167
200833	26SEWRDB34	37.4753	50/50	37.4753
200834	26SW_E13_K22	0.0875	50/50	0.0875
200837	26HOMER C1	34.7328	50/50	34.7328
200838	26HOMER C2	29.3172	50/50	29.3172
200839	26HOMER C3	31.0362	50/50	31.0362
200846	26FORWARD	0.3117	50/50	0.3117
200864	K-013 E	7.2275	50/50	7.2275
200883	Q-053 E	14.0093	50/50	14.0093
200886	26ARWF_N39	0.8478	50/50	0.8478
200888	26HIGHLAND	0.7206	50/50	0.7206
200889	26STNY CRK	0.5285	50/50	0.5285
200894	26K02	5.7263	Adder	6.74
200898	26AA1-106	2.1159	Adder	2.49
200915	26CHSTN_FL	0.3826	50/50	0.3826
200925	26R32	0.8314	50/50	0.8314
200945	26CT_V3-030	0.2531	50/50	0.2531
201477	26Y2-055	3.4623	Adder	4.07
202225	26SCI_S29B	0.1361	50/50	0.1361
203034	26NA_O38_P22	0.7418	50/50	0.7418
203910	26Z1-091	1.8412	Adder	2.17
203999	P-047 E	9.8717	Adder	11.61
235003	AC1-025 E	0.1587	Adder	0.19
236828	01GRAYMONT	0.4288	Adder	0.5
290086	Q-036 E	7.8836	Adder	9.27
292350	K-023	6.6881	Adder	7.87
292542	L-013 1	6.5052	Adder	7.65
293301	N-039 E	19.6595	50/50	19.6595
293393	V3-030E	7.7347	50/50	7.7347
293432	R-040 E	0.3659	Adder	0.43
293603	O-018 E	16.7097	50/50	16.7097
293902	O-048 E	5.8546	Adder	6.89
294515	O38_P22	17.2021	50/50	17.2021
294903	P-060 E	12.2552	50/50	12.2552

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
296332	R-032 E	19.2804	50/50	19.2804
913142	Y1-033 E OP1	5.3852	Adder	6.34
916202	Z1-069 E	8.0004	Adder	9.41
917672	Z2-108 E	3.6591	Adder	4.3
919201	AA1-144 OP	15.1504	Adder	17.82
919491	AA2-000	51.6967	Adder	60.82
920341	AA2-132 (Suspended)	2.0572	Adder	2.42
922932	AB1-082 OP (Suspended)	2.9413	Adder	3.46
923443	AB1-160 E	2.2858	Adder	2.69
930511	AB1-092	1.8982	Adder	2.23
935191	AD1-154	3.2936	Adder	3.87
936421	AD2-055	3.9080	Adder	4.6
936991	AD2-133 C	3.5476	Adder	4.17
936992	AD2-133 E	16.2264	Adder	19.09
938351	AE1-053	2.0329	Adder	2.39
938881	AE1-116	1.2677	50/50	1.2677
938951	AE1-123	2.3069	Adder	2.71
938991	AE1-128 C	21.9226	50/50	21.9226
938992	AE1-128 E	14.6150	50/50	14.6150
939171	AE1-147 C	1.2893	Adder	1.52
939172	AE1-147 E	0.8595	Adder	1.01
939291	AE1-160 C	1.4262	Adder	1.68
939292	AE1-160 E	0.8198	Adder	0.96
940201	AE2-001 C	1.2877	Adder	1.51
940202	AE2-001 E	0.8585	Adder	1.01
940681	AE2-055 C (Suspended)	1.2646	Adder	1.49
940682	AE2-055 E (Suspended)	0.8431	Adder	0.99
940861	AE2-074 C	2.2334	Adder	2.63
940862	AE2-074 E	2.9399	Adder	3.46
941191	AE2-113 C	9.0111	Adder	10.6
941192	AE2-113 E	9.7021	Adder	11.41
941231	AE2-117 C	1.9331	Adder	2.27
941232	AE2-117 E	1.2887	Adder	1.52
941241	AE2-118 C	1.9331	Adder	2.27
941242	AE2-118 E	1.2887	Adder	1.52
941261	AE2-120 C	1.2869	Adder	1.51
941262	AE2-120 E	0.8580	Adder	1.01
941271	AE2-121 C	0.6868	Adder	0.81
941272	AE2-121 E	0.4586	Adder	0.54
941321	AE2-126 C	1.6708	Adder	1.97
941322	AE2-126 E	1.1138	Adder	1.31
941331	AE2-129 C	2.0887	Adder	2.46
941332	AE2-129 E	1.3924	Adder	1.64
941351	AE2-131 C	2.0887	Adder	2.46
941352	AE2-131 E	1.3924	Adder	1.64
941421	AE2-139 C	5.7887	Adder	6.81
941422	AE2-139 E	3.8592	Adder	4.54
942121	AE2-224 C	21.1128	50/50	21.1128
942122	AE2-224 E	14.0752	50/50	14.0752
942351	AE2-248 C	1.0194	Adder	1.2
942352	AE2-248 E	0.6796	Adder	0.8
942491	AE2-262 C	5.6912	Adder	6.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942492	AE2-262 E	3.8245	Adder	4.5
942501	AE2-263 C	5.3497	Adder	6.29
942502	AE2-263 E	3.5718	Adder	4.2
942511	AE2-264 C	9.4052	Adder	11.06
942512	AE2-264 E	6.2701	Adder	7.38
942811	AE2-299 C	3.0513	Adder	3.59
942812	AE2-299 E	12.2052	Adder	14.36
942961	AE2-316 C	5.0155	Adder	5.9
942962	AE2-316 E	7.1522	Adder	8.41
943151	AE2-344 C	6.5475	Adder	7.7
943152	AE2-344 E	4.3650	Adder	5.14
943711	AF1-039 C O1	1.4247	Adder	1.68
943712	AF1-039 E O1	0.9498	Adder	1.12
943751	AF1-043	11.7239	Adder	13.79
944001	AF1-068 C O1	1.3561	Adder	1.6
944002	AF1-068 E O1	0.7628	Adder	0.9
944181	AF1-086 C O1	4.0187	Adder	4.73
944182	AF1-086 E O1	17.4836	Adder	20.57
944261	AF1-094 C	1.1977	Adder	1.41
944262	AF1-094 E	0.7985	Adder	0.94
944281	AF1-096 C	1.3476	Adder	1.59
944282	AF1-096 E	0.8984	Adder	1.06
944301	AF1-098 C	4.7042	Adder	5.53
944302	AF1-098 E	3.1362	Adder	3.69
944311	AF1-099 C	8.6392	Adder	10.16
944312	AF1-099 E	5.7595	Adder	6.78
944321	AF1-100 C	18.3065	Adder	21.54
944322	AF1-100 E	12.2043	Adder	14.36
944381	AF1-103 O1	2.3868	Adder	2.81
944411	AF1-106 O1	2.2629	Adder	2.66
944471	AF1-112 C	1.3618	Adder	1.6
944472	AF1-112 E	0.7660	Adder	0.9
944671	AF1-132 C O1	1.2697	Adder	1.49
944672	AF1-132 E O1	0.8465	Adder	1.0
944691	AF1-134 C O1	2.0909	Adder	2.46
944692	AF1-134 E O1	1.3939	Adder	1.64
944751	AF1-140 C	3.0046	50/50	3.0046
944752	AF1-140 E	2.0031	50/50	2.0031
944771	AF1-142 C	13.8227	Adder	16.26
944772	AF1-142 E	9.2152	Adder	10.84
944781	AF1-143 C	12.1972	Adder	14.35
944782	AF1-143 E	6.5052	Adder	7.65
944841	AF1-149 C	1.2868	Adder	1.51
944842	AF1-149 E	0.8579	Adder	1.01
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4695	Adder	1.73
944902	AF1-155 E	0.9797	Adder	1.15
945021	AF1-167 C	0.9039	Adder	1.06
945022	AF1-167 E	0.6037	Adder	0.71
945121	AF1-177	0.5967	Adder	0.7
945161	AF1-181	0.0985	Adder	0.12

Bus #	Bus	Gendoliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.4925	Adder	0.58
945181	AF1-183	0.1340	Adder	0.16
945331	AF1-198	0.3071	Adder	0.36
945451	AF1-210 C	0.9958	Adder	1.17
945452	AF1-210 E	0.6639	Adder	0.78
945491	AF1-214 C	1.2869	Adder	1.51
945492	AF1-214 E	0.8580	Adder	1.01
945551	AF1-220 C	12.2600	Adder	14.42
945552	AF1-220 E	8.1778	Adder	9.62
945671	AF1-232 C O2	29.9790	50/50	29.9790
945672	AF1-232 E O2	16.1426	50/50	16.1426
945751	AF1-240 C O1	1.9761	Adder	2.32
945752	AF1-240 E O1	1.3174	Adder	1.55
946071	AF1-272 C O1	12.9445	Adder	15.23
946072	AF1-272 E O1	8.6297	Adder	10.15
946081	AF1-273 C O1	14.7579	50/50	14.7579
946082	AF1-273 E O1	9.8386	50/50	9.8386
946111	AF1-276 C	10.1126	Adder	11.9
946112	AF1-276 E	4.9808	Adder	5.86
946121	AF1-277 C	10.1126	Adder	11.9
946122	AF1-277 E	4.9808	Adder	5.86
946131	AF1-278 C	8.0599	Adder	9.48
946132	AF1-278 E	4.0088	Adder	4.72
946211	AF1-286 C O1	0.9165	Adder	1.08
946212	AF1-286 E O1	0.6223	Adder	0.73
946221	AF1-287 C	1.1296	Adder	1.33
946222	AF1-287 E	0.7531	Adder	0.89
946381	AF1-302 C	2.1902	Adder	2.58
946382	AF1-302 E	2.9203	Adder	3.44
946401	AF1-304 C	6.8962	Adder	8.11
946402	AF1-304 E	4.5975	Adder	5.41
946421	AF1-306 C	6.1273	Adder	7.21
946422	AF1-306 E	24.5094	Adder	28.83
946431	AF1-307 C	13.6494	50/50	13.6494
946432	AF1-307 E	9.0996	50/50	9.0996
946571	AF1-321 C O1	3.7594	50/50	3.7594
946572	AF1-321 E O1	2.5062	50/50	2.5062
946771	AF1-217 C O2	1.1296	Adder	1.33
946772	AF1-217 E O2	0.7531	Adder	0.89
957001	AF2-001 C O1	3.7594	50/50	3.7594
957002	AF2-001 E O1	2.5062	50/50	2.5062
957011	AF2-002 C O1	1.8797	50/50	1.8797
957012	AF2-002 E O1	1.2531	50/50	1.2531
957161	AF2-010 C	2.4478	Adder	5.43
957162	AF2-010 E	1.6496	Adder	3.66
957451	AF2-039 C	0.6259	Adder	1.39
957452	AF2-039 E	0.4173	Adder	0.93
957512	AF2-045 E	5.8171	50/50	5.8171
957561	AF2-050 C	10.5564	50/50	10.5564
957562	AF2-050 E	7.0376	50/50	7.0376
957571	AF2-051 C O1	1.8332	Adder	4.07
957572	AF2-051 E O1	0.9444	Adder	2.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	2.9522	Adder	6.55
957582	AF2-052 E	1.4362	Adder	3.19
957681	AF2-062 C	9.8097	Adder	21.78
957682	AF2-062 E	6.5398	Adder	14.52
957931	AF2-087 C	0.8194	50/50	0.8194
957932	AF2-087 E	1.1283	50/50	1.1283
957941	AF2-088 C	0.3014	Adder	0.67
957942	AF2-088 E	0.2009	Adder	0.45
957951	AF2-089 C	0.1964	Adder	0.44
957952	AF2-089 E	0.1012	Adder	0.22
957981	AF2-092 C	2.1966	50/50	2.1966
957982	AF2-092 E	1.4644	50/50	1.4644
958101	AF2-104 C	0.6761	50/50	0.6761
958102	AF2-104 E	0.4507	50/50	0.4507
958271	AF2-121 C	1.1070	Adder	2.46
958272	AF2-121 E	0.7380	Adder	1.64
958361	AF2-130 C	0.7857	Adder	1.74
958362	AF2-130 E	0.5238	Adder	1.16
958411	AF2-135 C	0.3232	Adder	0.72
958412	AF2-135 E	0.2155	Adder	0.48
958471	AF2-141	0.8619	Adder	1.91
958731	AF2-164 C O1	3.3089	Adder	7.34
958732	AF2-164 E O1	2.2059	Adder	4.9
958741	AF2-165 C	0.7534	Adder	1.67
958742	AF2-165 E	0.5023	Adder	1.11
958751	AF2-166 C	0.7857	Adder	1.74
958752	AF2-166 E	0.5238	Adder	1.16
959061	AF2-197 C O1	2.0415	Adder	4.53
959062	AF2-197 E O1	3.0622	Adder	6.8
959301	AF2-221 C	2.0266	50/50	2.0266
959302	AF2-221 E	2.7987	50/50	2.7987
959401	AF2-231 C	0.2561	Adder	0.57
959402	AF2-231 E	0.1708	Adder	0.38
959441	AF2-235 C	0.3571	Adder	0.79
959442	AF2-235 E	0.2381	Adder	0.53
959461	AF2-237 C	0.3174	Adder	0.7
959462	AF2-237 E	0.2116	Adder	0.47
959471	AF2-238 C	0.7426	Adder	1.65
959472	AF2-238 E	0.4950	Adder	1.1
959481	AF2-239 C	0.5535	Adder	1.23
959482	AF2-239 E	0.4438	Adder	0.99
959491	AF2-240 C	0.6476	Adder	1.44
959492	AF2-240 E	0.5517	Adder	1.22
959501	AF2-241 C	0.6776	Adder	1.5
959502	AF2-241 E	0.5217	Adder	1.16
959521	AF2-243 C	0.5651	Adder	1.25
959522	AF2-243 E	0.3767	Adder	0.84
959741	AF2-265 C	0.5322	Adder	1.18
959742	AF2-265 E	0.3960	Adder	0.88
959792	AF2-270 E	1.1330	50/50	1.1330
959802	AF2-271 E	0.3327	Adder	0.74
959822	AF2-273 E	0.2111	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0664	Adder	0.15
960031	AF2-294 C	0.6575	Adder	1.46
960032	AF2-294 E	0.4383	Adder	0.97
960041	AF2-295 C	0.7788	Adder	1.73
960042	AF2-295 E	0.5192	Adder	1.15
960051	AF2-296 C	1.1082	Adder	2.46
960052	AF2-296 E	0.7388	Adder	1.64
960211	AF2-312 C	2.9816	50/50	2.9816
960212	AF2-312 E	1.9877	50/50	1.9877
960271	AF2-318 C	0.5983	Adder	1.33
960272	AF2-318 E	0.3989	Adder	0.89
960321	AF2-323 C O1	1.4727	Adder	3.27
960322	AF2-323 E O1	0.9818	Adder	2.18
960391	AF2-330 C	14.8326	50/50	14.8326
960392	AF2-330 E	6.4873	50/50	6.4873
960451	AF2-336 C O1	3.6611	50/50	3.6611
960452	AF2-336 E O1	2.4407	50/50	2.4407
960461	AF2-337 C O1	3.6611	50/50	3.6611
960462	AF2-337 E O1	2.4407	50/50	2.4407
960471	AF2-338 C O1	3.6611	50/50	3.6611
960472	AF2-338 E O1	2.4407	50/50	2.4407
960481	AF2-339 C O1	3.6611	50/50	3.6611
960482	AF2-339 E O1	2.4407	50/50	2.4407
960901	AF2-381 C	25.3292	50/50	25.3292
960902	AF2-381 E	13.3295	50/50	13.3295
961141	AF2-405	0.5997	Adder	1.33
961151	AF2-406	4.4975	Adder	9.98
961201	AF2-411 O1	22.9633	Adder	50.97
961211	AF2-412 O1	9.1953	Adder	20.41
WEC	WEC	0.0652	Confirmed LTF	0.0652
LGEE	LGEE	0.0764	Confirmed LTF	0.0764
CALDERWOOD	CALDERWOOD	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.5569	Confirmed LTF	0.5569
CBM-W1	CBM-W1	3.8281	Confirmed LTF	3.8281
O-066	O-066	8.3866	Confirmed LTF	8.3866
CHEOAH	CHEOAH	0.0485	Confirmed LTF	0.0485
CBM-S1	CBM-S1	0.0596	Confirmed LTF	0.0596
G-007	G-007	1.3936	Confirmed LTF	1.3936
MEC	MEC	0.2447	Confirmed LTF	0.2447
CATAWBA	CATAWBA	0.0952	Confirmed LTF	0.0952

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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
99088398	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	184.24	186.53	DC	45.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.7309	50/50	0.7309
200794	26CONEMAGH	0.4993	50/50	0.4993
200805	26COLVER13 (Deactivation : 01/09/2020)	29.3843	50/50	29.3843
200809	26SITHE	2.2832	50/50	2.2832
200833	26SEWRDB34	24.0546	50/50	24.0546
200837	26HOMER C1	39.3219	50/50	39.3219
200838	26HOMER C2	34.1161	50/50	34.1161
200839	26HOMER C3	36.1164	50/50	36.1164
200846	26FORWARD	0.2706	50/50	0.2706
200864	K-013 E	6.2749	50/50	6.2749
200883	Q-053 E	9.9862	Adder	11.75
200888	26HIGHLAND	0.5912	50/50	0.5912
200894	26K02	7.1452	Adder	8.41
200898	26AA1-106	2.6743	Adder	3.15
200925	26R32	0.6821	50/50	0.6821
201477	26Y2-055	4.9421	Adder	5.81
202158	26CON.GEN1	0.1250	50/50	0.1250
203910	26Z1-091	2.4312	Adder	2.86
203999	P-047 E	12.4397	Adder	14.63
235003	AC1-025 E	0.1777	Adder	0.21
236828	01GRAYMONT	0.4827	Adder	0.57
290086	Q-036 E	7.3243	Adder	8.62
292350	K-023	5.7633	Adder	6.78
292542	L-013 1	5.6056	Adder	6.59
293301	N-039 E	13.1545	Adder	15.48
293393	V3-030E	6.1438	Adder	7.23
293432	R-040 E	0.3153	Adder	0.37
293603	O-018 E	13.7093	50/50	13.7093
293902	O-048 E	5.0451	Adder	5.94
294515	O38_P22	11.5102	Adder	13.54
294903	P-060 E	8.9489	Adder	10.53
296332	R-032 E	15.8184	50/50	15.8184
913142	Y1-033 E OP1	4.5943	Adder	5.41
915951	Y3-092 FTIR	216.0000	Merchant Transmission	216.0000
916202	Z1-069 E	9.9846	Adder	11.75
917672	Z2-108 E	3.1532	Adder	3.71
918682	AA1-082 E	6.9319	Adder	8.16
919201	AA1-144 OP	19.7240	Adder	23.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
919491	AA2-000	61.9605	Adder	72.89
920341	AA2-132 (Suspended)	2.6754	Adder	3.15
922932	AB1-082 OP (Suspended)	3.6694	Adder	4.32
923443	AB1-160 E	2.8527	Adder	3.36
930511	AB1-092	2.2750	Adder	2.68
935191	AD1-154	3.8233	Adder	4.5
936421	AD2-055	4.6838	Adder	5.51
936991	AD2-133 C	3.2959	Adder	3.88
936992	AD2-133 E	15.0752	Adder	17.74
938351	AE1-053	1.7518	Adder	2.06
938881	AE1-116	0.9335	Adder	1.1
938951	AE1-123	2.9365	Adder	3.45
938991	AE1-128 C	15.8502	Adder	18.65
938992	AE1-128 E	10.5668	Adder	12.43
939171	AE1-147 C	1.4523	Adder	1.71
939172	AE1-147 E	0.9682	Adder	1.14
939291	AE1-160 C	2.1456	Adder	2.52
939292	AE1-160 E	1.2333	Adder	1.45
940201	AE2-001 C	1.4499	Adder	1.71
940202	AE2-001 E	0.9666	Adder	1.14
940681	AE2-055 C (Suspended)	1.4141	Adder	1.66
940682	AE2-055 E (Suspended)	0.9428	Adder	1.11
940861	AE2-074 C	2.7861	Adder	3.28
940862	AE2-074 E	3.6675	Adder	4.31
941191	AE2-113 C	11.1012	Adder	13.06
941192	AE2-113 E	11.9524	Adder	14.06
941231	AE2-117 C	1.6666	Adder	1.96
941232	AE2-117 E	1.1111	Adder	1.31
941241	AE2-118 C	1.6666	Adder	1.96
941242	AE2-118 E	1.1111	Adder	1.31
941261	AE2-120 C	1.4486	Adder	1.7
941262	AE2-120 E	0.9657	Adder	1.14
941271	AE2-121 C	0.7743	Adder	0.91
941272	AE2-121 E	0.5170	Adder	0.61
941321	AE2-126 C	1.9222	Adder	2.26
941322	AE2-126 E	1.2815	Adder	1.51
941331	AE2-129 C	2.0674	Adder	2.43
941332	AE2-129 E	1.3783	Adder	1.62
941351	AE2-131 C	2.0674	Adder	2.43
941352	AE2-131 E	1.3783	Adder	1.62
941421	AE2-139 C	7.4309	Adder	8.74
941422	AE2-139 E	4.9540	Adder	5.83
942121	AE2-224 C	16.2642	50/50	16.2642
942122	AE2-224 E	10.8428	50/50	10.8428
942351	AE2-248 C	1.1433	Adder	1.35
942352	AE2-248 E	0.7622	Adder	0.9
942491	AE2-262 C	6.5458	Adder	7.7
942492	AE2-262 E	4.3988	Adder	5.18
942501	AE2-263 C	6.1531	Adder	7.24
942502	AE2-263 E	4.1082	Adder	4.83
942511	AE2-264 C	7.8026	Adder	9.18
942512	AE2-264 E	5.2017	Adder	6.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	5.2363	Adder	6.16
942812	AE2-299 E	20.9451	Adder	24.64
942961	AE2-316 C	6.1301	Adder	7.21
942962	AE2-316 E	8.7415	Adder	10.28
943151	AE2-344 C	12.0975	Adder	14.23
943152	AE2-344 E	8.0650	Adder	9.49
943351	AF1-006 C	2.1870	Adder	2.57
943352	AF1-006 E	1.2302	Adder	1.45
943711	AF1-039 C O1	1.2154	Adder	1.43
943712	AF1-039 E O1	0.8103	Adder	0.95
943751	AF1-043	14.0515	Adder	16.53
944001	AF1-068 C O1	1.5196	Adder	1.79
944002	AF1-068 E O1	0.8548	Adder	1.01
944181	AF1-086 C O1	4.2701	Adder	5.02
944182	AF1-086 E O1	18.5773	Adder	21.86
944261	AF1-094 C	1.9969	Adder	2.35
944262	AF1-094 E	1.3312	Adder	1.57
944281	AF1-096 C	2.0274	Adder	2.39
944282	AF1-096 E	1.3516	Adder	1.59
944301	AF1-098 C	7.9568	Adder	9.36
944302	AF1-098 E	5.3045	Adder	6.24
944311	AF1-099 C	9.9366	Adder	11.69
944312	AF1-099 E	6.6244	Adder	7.79
944321	AF1-100 C	21.1140	Adder	24.84
944322	AF1-100 E	14.0760	Adder	16.56
944381	AF1-103 O1	3.4080	Adder	4.01
944391	AF1-104 O1	3.5894	Adder	4.22
944411	AF1-106 O1	2.8975	Adder	3.41
944471	AF1-112 C	1.5285	Adder	1.8
944472	AF1-112 E	0.8598	Adder	1.01
944671	AF1-132 C O1	1.4221	Adder	1.67
944672	AF1-132 E O1	0.9481	Adder	1.12
944691	AF1-134 C O1	2.2431	Adder	2.64
944692	AF1-134 E O1	1.4954	Adder	1.76
944751	AF1-140 C	2.1234	Adder	2.5
944752	AF1-140 E	1.4156	Adder	1.67
944771	AF1-142 C	15.8986	Adder	18.7
944772	AF1-142 E	10.5990	Adder	12.47
944781	AF1-143 C	10.5106	Adder	12.37
944782	AF1-143 E	5.6056	Adder	6.59
944841	AF1-149 C	1.4485	Adder	1.7
944842	AF1-149 E	0.9657	Adder	1.14
944881	AF1-153 C O1	1.7741	Adder	2.09
944882	AF1-153 E O1	1.1827	Adder	1.39
944901	AF1-155 C	1.7742	Adder	2.09
944902	AF1-155 E	1.1828	Adder	1.39
945021	AF1-167 C	1.1249	Adder	1.32
945022	AF1-167 E	0.7513	Adder	0.88
945051	AF1-170 C	8.2473	Adder	9.7
945052	AF1-170 E	5.4982	Adder	6.47
945121	AF1-177	0.8520	Adder	1.0
945161	AF1-181	0.1132	Adder	0.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.5659	Adder	0.67
945181	AF1-183	0.1499	Adder	0.18
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.2304	Adder	1.45
945452	AF1-210 E	0.8203	Adder	0.97
945491	AF1-214 C	1.4487	Adder	1.7
945492	AF1-214 E	0.9658	Adder	1.14
945551	AF1-220 C	14.6462	Adder	17.23
945552	AF1-220 E	9.7695	Adder	11.49
945671	AF1-232 C O2	21.9541	Adder	25.83
945672	AF1-232 E O2	11.8215	Adder	13.91
945751	AF1-240 C O1	2.2940	Adder	2.7
945752	AF1-240 E O1	1.5293	Adder	1.8
946071	AF1-272 C O1	22.7773	50/50	22.7773
946072	AF1-272 E O1	15.1848	50/50	15.1848
946081	AF1-273 C O1	10.7976	Adder	12.7
946082	AF1-273 E O1	7.1984	Adder	8.47
946111	AF1-276 C	12.8576	Adder	15.13
946112	AF1-276 E	6.3328	Adder	7.45
946121	AF1-277 C	12.8576	Adder	15.13
946122	AF1-277 E	6.3328	Adder	7.45
946131	AF1-278 C	10.2477	Adder	12.06
946132	AF1-278 E	5.0970	Adder	6.0
946211	AF1-286 C O1	1.1735	Adder	1.38
946212	AF1-286 E O1	0.7968	Adder	0.94
946221	AF1-287 C	2.0775	Adder	2.44
946222	AF1-287 E	1.3850	Adder	1.63
946381	AF1-302 C	2.6769	Adder	3.15
946382	AF1-302 E	3.5692	Adder	4.2
946401	AF1-304 C	10.1689	Adder	11.96
946402	AF1-304 E	6.7793	Adder	7.98
946421	AF1-306 C	7.4059	Adder	8.71
946422	AF1-306 E	29.6235	Adder	34.85
946431	AF1-307 C	10.4821	50/50	10.4821
946432	AF1-307 E	6.9881	50/50	6.9881
946571	AF1-321 C O1	3.2800	50/50	3.2800
946572	AF1-321 E O1	2.1866	50/50	2.1866
946771	AF1-217 C O2	2.0775	Adder	2.44
946772	AF1-217 E O2	1.3850	Adder	1.63
957001	AF2-001 C O1	3.2800	50/50	3.2800
957002	AF2-001 E O1	2.1866	50/50	2.1866
957011	AF2-002 C O1	1.6400	50/50	1.6400
957012	AF2-002 E O1	1.0933	50/50	1.0933
957161	AF2-010 C	4.0601	Adder	9.01
957162	AF2-010 E	2.7361	Adder	6.07
957451	AF2-039 C	0.6828	Adder	1.52
957452	AF2-039 E	0.4552	Adder	1.01
957512	AF2-045 E	2.1054	Adder	4.67
957561	AF2-050 C	8.1321	50/50	8.1321
957562	AF2-050 E	5.4214	50/50	5.4214
957571	AF2-051 C O1	3.1689	Adder	7.03
957572	AF2-051 E O1	1.6325	Adder	3.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	3.6694	Adder	8.15
957582	AF2-052 E	1.7851	Adder	3.96
957681	AF2-062 C	12.3878	Adder	27.5
957682	AF2-062 E	8.2586	Adder	18.33
957931	AF2-087 C	0.3080	Adder	0.68
957932	AF2-087 E	0.4241	Adder	0.94
957941	AF2-088 C	0.3288	Adder	0.73
957942	AF2-088 E	0.2192	Adder	0.49
957951	AF2-089 C	0.2955	Adder	0.66
957952	AF2-089 E	0.1522	Adder	0.34
957981	AF2-092 C	0.8375	Adder	1.86
957982	AF2-092 E	0.5583	Adder	1.24
958031	AF2-097 C	0.2717	Adder	0.6
958032	AF2-097 E	0.1811	Adder	0.4
958101	AF2-104 C	0.2639	Adder	0.59
958102	AF2-104 E	0.1759	Adder	0.39
958271	AF2-121 C	1.0957	Adder	2.43
958272	AF2-121 E	0.7305	Adder	1.62
958361	AF2-130 C	1.0593	Adder	2.35
958362	AF2-130 E	0.7062	Adder	1.57
958411	AF2-135 C	0.2785	Adder	0.62
958412	AF2-135 E	0.1857	Adder	0.41
958471	AF2-141	0.7427	Adder	1.65
958731	AF2-164 C O1	4.9949	Adder	11.09
958732	AF2-164 E O1	3.3300	Adder	7.39
958741	AF2-165 C	1.0893	Adder	2.42
958742	AF2-165 E	0.7262	Adder	1.61
958751	AF2-166 C	1.0593	Adder	2.35
958752	AF2-166 E	0.7062	Adder	1.57
958791	AF2-170 C	1.1414	Adder	2.53
958792	AF2-170 E	0.7609	Adder	1.69
959061	AF2-197 C O1	2.6587	Adder	5.9
959062	AF2-197 E O1	3.9880	Adder	8.85
959301	AF2-221 C	1.7042	50/50	1.7042
959302	AF2-221 E	2.3534	50/50	2.3534
959401	AF2-231 C	0.2208	Adder	0.49
959402	AF2-231 E	0.1472	Adder	0.33
959441	AF2-235 C	0.5372	Adder	1.19
959442	AF2-235 E	0.3582	Adder	0.8
959461	AF2-237 C	0.5292	Adder	1.17
959462	AF2-237 E	0.3528	Adder	0.78
959471	AF2-238 C	0.9386	Adder	2.08
959472	AF2-238 E	0.6257	Adder	1.39
959481	AF2-239 C	0.7226	Adder	1.6
959482	AF2-239 E	0.5794	Adder	1.29
959491	AF2-240 C	0.8293	Adder	1.84
959492	AF2-240 E	0.7064	Adder	1.57
959501	AF2-241 C	0.8677	Adder	1.93
959502	AF2-241 E	0.6680	Adder	1.48
959521	AF2-243 C	0.8169	Adder	1.81
959522	AF2-243 E	0.5446	Adder	1.21
959741	AF2-265 C	0.6727	Adder	1.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959742	AF2-265 E	0.5006	Adder	1.11
959792	AF2-270 E	0.4341	Adder	0.96
959802	AF2-271 E	0.3002	Adder	0.67
959822	AF2-273 E	0.2616	Adder	0.58
960022	AF2-293 E	0.0748	Adder	0.17
960031	AF2-294 C	0.8551	Adder	1.9
960032	AF2-294 E	0.5700	Adder	1.27
960041	AF2-295 C	0.9403	Adder	2.09
960042	AF2-295 E	0.6269	Adder	1.39
960051	AF2-296 C	1.1888	Adder	2.64
960052	AF2-296 E	0.7926	Adder	1.76
960211	AF2-312 C	1.2463	Adder	2.77
960212	AF2-312 E	0.8308	Adder	1.84
960271	AF2-318 C	0.7812	Adder	1.73
960272	AF2-318 E	0.5208	Adder	1.16
960321	AF2-323 C O1	2.5387	Adder	5.64
960322	AF2-323 E O1	1.6925	Adder	3.76
960391	AF2-330 C	5.5322	Adder	12.28
960392	AF2-330 E	2.4196	Adder	5.37
960451	AF2-336 C O1	1.3958	Adder	3.1
960452	AF2-336 E O1	0.9306	Adder	2.07
960461	AF2-337 C O1	1.3958	Adder	3.1
960462	AF2-337 E O1	0.9306	Adder	2.07
960471	AF2-338 C O1	1.3958	Adder	3.1
960472	AF2-338 E O1	0.9306	Adder	2.07
960481	AF2-339 C O1	1.3958	Adder	3.1
960482	AF2-339 E O1	0.9306	Adder	2.07
960901	AF2-381 C	21.8509	50/50	21.8509
960902	AF2-381 E	11.4991	50/50	11.4991
961141	AF2-405	0.7678	Adder	1.7
961151	AF2-406	5.7587	Adder	12.78
961201	AF2-411 O1	28.4018	Adder	63.05
961211	AF2-412 O1	11.4817	Adder	25.49
961451	AF2-436	0.0883	Adder	0.2
NEWTON	NEWTON	1.4033	Confirmed LTF	1.4033
FARMERCITY	FARMERCITY	0.0725	Confirmed LTF	0.0725
G-007A	G-007A	2.1458	Confirmed LTF	2.1458
VFT	VFT	6.2243	Confirmed LTF	6.2243
CALDERWOOD	CALDERWOOD	0.6118	Confirmed LTF	0.6118
PRAIRIE	PRAIRIE	3.3398	Confirmed LTF	3.3398
CHEOAH	CHEOAH	0.6151	Confirmed LTF	0.6151
EDWARDS	EDWARDS	0.4592	Confirmed LTF	0.4592
TILTON	TILTON	0.8285	Confirmed LTF	0.8285
MADISON	MADISON	0.0625	Confirmed LTF	0.0625
GIBSON	GIBSON	0.7158	Confirmed LTF	0.7158
BLUEG	BLUEG	2.2828	Confirmed LTF	2.2828
TRIMBLE	TRIMBLE	0.7324	Confirmed LTF	0.7324
CATAWBA	CATAWBA	0.4053	Confirmed LTF	0.4053

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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
99088528	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	138.14	140.1	DC	27.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O1	2.2427	50/50	2.2427
957002	AF2-001 E O1	1.4951	50/50	1.4951
957011	AF2-002 C O1	1.1213	50/50	1.1213
957012	AF2-002 E O1	0.7476	50/50	0.7476
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O1	1.3230	Adder	2.94
957572	AF2-051 E O1	0.6815	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O1	2.4513	Adder	5.44
958732	AF2-164 E O1	1.6342	Adder	3.63
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O1	1.6039	Adder	3.56
959062	AF2-197 E O1	2.4058	Adder	5.34
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O1	1.0633	Adder	2.36
960322	AF2-323 E O1	0.7088	Adder	1.57
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O1	0.9489	Adder	2.11
960452	AF2-336 E O1	0.6326	Adder	1.4
960461	AF2-337 C O1	0.9489	Adder	2.11
960462	AF2-337 E O1	0.6326	Adder	1.4
960471	AF2-338 C O1	0.9489	Adder	2.11
960472	AF2-338 E O1	0.6326	Adder	1.4
960481	AF2-339 C O1	0.9489	Adder	2.11
960482	AF2-339 E O1	0.6326	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O1	17.8114	Adder	39.54
961211	AF2-412 O1	7.1197	Adder	15.8
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

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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
99088562	200811	26WARREN	PENELEC	200918	26ERIE S TIE	PENELEC	1	PN-P2-3-PN-345-003A	breaker	621.0	133.98	139.27	DC	32.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	11.0083	50/50	11.0083
200643	26SENECA#2	10.3968	50/50	10.3968
200644	26SENECA#3	1.0237	50/50	1.0237
200649	26PENNTech	1.0538	50/50	1.0538
200894	26K02	3.1597	Adder	3.72
200898	26AA1-106	1.0066	Adder	1.18
201201	26WRREN CT	3.1129	50/50	3.1129
201477	26Y2-055	9.2063	50/50	9.2063
203999	P-047 E	3.8304	Adder	4.51
235003	AC1-025 E	0.0967	Adder	0.11
236828	01GRAYMONT	0.2661	Adder	0.31
290086	Q-036 E	2.2049	Adder	2.59
915952	Y3-092 NFTWR	116.3200	50/50	116.3200
916202	Z1-069 E	4.3703	Adder	5.14
919491	AA2-000	33.2628	Adder	39.13
922932	AB1-082 OP (Suspended)	2.3462	50/50	2.3462
923443	AB1-160 E	1.2487	Adder	1.47
923821	AB2-019 FTWR	3.2570	50/50	3.2570
930511	AB1-092	1.2213	Adder	1.44
936421	AD2-055	2.5145	Adder	2.96
936991	AD2-133 C	0.9922	Adder	1.17
936992	AD2-133 E	4.5382	Adder	5.34
939171	AE1-147 C	0.8021	Adder	0.94
939172	AE1-147 E	0.5348	Adder	0.63
939291	AE1-160 C	-0.6243	Adder	-0.73
940201	AE2-001 C	0.7999	Adder	0.94
940202	AE2-001 E	0.5333	Adder	0.63
940681	AE2-055 C (Suspended)	0.7659	Adder	0.9
940682	AE2-055 E (Suspended)	0.5106	Adder	0.6
940861	AE2-074 C	1.7815	50/50	1.7815
940862	AE2-074 E	2.3450	50/50	2.3450
941191	AE2-113 C	8.8310	50/50	8.8310
941192	AE2-113 E	9.5081	50/50	9.5081
941261	AE2-120 C	0.7987	Adder	0.94
941262	AE2-120 E	0.5324	Adder	0.63
941271	AE2-121 C	0.4285	Adder	0.5
941272	AE2-121 E	0.2861	Adder	0.34
941321	AE2-126 C	1.4117	50/50	1.4117
941322	AE2-126 E	0.9411	50/50	0.9411
941331	AE2-129 C	0.7805	Adder	0.92
941332	AE2-129 E	0.5203	Adder	0.61

Bus #	Bus	Gendoliv MW Impact	Type	Full MW Impact
941351	AE2-131 C	0.7805	Adder	0.92
941352	AE2-131 E	0.5203	Adder	0.61
941421	AE2-139 C	2.8216	Adder	3.32
941422	AE2-139 E	1.8811	Adder	2.21
942351	AE2-248 C	0.6241	Adder	0.73
942352	AE2-248 E	0.4161	Adder	0.49
942491	AE2-262 C	3.8118	Adder	4.48
942492	AE2-262 E	2.5615	Adder	3.01
942501	AE2-263 C	3.5831	Adder	4.22
942502	AE2-263 E	2.3923	Adder	2.81
942813	AE2-299 BAT	23.2032	50/50	23.2032
942961	AE2-316 C	2.9077	Adder	3.42
942962	AE2-316 E	4.1464	Adder	4.88
943751	AF1-043	7.5434	Adder	8.87
944001	AF1-068 C O1	0.8275	Adder	0.97
944002	AF1-068 E O1	0.4655	Adder	0.55
944311	AF1-099 C	5.7864	Adder	6.81
944312	AF1-099 E	3.8576	Adder	4.54
944321	AF1-100 C	12.4886	Adder	14.69
944322	AF1-100 E	8.3257	Adder	9.79
944381	AF1-103 O1	6.3320	50/50	6.3320
944392	AF1-104 BAT	2.3810	50/50	2.3810
944471	AF1-112 C	0.8361	Adder	0.98
944472	AF1-112 E	0.4703	Adder	0.55
944671	AF1-132 C O1	0.7735	Adder	0.91
944672	AF1-132 E O1	0.5156	Adder	0.61
944691	AF1-134 C O1	0.6723	Adder	0.79
944692	AF1-134 E O1	0.4482	Adder	0.53
944771	AF1-142 C	9.2582	Adder	10.89
944772	AF1-142 E	6.1721	Adder	7.26
944841	AF1-149 C	0.7986	Adder	0.94
944842	AF1-149 E	0.5324	Adder	0.63
944881	AF1-153 C O1	1.3115	50/50	1.3115
944882	AF1-153 E O1	0.8743	50/50	0.8743
944901	AF1-155 C	1.3037	50/50	1.3037
944902	AF1-155 E	0.8691	50/50	0.8691
945121	AF1-177	1.5830	50/50	1.5830
945161	AF1-181	0.0665	Adder	0.08
945171	AF1-182	0.3329	Adder	0.39
945181	AF1-183	0.0803	Adder	0.09
945331	AF1-198	0.1309	Adder	0.15
945491	AF1-214 C	0.7988	Adder	0.94
945492	AF1-214 E	0.5325	Adder	0.63
945551	AF1-220 C	12.3833	50/50	12.3833
945552	AF1-220 E	8.2601	50/50	8.2601
946111	AF1-276 C	11.9548	50/50	11.9548
946112	AF1-276 E	5.8882	50/50	5.8882
946121	AF1-277 C	11.9548	50/50	11.9548
946122	AF1-277 E	5.8882	50/50	5.8882
946131	AF1-278 C	9.5282	50/50	9.5282
946132	AF1-278 E	4.7391	50/50	4.7391
946381	AF1-302 C	1.2697	Adder	1.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946382	AF1-302 E	1.6930	Adder	1.99
946421	AF1-306 C	6.4125	50/50	6.4125
946422	AF1-306 E	25.6498	50/50	25.6498
957451	AF2-039 C	0.3316	Adder	0.74
957452	AF2-039 E	0.2210	Adder	0.49
957581	AF2-052 C	5.1822	50/50	5.1822
957582	AF2-052 E	2.5211	50/50	2.5211
957681	AF2-062 C	19.6872	50/50	19.6872
957682	AF2-062 E	13.1248	50/50	13.1248
957941	AF2-088 C	0.1596	Adder	0.35
957942	AF2-088 E	0.1064	Adder	0.24
958271	AF2-121 C	0.4137	Adder	0.92
958272	AF2-121 E	0.2758	Adder	0.61
959471	AF2-238 C	0.3031	Adder	0.67
959472	AF2-238 E	0.2021	Adder	0.45
959741	AF2-265 C	0.2172	Adder	0.48
959742	AF2-265 E	0.1617	Adder	0.36
959802	AF2-271 E	0.0793	Adder	0.18
960022	AF2-293 E	0.0414	Adder	0.09
960041	AF2-295 C	1.3037	50/50	1.3037
960042	AF2-295 E	0.8691	50/50	0.8691
960051	AF2-296 C	0.3563	Adder	0.79
960052	AF2-296 E	0.2375	Adder	0.53
961211	AF2-412 O1	3.4319	Adder	7.62
NEWTON	NEWTON	1.2013	Confirmed LTF	1.2013
FARMERCITY	FARMERCITY	0.0617	Confirmed LTF	0.0617
G-007A	G-007A	3.3373	Confirmed LTF	3.3373
VFT	VFT	9.1461	Confirmed LTF	9.1461
CALDERWOOD	CALDERWOOD	0.4279	Confirmed LTF	0.4279
PRAIRIE	PRAIRIE	2.7922	Confirmed LTF	2.7922
CHEOAH	CHEOAH	0.4274	Confirmed LTF	0.4274
EDWARDS	EDWARDS	0.4102	Confirmed LTF	0.4102
TILTON	TILTON	0.7289	Confirmed LTF	0.7289
MADISON	MADISON	0.0444	Confirmed LTF	0.0444
GIBSON	GIBSON	0.6121	Confirmed LTF	0.6121
BLUEG	BLUEG	1.9183	Confirmed LTF	1.9183
TRIMBLE	TRIMBLE	0.6160	Confirmed LTF	0.6160
CATAWBA	CATAWBA	0.2359	Confirmed LTF	0.2359

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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
99088579	200912	26CONEMAGH	PENELEC	200005	CONEM-GH	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	119.02	120.5	DC	36.29

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	31.2262	50/50	31.2262
200794	26CONEMAGH	0.6545	50/50	0.6545
200805	26COLVER13 (Deactivation : 01/09/2020)	23.2600	Adder	27.36
200809	26SITHE	2.0167	50/50	2.0167
200833	26SEWRDB34	37.4753	50/50	37.4753
200834	26SW_E13_K22	0.0875	50/50	0.0875
200837	26HOMER C1	34.7328	50/50	34.7328
200838	26HOMER C2	29.3172	50/50	29.3172
200839	26HOMER C3	31.0362	50/50	31.0362
200846	26FORWARD	0.3117	50/50	0.3117
200864	K-013 E	7.2275	50/50	7.2275
200883	Q-053 E	14.0093	50/50	14.0093
200886	26ARWF_N39	0.8478	50/50	0.8478
200888	26HIGHLAND	0.7206	50/50	0.7206
200889	26STNY CRK	0.5285	50/50	0.5285
200894	26K02	5.7263	Adder	6.74
200898	26AA1-106	2.1159	Adder	2.49
200915	26CHSTN_FL	0.3826	50/50	0.3826
200925	26R32	0.8314	50/50	0.8314
200945	26CT_V3-030	0.2531	50/50	0.2531
201477	26Y2-055	3.4623	Adder	4.07
202225	26SCI_S29B	0.1361	50/50	0.1361
203034	26NA_O38_P22	0.7418	50/50	0.7418
203910	26Z1-091	1.8412	Adder	2.17
203999	P-047 E	9.8717	Adder	11.61
235003	AC1-025 E	0.1587	Adder	0.19
236828	01GRAYMONT	0.4288	Adder	0.5
290086	Q-036 E	7.8836	Adder	9.27
292350	K-023	6.6881	Adder	7.87
292542	L-013 1	6.5052	Adder	7.65
293301	N-039 E	19.6595	50/50	19.6595
293393	V3-030E	7.7347	50/50	7.7347
293432	R-040 E	0.3659	Adder	0.43
293603	O-018 E	16.7097	50/50	16.7097
293902	O-048 E	5.8546	Adder	6.89
294515	O38_P22	17.2021	50/50	17.2021
294903	P-060 E	12.2552	50/50	12.2552
296332	R-032 E	19.2804	50/50	19.2804

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
913142	Y1-033 E OP1	5.3852	Adder	6.34
916202	Z1-069 E	8.0004	Adder	9.41
917672	Z2-108 E	3.6591	Adder	4.3
919201	AA1-144 OP	15.1504	Adder	17.82
919491	AA2-000	51.6967	Adder	60.82
920341	AA2-132 (Suspended)	2.0572	Adder	2.42
922932	AB1-082 OP (Suspended)	2.9413	Adder	3.46
923443	AB1-160 E	2.2858	Adder	2.69
930511	AB1-092	1.8982	Adder	2.23
935191	AD1-154	3.2936	Adder	3.87
936421	AD2-055	3.9080	Adder	4.6
936991	AD2-133 C	3.5476	Adder	4.17
936992	AD2-133 E	16.2264	Adder	19.09
938351	AE1-053	2.0329	Adder	2.39
938881	AE1-116	1.2677	50/50	1.2677
938951	AE1-123	2.3069	Adder	2.71
938991	AE1-128 C	21.9226	50/50	21.9226
938992	AE1-128 E	14.6150	50/50	14.6150
939171	AE1-147 C	1.2893	Adder	1.52
939172	AE1-147 E	0.8595	Adder	1.01
939291	AE1-160 C	1.4262	Adder	1.68
939292	AE1-160 E	0.8198	Adder	0.96
940201	AE2-001 C	1.2877	Adder	1.51
940202	AE2-001 E	0.8585	Adder	1.01
940681	AE2-055 C (Suspended)	1.2646	Adder	1.49
940682	AE2-055 E (Suspended)	0.8431	Adder	0.99
940861	AE2-074 C	2.2334	Adder	2.63
940862	AE2-074 E	2.9399	Adder	3.46
941191	AE2-113 C	9.0111	Adder	10.6
941192	AE2-113 E	9.7021	Adder	11.41
941231	AE2-117 C	1.9331	Adder	2.27
941232	AE2-117 E	1.2887	Adder	1.52
941241	AE2-118 C	1.9331	Adder	2.27
941242	AE2-118 E	1.2887	Adder	1.52
941261	AE2-120 C	1.2869	Adder	1.51
941262	AE2-120 E	0.8580	Adder	1.01
941271	AE2-121 C	0.6868	Adder	0.81
941272	AE2-121 E	0.4586	Adder	0.54
941321	AE2-126 C	1.6708	Adder	1.97
941322	AE2-126 E	1.1138	Adder	1.31
941331	AE2-129 C	2.0887	Adder	2.46
941332	AE2-129 E	1.3924	Adder	1.64
941351	AE2-131 C	2.0887	Adder	2.46
941352	AE2-131 E	1.3924	Adder	1.64
941421	AE2-139 C	5.7887	Adder	6.81
941422	AE2-139 E	3.8592	Adder	4.54
942121	AE2-224 C	21.1128	50/50	21.1128
942122	AE2-224 E	14.0752	50/50	14.0752
942351	AE2-248 C	1.0194	Adder	1.2
942352	AE2-248 E	0.6796	Adder	0.8
942491	AE2-262 C	5.6912	Adder	6.7
942492	AE2-262 E	3.8245	Adder	4.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942501	AE2-263 C	5.3497	Adder	6.29
942502	AE2-263 E	3.5718	Adder	4.2
942511	AE2-264 C	9.4052	Adder	11.06
942512	AE2-264 E	6.2701	Adder	7.38
942811	AE2-299 C	3.0513	Adder	3.59
942812	AE2-299 E	12.2052	Adder	14.36
942961	AE2-316 C	5.0155	Adder	5.9
942962	AE2-316 E	7.1522	Adder	8.41
943151	AE2-344 C	6.5475	Adder	7.7
943152	AE2-344 E	4.3650	Adder	5.14
943711	AF1-039 C O1	1.4247	Adder	1.68
943712	AF1-039 E O1	0.9498	Adder	1.12
943751	AF1-043	11.7239	Adder	13.79
944001	AF1-068 C O1	1.3561	Adder	1.6
944002	AF1-068 E O1	0.7628	Adder	0.9
944181	AF1-086 C O1	4.0187	Adder	4.73
944182	AF1-086 E O1	17.4836	Adder	20.57
944261	AF1-094 C	1.1977	Adder	1.41
944262	AF1-094 E	0.7985	Adder	0.94
944281	AF1-096 C	1.3476	Adder	1.59
944282	AF1-096 E	0.8984	Adder	1.06
944301	AF1-098 C	4.7042	Adder	5.53
944302	AF1-098 E	3.1362	Adder	3.69
944311	AF1-099 C	8.6392	Adder	10.16
944312	AF1-099 E	5.7595	Adder	6.78
944321	AF1-100 C	18.3065	Adder	21.54
944322	AF1-100 E	12.2043	Adder	14.36
944381	AF1-103 O1	2.3868	Adder	2.81
944411	AF1-106 O1	2.2629	Adder	2.66
944471	AF1-112 C	1.3618	Adder	1.6
944472	AF1-112 E	0.7660	Adder	0.9
944671	AF1-132 C O1	1.2697	Adder	1.49
944672	AF1-132 E O1	0.8465	Adder	1.0
944691	AF1-134 C O1	2.0909	Adder	2.46
944692	AF1-134 E O1	1.3939	Adder	1.64
944751	AF1-140 C	3.0046	50/50	3.0046
944752	AF1-140 E	2.0031	50/50	2.0031
944771	AF1-142 C	13.8227	Adder	16.26
944772	AF1-142 E	9.2152	Adder	10.84
944781	AF1-143 C	12.1972	Adder	14.35
944782	AF1-143 E	6.5052	Adder	7.65
944841	AF1-149 C	1.2868	Adder	1.51
944842	AF1-149 E	0.8579	Adder	1.01
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4695	Adder	1.73
944902	AF1-155 E	0.9797	Adder	1.15
945021	AF1-167 C	0.9039	Adder	1.06
945022	AF1-167 E	0.6037	Adder	0.71
945121	AF1-177	0.5967	Adder	0.7
945161	AF1-181	0.0985	Adder	0.12
945171	AF1-182	0.4925	Adder	0.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945181	AF1-183	0.1340	Adder	0.16
945331	AF1-198	0.3071	Adder	0.36
945451	AF1-210 C	0.9958	Adder	1.17
945452	AF1-210 E	0.6639	Adder	0.78
945491	AF1-214 C	1.2869	Adder	1.51
945492	AF1-214 E	0.8580	Adder	1.01
945551	AF1-220 C	12.2600	Adder	14.42
945552	AF1-220 E	8.1778	Adder	9.62
945671	AF1-232 C O2	29.9790	50/50	29.9790
945672	AF1-232 E O2	16.1426	50/50	16.1426
945751	AF1-240 C O1	1.9761	Adder	2.32
945752	AF1-240 E O1	1.3174	Adder	1.55
946071	AF1-272 C O1	12.9445	Adder	15.23
946072	AF1-272 E O1	8.6297	Adder	10.15
946081	AF1-273 C O1	14.7579	50/50	14.7579
946082	AF1-273 E O1	9.8386	50/50	9.8386
946111	AF1-276 C	10.1126	Adder	11.9
946112	AF1-276 E	4.9808	Adder	5.86
946121	AF1-277 C	10.1126	Adder	11.9
946122	AF1-277 E	4.9808	Adder	5.86
946131	AF1-278 C	8.0599	Adder	9.48
946132	AF1-278 E	4.0088	Adder	4.72
946211	AF1-286 C O1	0.9165	Adder	1.08
946212	AF1-286 E O1	0.6223	Adder	0.73
946221	AF1-287 C	1.1296	Adder	1.33
946222	AF1-287 E	0.7531	Adder	0.89
946381	AF1-302 C	2.1902	Adder	2.58
946382	AF1-302 E	2.9203	Adder	3.44
946401	AF1-304 C	6.8962	Adder	8.11
946402	AF1-304 E	4.5975	Adder	5.41
946421	AF1-306 C	6.1273	Adder	7.21
946422	AF1-306 E	24.5094	Adder	28.83
946431	AF1-307 C	13.6494	50/50	13.6494
946432	AF1-307 E	9.0996	50/50	9.0996
946571	AF1-321 C O1	3.7594	50/50	3.7594
946572	AF1-321 E O1	2.5062	50/50	2.5062
946771	AF1-217 C O2	1.1296	Adder	1.33
946772	AF1-217 E O2	0.7531	Adder	0.89
957001	AF2-001 C O1	3.7594	50/50	3.7594
957002	AF2-001 E O1	2.5062	50/50	2.5062
957011	AF2-002 C O1	1.8797	50/50	1.8797
957012	AF2-002 E O1	1.2531	50/50	1.2531
957161	AF2-010 C	2.4478	Adder	5.43
957162	AF2-010 E	1.6496	Adder	3.66
957451	AF2-039 C	0.6259	Adder	1.39
957452	AF2-039 E	0.4173	Adder	0.93
957512	AF2-045 E	5.8171	50/50	5.8171
957561	AF2-050 C	10.5564	50/50	10.5564
957562	AF2-050 E	7.0376	50/50	7.0376
957571	AF2-051 C O1	1.8332	Adder	4.07
957572	AF2-051 E O1	0.9444	Adder	2.1
957581	AF2-052 C	2.9522	Adder	6.55

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.4362	Adder	3.19
957681	AF2-062 C	9.8097	Adder	21.78
957682	AF2-062 E	6.5398	Adder	14.52
957931	AF2-087 C	0.8194	50/50	0.8194
957932	AF2-087 E	1.1283	50/50	1.1283
957941	AF2-088 C	0.3014	Adder	0.67
957942	AF2-088 E	0.2009	Adder	0.45
957951	AF2-089 C	0.1964	Adder	0.44
957952	AF2-089 E	0.1012	Adder	0.22
957981	AF2-092 C	2.1966	50/50	2.1966
957982	AF2-092 E	1.4644	50/50	1.4644
958101	AF2-104 C	0.6761	50/50	0.6761
958102	AF2-104 E	0.4507	50/50	0.4507
958271	AF2-121 C	1.1070	Adder	2.46
958272	AF2-121 E	0.7380	Adder	1.64
958361	AF2-130 C	0.7857	Adder	1.74
958362	AF2-130 E	0.5238	Adder	1.16
958411	AF2-135 C	0.3232	Adder	0.72
958412	AF2-135 E	0.2155	Adder	0.48
958471	AF2-141	0.8619	Adder	1.91
958731	AF2-164 C O1	3.3089	Adder	7.34
958732	AF2-164 E O1	2.2059	Adder	4.9
958741	AF2-165 C	0.7534	Adder	1.67
958742	AF2-165 E	0.5023	Adder	1.11
958751	AF2-166 C	0.7857	Adder	1.74
958752	AF2-166 E	0.5238	Adder	1.16
959061	AF2-197 C O1	2.0415	Adder	4.53
959062	AF2-197 E O1	3.0622	Adder	6.8
959301	AF2-221 C	2.0266	50/50	2.0266
959302	AF2-221 E	2.7987	50/50	2.7987
959401	AF2-231 C	0.2561	Adder	0.57
959402	AF2-231 E	0.1708	Adder	0.38
959441	AF2-235 C	0.3571	Adder	0.79
959442	AF2-235 E	0.2381	Adder	0.53
959461	AF2-237 C	0.3174	Adder	0.7
959462	AF2-237 E	0.2116	Adder	0.47
959471	AF2-238 C	0.7426	Adder	1.65
959472	AF2-238 E	0.4950	Adder	1.1
959481	AF2-239 C	0.5535	Adder	1.23
959482	AF2-239 E	0.4438	Adder	0.99
959491	AF2-240 C	0.6476	Adder	1.44
959492	AF2-240 E	0.5517	Adder	1.22
959501	AF2-241 C	0.6776	Adder	1.5
959502	AF2-241 E	0.5217	Adder	1.16
959521	AF2-243 C	0.5651	Adder	1.25
959522	AF2-243 E	0.3767	Adder	0.84
959741	AF2-265 C	0.5322	Adder	1.18
959742	AF2-265 E	0.3960	Adder	0.88
959792	AF2-270 E	1.1330	50/50	1.1330
959802	AF2-271 E	0.3327	Adder	0.74
959822	AF2-273 E	0.2111	Adder	0.47
960022	AF2-293 E	0.0664	Adder	0.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	0.6575	Adder	1.46
960032	AF2-294 E	0.4383	Adder	0.97
960041	AF2-295 C	0.7788	Adder	1.73
960042	AF2-295 E	0.5192	Adder	1.15
960051	AF2-296 C	1.1082	Adder	2.46
960052	AF2-296 E	0.7388	Adder	1.64
960211	AF2-312 C	2.9816	50/50	2.9816
960212	AF2-312 E	1.9877	50/50	1.9877
960271	AF2-318 C	0.5983	Adder	1.33
960272	AF2-318 E	0.3989	Adder	0.89
960321	AF2-323 C O1	1.4727	Adder	3.27
960322	AF2-323 E O1	0.9818	Adder	2.18
960391	AF2-330 C	14.8326	50/50	14.8326
960392	AF2-330 E	6.4873	50/50	6.4873
960451	AF2-336 C O1	3.6611	50/50	3.6611
960452	AF2-336 E O1	2.4407	50/50	2.4407
960461	AF2-337 C O1	3.6611	50/50	3.6611
960462	AF2-337 E O1	2.4407	50/50	2.4407
960471	AF2-338 C O1	3.6611	50/50	3.6611
960472	AF2-338 E O1	2.4407	50/50	2.4407
960481	AF2-339 C O1	3.6611	50/50	3.6611
960482	AF2-339 E O1	2.4407	50/50	2.4407
960901	AF2-381 C	25.3292	50/50	25.3292
960902	AF2-381 E	13.3295	50/50	13.3295
961141	AF2-405	0.5997	Adder	1.33
961151	AF2-406	4.4975	Adder	9.98
961201	AF2-411 O1	22.9633	Adder	50.97
961211	AF2-412 O1	9.1953	Adder	20.41
WEC	WEC	0.0652	Confirmed LTF	0.0652
LGEE	LGEE	0.0764	Confirmed LTF	0.0764
CALDERWOOD	CALDERWOOD	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.5569	Confirmed LTF	0.5569
CBM-W1	CBM-W1	3.8281	Confirmed LTF	3.8281
O-066	O-066	8.3866	Confirmed LTF	8.3866
CHEOAH	CHEOAH	0.0485	Confirmed LTF	0.0485
CBM-S1	CBM-S1	0.0596	Confirmed LTF	0.0596
G-007	G-007	1.3936	Confirmed LTF	1.3936
MEC	MEC	0.2447	Confirmed LTF	0.2447
CATAWBA	CATAWBA	0.0952	Confirmed LTF	0.0952

11.6.25 Index 25

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
99088926	200924	26CANYON	PENELEC	200706	26N.MESHPN	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	123.83	125.34	DC	10.98

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O1	14.2789	80/20	14.2789
959471	AF2-238 C	3.7598	80/20	3.7598

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

11.6.26 Index 26

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
100954713	200927	26FOURMILE	PENELEC	200820	26ERIE SE	PENELEC	1	PN-P2-3-PN-230-6G	breaker	245.0	146.6	149.67	DC	16.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.2676	50/50	4.2676
200643	26SENECA#2	4.0305	50/50	4.0305
200644	26SENECA#3	0.3969	50/50	0.3969
201201	26WRREN CT	1.5091	50/50	1.5091
201477	26Y2-055	4.4306	50/50	4.4306
203910	26Z1-091	0.8620	Adder	1.01
203999	P-047 E	3.6149	Adder	4.25
915952	Y3-092 NFTWR	52.9400	Merchant Transmission	52.9400
916202	Z1-069 E	3.0228	Adder	3.56
920341	AA2-132 (Suspended)	0.9549	Adder	1.12
922932	AB1-082 OP (Suspended)	1.1758	Adder	1.38
923443	AB1-160 E	0.8637	Adder	1.02
923821	AB2-019 FTWR	1.4823	Merchant Transmission	1.4823
939291	AE1-160 C	-0.8464	Adder	-1.0
940861	AE2-074 C	0.8928	Adder	1.05
940862	AE2-074 E	1.1752	Adder	1.38
941191	AE2-113 C	3.6369	Adder	4.28
941192	AE2-113 E	3.9158	Adder	4.61
942811	AE2-299 C	13.8986	50/50	13.8986
942812	AE2-299 E	55.5942	50/50	55.5942
944301	AF1-098 C	21.8899	50/50	21.8899
944302	AF1-098 E	14.5933	50/50	14.5933
944381	AF1-103 O1	3.0698	50/50	3.0698
944392	AF1-104 BAT	1.0862	Merchant Transmission	1.0862
944411	AF1-106 O1	0.9979	Adder	1.17
945121	AF1-177	0.7675	50/50	0.7675
945331	AF1-198	0.1120	Adder	0.13
945551	AF1-220 C	4.4639	Adder	5.25
945552	AF1-220 E	2.9775	Adder	3.5
946111	AF1-276 C	4.8977	Adder	5.76
946112	AF1-276 E	2.4123	Adder	2.84
946121	AF1-277 C	4.8977	Adder	5.76
946122	AF1-277 E	2.4123	Adder	2.84
946131	AF1-278 C	3.9035	Adder	4.59
946132	AF1-278 E	1.9415	Adder	2.28
946211	AF1-286 C O1	0.4041	Adder	0.48
946212	AF1-286 E O1	0.2744	Adder	0.32
946403	AF1-304 BAT	6.4310	Merchant Transmission	6.4310
946421	AF1-306 C	2.2134	Adder	2.6
946422	AF1-306 E	8.8537	Adder	10.42
957581	AF2-052 C	1.2178	Adder	2.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	0.5924	Adder	1.31
957681	AF2-062 C	4.4864	Adder	9.96
957682	AF2-062 E	2.9910	Adder	6.64
959471	AF2-238 C	0.2780	Adder	0.62
959472	AF2-238 E	0.1853	Adder	0.41
959491	AF2-240 C	0.2856	Adder	0.63
959492	AF2-240 E	0.2433	Adder	0.54
959501	AF2-241 C	0.2988	Adder	0.66
959502	AF2-241 E	0.2301	Adder	0.51
959741	AF2-265 C	0.1992	Adder	0.44
959742	AF2-265 E	0.1483	Adder	0.33
960031	AF2-294 C	0.3052	Adder	0.68
960032	AF2-294 E	0.2034	Adder	0.45
961141	AF2-405	0.2644	Adder	0.59
961151	AF2-406	1.9833	Adder	4.4
961201	AF2-411 O1	7.3778	Adder	16.38
961211	AF2-412 O1	3.2082	Adder	7.12
NEWTON	NEWTON	0.6372	Confirmed LTF	0.6372
FARMERCITY	FARMERCITY	0.0328	Confirmed LTF	0.0328
G-007A	G-007A	2.0331	Confirmed LTF	2.0331
VFT	VFT	5.6244	Confirmed LTF	5.6244
CALDERWOOD	CALDERWOOD	0.2326	Confirmed LTF	0.2326
AA3-300	AA3-300	5.2220	LTF	5.2220
PRAIRIE	PRAIRIE	1.4852	Confirmed LTF	1.4852
CHEOAH	CHEOAH	0.2322	Confirmed LTF	0.2322
EDWARDS	EDWARDS	0.2167	Confirmed LTF	0.2167
TILTON	TILTON	0.3856	Confirmed LTF	0.3856
MADISON	MADISON	0.0262	Confirmed LTF	0.0262
GIBSON	GIBSON	0.3249	Confirmed LTF	0.3249
BLUEG	BLUEG	1.0208	Confirmed LTF	1.0208
TRIMBLE	TRIMBLE	0.3278	Confirmed LTF	0.3278
CATAWBA	CATAWBA	0.1312	Confirmed LTF	0.1312

11.6.27 Index 27

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
100482400	235121	01ARMSTR	AP	235204	01KITTAN	AP	1	ATSI-P2-3-CEI-345-004D	breaker	228.0	121.01	123.05	DC	10.31

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
201477	26Y2-055	1.4142	Adder	1.66
915951	Y3-092 FTIR	83.1700	Merchant Transmission	83.1700
935191	AD1-154	1.1485	Adder	1.35
938951	AE1-123	1.3755	Adder	1.62
939291	AE1-160 C	0.8690	Adder	1.02
939292	AE1-160 E	0.4995	Adder	0.59
941191	AE2-113 C	2.7563	Adder	3.24
941192	AE2-113 E	2.9676	Adder	3.49
942811	AE2-299 C	1.6486	Adder	1.94
942812	AE2-299 E	6.5944	Adder	7.76
942961	AE2-316 C	3.3523	Adder	3.94
942962	AE2-316 E	4.7805	Adder	5.62
943151	AE2-344 C	4.3397	Adder	5.11
943152	AE2-344 E	2.8931	Adder	3.4
943351	AF1-006 C	0.7667	Adder	0.9
943352	AF1-006 E	0.4313	Adder	0.51
944261	AF1-094 C	0.7193	Adder	0.85
944262	AF1-094 E	0.4795	Adder	0.56
944281	AF1-096 C	0.8211	Adder	0.97
944282	AF1-096 E	0.5474	Adder	0.64
944301	AF1-098 C	2.5561	Adder	3.01
944302	AF1-098 E	1.7041	Adder	2.0
944381	AF1-103 O1	0.9755	Adder	1.15
944391	AF1-104 O1	1.3449	Adder	1.58
944881	AF1-153 C O1	0.6446	Adder	0.76
944882	AF1-153 E O1	0.4298	Adder	0.51
944901	AF1-155 C	0.6493	Adder	0.76
944902	AF1-155 E	0.4329	Adder	0.51
945021	AF1-167 C	0.5074	Adder	0.6
945022	AF1-167 E	0.3389	Adder	0.4
945051	AF1-170 C	3.0501	Adder	3.59
945052	AF1-170 E	2.0334	Adder	2.39
945121	AF1-177	0.2439	Adder	0.29
945551	AF1-220 C	4.0423	Adder	4.76
945552	AF1-220 E	2.6964	Adder	3.17
945751	AF1-240 C O1	0.6891	Adder	0.81
945752	AF1-240 E O1	0.4594	Adder	0.54
946111	AF1-276 C	2.9648	Adder	3.49
946112	AF1-276 E	1.4603	Adder	1.72
946121	AF1-277 C	2.9648	Adder	3.49
946122	AF1-277 E	1.4603	Adder	1.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946131	AF1-278 C	2.3630	Adder	2.78
946132	AF1-278 E	1.1753	Adder	1.38
946221	AF1-287 C	0.7457	Adder	0.88
946222	AF1-287 E	0.4971	Adder	0.58
946381	AF1-302 C	1.4639	Adder	1.72
946382	AF1-302 E	1.9519	Adder	2.3
946401	AF1-304 C	4.2131	Adder	4.96
946402	AF1-304 E	2.8087	Adder	3.3
946421	AF1-306 C	2.3546	Adder	2.77
946422	AF1-306 E	9.4186	Adder	11.08
946771	AF1-217 C O2	0.7458	Adder	0.88
946772	AF1-217 E O2	0.4972	Adder	0.58
957161	AF2-010 C	1.4713	Adder	3.27
957162	AF2-010 E	0.9916	Adder	2.2
957571	AF2-051 C O1	1.2146	Adder	2.7
957572	AF2-051 E O1	0.6257	Adder	1.39
957581	AF2-052 C	0.8474	Adder	1.88
957582	AF2-052 E	0.4123	Adder	0.92
957681	AF2-062 C	2.7857	Adder	6.18
957682	AF2-062 E	1.8571	Adder	4.12
957951	AF2-089 C	0.1197	Adder	0.27
957952	AF2-089 E	0.0617	Adder	0.14
958031	AF2-097 C	0.0952	Adder	0.21
958032	AF2-097 E	0.0635	Adder	0.14
958361	AF2-130 C	0.4746	Adder	1.05
958362	AF2-130 E	0.3164	Adder	0.7
958731	AF2-164 C O1	1.9503	Adder	4.33
958732	AF2-164 E O1	1.3002	Adder	2.89
958741	AF2-165 C	0.4639	Adder	1.03
958742	AF2-165 E	0.3093	Adder	0.69
958751	AF2-166 C	0.4746	Adder	1.05
958752	AF2-166 E	0.3164	Adder	0.7
958791	AF2-170 C	0.4277	Adder	0.95
958792	AF2-170 E	0.2851	Adder	0.63
959441	AF2-235 C	0.2176	Adder	0.48
959442	AF2-235 E	0.1451	Adder	0.32
959461	AF2-237 C	0.1906	Adder	0.42
959462	AF2-237 E	0.1271	Adder	0.28
959521	AF2-243 C	0.3479	Adder	0.77
959522	AF2-243 E	0.2319	Adder	0.51
960041	AF2-295 C	0.3441	Adder	0.76
960042	AF2-295 E	0.2294	Adder	0.51
960321	AF2-323 C O1	0.9749	Adder	2.16
960322	AF2-323 E O1	0.6499	Adder	1.44
960891	AF2-380 C	0.2033	Adder	0.45
960892	AF2-380 E	0.1356	Adder	0.3
NEWTON	NEWTON	0.4835	Confirmed LTF	0.4835
FARMERCITY	FARMERCITY	0.0249	Confirmed LTF	0.0249
G-007A	G-007A	1.4433	Confirmed LTF	1.4433
VFT	VFT	3.9990	Confirmed LTF	3.9990
CALDERWOOD	CALDERWOOD	0.2013	Confirmed LTF	0.2013
PRAIRIE	PRAIRIE	1.1443	Confirmed LTF	1.1443

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CHEOAH	CHEOAH	0.2017	Confirmed LTF	0.2017
EDWARDS	EDWARDS	0.1596	Confirmed LTF	0.1596
TILTON	TILTON	0.2873	Confirmed LTF	0.2873
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2473	Confirmed LTF	0.2473
BLUEG	BLUEG	0.7881	Confirmed LTF	0.7881
TRIMBLE	TRIMBLE	0.2527	Confirmed LTF	0.2527
CATAWBA	CATAWBA	0.1267	Confirmed LTF	0.1267

11.6.28 Index 28

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
100482338	235174	01ELKO	AP	235237	01RIDGWY	AP	1	AP-P2-3-WP-230-447	breaker	133.0	154.99	158.94	DC	11.65

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	0.9294	50/50	0.9294
201477	26Y2-055	1.7502	Adder	2.06
941191	AE2-113 C	4.8277	Adder	5.68
941192	AE2-113 E	5.1979	Adder	6.12
941321	AE2-126 C	0.5920	Adder	0.7
941322	AE2-126 E	0.3947	Adder	0.46
942961	AE2-316 C	7.3854	50/50	7.3854
942962	AE2-316 E	10.5316	50/50	10.5316
944381	AF1-103 O1	1.2055	Adder	1.42
945121	AF1-177	0.3014	Adder	0.35
945551	AF1-220 C	9.8180	50/50	9.8180
945552	AF1-220 E	6.5489	50/50	6.5489
946111	AF1-276 C	3.5389	Adder	4.16
946112	AF1-276 E	1.7430	Adder	2.05
946121	AF1-277 C	3.5389	Adder	4.16
946122	AF1-277 E	1.7430	Adder	2.05
946131	AF1-278 C	2.8205	Adder	3.32
946132	AF1-278 E	1.4029	Adder	1.65
946381	AF1-302 C	3.2251	50/50	3.2251
946382	AF1-302 E	4.3001	50/50	4.3001
946421	AF1-306 C	9.5243	50/50	9.5243
946422	AF1-306 E	38.0971	50/50	38.0971
957581	AF2-052 C	1.1565	Adder	2.57
957582	AF2-052 E	0.5626	Adder	1.25
957681	AF2-062 C	3.1479	Adder	6.99
957682	AF2-062 E	2.0986	Adder	4.66
959823	AF2-273 BAT	0.0441	Merchant Transmission	0.0441
WEC	WEC	0.0287	Confirmed LTF	0.0287
LGEE	LGEE	0.0468	Confirmed LTF	0.0468
CPL	CPL	0.0106	Confirmed LTF	0.0106
CBM-W2	CBM-W2	0.6061	Confirmed LTF	0.6061
CBM-W1	CBM-W1	1.3010	Confirmed LTF	1.3010
TVA	TVA	0.0868	Confirmed LTF	0.0868
O-066	O-066	1.3507	Confirmed LTF	1.3507
CBM-S2	CBM-S2	0.1676	Confirmed LTF	0.1676
CBM-S1	CBM-S1	0.5623	Confirmed LTF	0.5623
G-007	G-007	0.2090	Confirmed LTF	0.2090
MEC	MEC	0.1351	Confirmed LTF	0.1351

11.6.29 Index 29

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
100482577	235197	01KARNSC	AP	235152	01BUTLER	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	175.76	177.79	DC	8.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.8922	80/20	0.8922
200642	26SENECA#1	3.0462	80/20	3.0462
200643	26SENECA#2	2.8770	80/20	2.8770
200644	26SENECA#3	0.2833	80/20	0.2833
200662	26SCRUB GR	1.8889	80/20	1.8889
200805	26COLVER13 (Deactivation : 01/09/2020)	6.3056	Adder	7.42
200828	26HNSMLK 1	0.9116	80/20	0.9116
200829	26HNSMLK 2	0.9116	80/20	0.9116
200830	26HNSMLK 3	0.9116	80/20	0.9116
200831	26HNSMLK 4	0.9116	80/20	0.9116
200832	26HNSMLK 5	0.9116	80/20	0.9116
200849	26LAKVU GN	0.0766	80/20	0.0766
201201	26WRREN CT	0.7776	80/20	0.7776
201477	26Y2-055	2.2930	80/20	2.2930
235030	01MHNG-T155	0.1791	80/20	0.1791
915951	Y3-092 FTIR	91.2200	80/20	91.2200
919491	AA2-000	22.6449	Adder	26.64
922932	AB1-082 OP (Suspended)	1.0362	Adder	1.22
930511	AB1-092	0.8315	Adder	0.98
935191	AD1-154	2.3920	80/20	2.3920
936421	AD2-055	1.7118	Adder	2.01
936991	AD2-133 C	0.7902	Adder	0.93
938951	AE1-123	2.8859	80/20	2.8859
939171	AE1-147 C	0.5295	Adder	0.62
939291	AE1-160 C	1.5718	80/20	1.5718
940201	AE2-001 C	0.5281	Adder	0.62
940861	AE2-074 C	0.7868	Adder	0.93
941191	AE2-113 C	3.6593	Adder	4.31
941261	AE2-120 C	0.5273	Adder	0.62
941271	AE2-121 C	0.2828	Adder	0.33
941321	AE2-126 C	0.6930	Adder	0.82
941331	AE2-129 C	0.5788	Adder	0.68
941351	AE2-131 C	0.5788	Adder	0.68
942351	AE2-248 C	0.4127	Adder	0.49
942491	AE2-262 C	2.4939	Adder	2.93
942501	AE2-263 C	2.3443	Adder	2.76
942811	AE2-299 C	2.7680	80/20	2.7680
942961	AE2-316 C	4.4555	80/20	4.4555
943151	AE2-344 C	6.5510	80/20	6.5510

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943351	AF1-006 C	1.1625	80/20	1.1625
943751	AF1-043	5.1354	Adder	6.04
944001	AF1-068 C O1	0.5476	Adder	0.64
944181	AF1-086 C O1	1.1364	Adder	1.34
944261	AF1-094 C	1.2332	80/20	1.2332
944281	AF1-096 C	1.4851	80/20	1.4851
944301	AF1-098 C	4.2053	80/20	4.2053
944311	AF1-099 C	3.7857	Adder	4.45
944321	AF1-100 C	8.1587	Adder	9.6
944381	AF1-103 O1	1.5818	80/20	1.5818
944391	AF1-104 O1	1.8308	80/20	1.8308
944471	AF1-112 C	0.5528	Adder	0.65
944671	AF1-132 C O1	0.5118	Adder	0.6
944691	AF1-134 C O1	0.6550	Adder	0.77
944771	AF1-142 C	6.0572	Adder	7.13
944841	AF1-149 C	0.5272	Adder	0.62
944881	AF1-153 C O1	1.0910	80/20	1.0910
944901	AF1-155 C	1.1012	80/20	1.1012
945021	AF1-167 C	1.5298	80/20	1.5298
945051	AF1-170 C	4.3199	80/20	4.3199
945121	AF1-177	0.3954	80/20	0.3954
945161	AF1-181	0.0435	Adder	0.05
945171	AF1-182	0.2177	Adder	0.26
945181	AF1-183	0.0540	Adder	0.06
945451	AF1-210 C	1.7315	80/20	1.7315
945491	AF1-214 C	0.5273	Adder	0.62
945551	AF1-220 C	5.5158	Adder	6.49
945751	AF1-240 C O1	1.4352	80/20	1.4352
946111	AF1-276 C	3.8840	Adder	4.57
946121	AF1-277 C	3.8840	Adder	4.57
946131	AF1-278 C	3.0956	Adder	3.64
946221	AF1-287 C	1.1272	80/20	1.1272
946381	AF1-302 C	1.9456	80/20	1.9456
946401	AF1-304 C	7.6914	80/20	7.6914
946421	AF1-306 C	3.7793	80/20	3.7793
946771	AF1-217 C O2	1.1272	80/20	1.1272
957161	AF2-010 C	4.7734	80/20	4.7734
957451	AF2-039 C	0.2300	Adder	0.51
957571	AF2-051 C O1	3.3281	80/20	3.3281
957581	AF2-052 C	1.1083	Adder	2.46
957681	AF2-062 C	3.6269	Adder	8.05
957941	AF2-088 C	0.1108	Adder	0.25
957951	AF2-089 C	0.4084	80/20	0.4084
958031	AF2-097 C	0.2725	80/20	0.2725
958271	AF2-121 C	0.3068	Adder	0.68
958361	AF2-130 C	1.7730	80/20	1.7730
958731	AF2-164 C O1	4.7414	80/20	4.7414
958741	AF2-165 C	1.5952	80/20	1.5952
958751	AF2-166 C	1.7730	80/20	1.7730
958791	AF2-170 C	1.0985	80/20	1.0985
959441	AF2-235 C	0.7426	80/20	0.7426
959461	AF2-237 C	0.6166	80/20	0.6166

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959521	AF2-243 C	1.1964	80/20	1.1964
960041	AF2-295 C	1.1012	80/20	1.1012
960051	AF2-296 C	0.3472	Adder	0.77
960211	AF2-312 C	0.2597	Adder	0.58
960321	AF2-323 C O1	2.6696	80/20	2.6696
960891	AF2-380 C	3.6915	80/20	3.6915
961201	AF2-411 O1	6.7778	Adder	15.05
NEWTON	NEWTON	0.6780	Confirmed LTF	0.6780
FARMERCITY	FARMERCITY	0.0348	Confirmed LTF	0.0348
G-007A	G-007A	1.8077	Confirmed LTF	1.8077
VFT	VFT	5.0052	Confirmed LTF	5.0052
CALDERWOOD	CALDERWOOD	0.2664	Confirmed LTF	0.2664
PRAIRIE	PRAIRIE	1.5911	Confirmed LTF	1.5911
CHEOAH	CHEOAH	0.2668	Confirmed LTF	0.2668
EDWARDS	EDWARDS	0.2258	Confirmed LTF	0.2258
TILTON	TILTON	0.4057	Confirmed LTF	0.4057
MADISON	MADISON	0.0504	Confirmed LTF	0.0504
GIBSON	GIBSON	0.3467	Confirmed LTF	0.3467
BLUEG	BLUEG	1.1006	Confirmed LTF	1.1006
TRIMBLE	TRIMBLE	0.3534	Confirmed LTF	0.3534
CATAWBA	CATAWBA	0.1596	Confirmed LTF	0.1596

11.6.30 Index 30

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
100482614	235203	01KISSNG	AP	235197	01KARNSC	AP	1	PN-P1-2-PN-345-107T	single	268.0	136.42	137.86	DC	8.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.9413	80/20	0.9413
200642	26SENECA#1	3.2162	80/20	3.2162
200643	26SENECA#2	3.0375	80/20	3.0375
200644	26SENECA#3	0.2991	80/20	0.2991
200662	26SCRUB GR	1.9930	80/20	1.9930
200805	26COLVER13 (Deactivation : 01/09/2020)	6.6656	Adder	7.84
200828	26HNSMLK 1	0.9618	80/20	0.9618
200829	26HNSMLK 2	0.9618	80/20	0.9618
200830	26HNSMLK 3	0.9618	80/20	0.9618
200831	26HNSMLK 4	0.9618	80/20	0.9618
200832	26HNSMLK 5	0.9618	80/20	0.9618
200849	26LAKVU GN	0.0808	80/20	0.0808
201201	26WRREN CT	0.8210	80/20	0.8210
201477	26Y2-055	2.4209	80/20	2.4209
915951	Y3-092 FTIR	96.2500	80/20	96.2500
919491	AA2-000	23.9357	Adder	28.16
922932	AB1-082 OP (Suspended)	1.0952	Adder	1.29
930511	AB1-092	0.8788	Adder	1.03
935191	AD1-154	2.5250	80/20	2.5250
936421	AD2-055	1.8094	Adder	2.13
936991	AD2-133 C	0.8358	Adder	0.98
938951	AE1-123	3.0449	80/20	3.0449
939171	AE1-147 C	0.5599	Adder	0.66
939291	AE1-160 C	1.6584	80/20	1.6584
940201	AE2-001 C	0.5584	Adder	0.66
940681	AE2-055 C (Suspended)	0.5365	Adder	0.63
940861	AE2-074 C	0.8316	Adder	0.98
941191	AE2-113 C	3.8652	Adder	4.55
941261	AE2-120 C	0.5576	Adder	0.66
941271	AE2-121 C	0.2990	Adder	0.35
941321	AE2-126 C	0.7320	Adder	0.86
941331	AE2-129 C	0.6120	Adder	0.72
941351	AE2-131 C	0.6120	Adder	0.72
942351	AE2-248 C	0.4366	Adder	0.51
942491	AE2-262 C	2.6354	Adder	3.1
942501	AE2-263 C	2.4773	Adder	2.91
942811	AE2-299 C	2.9216	80/20	2.9216
942961	AE2-316 C	4.6978	80/20	4.6978
943151	AE2-344 C	6.9131	80/20	6.9131

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943351	AF1-006 C	1.2268	80/20	1.2268
943751	AF1-043	5.4282	Adder	6.39
944001	AF1-068 C O1	0.5791	Adder	0.68
944181	AF1-086 C O1	1.2012	Adder	1.41
944261	AF1-094 C	1.3013	80/20	1.3013
944281	AF1-096 C	1.5670	80/20	1.5670
944301	AF1-098 C	4.4381	80/20	4.4381
944311	AF1-099 C	4.0006	Adder	4.71
944321	AF1-100 C	8.6190	Adder	10.14
944381	AF1-103 O1	1.6700	80/20	1.6700
944391	AF1-104 O1	1.9318	80/20	1.9318
944471	AF1-112 C	0.5846	Adder	0.69
944671	AF1-132 C O1	0.5414	Adder	0.64
944691	AF1-134 C O1	0.6922	Adder	0.81
944771	AF1-142 C	6.4009	Adder	7.53
944841	AF1-149 C	0.5575	Adder	0.66
944881	AF1-153 C O1	1.1507	80/20	1.1507
944901	AF1-155 C	1.1615	80/20	1.1615
945021	AF1-167 C	1.4654	80/20	1.4654
945051	AF1-170 C	4.5584	80/20	4.5584
945121	AF1-177	0.4175	80/20	0.4175
945161	AF1-181	0.0460	Adder	0.05
945171	AF1-182	0.2300	Adder	0.27
945181	AF1-183	0.0571	Adder	0.07
945331	AF1-198	0.1099	Adder	0.13
945451	AF1-210 C	1.3130	80/20	1.3130
945491	AF1-214 C	0.5577	Adder	0.66
945551	AF1-220 C	5.8245	Adder	6.85
945751	AF1-240 C O1	1.5150	80/20	1.5150
946111	AF1-276 C	4.1027	Adder	4.83
946121	AF1-277 C	4.1027	Adder	4.83
946131	AF1-278 C	3.2699	Adder	3.85
946221	AF1-287 C	1.1894	80/20	1.1894
946381	AF1-302 C	2.0515	80/20	2.0515
946401	AF1-304 C	8.1156	80/20	8.1156
946421	AF1-306 C	3.9889	80/20	3.9889
946771	AF1-217 C O2	1.1894	80/20	1.1894
957161	AF2-010 C	5.0365	80/20	5.0365
957451	AF2-039 C	0.2431	Adder	0.54
957571	AF2-051 C O1	3.5119	80/20	3.5119
957581	AF2-052 C	1.1710	Adder	2.6
957681	AF2-062 C	3.8318	Adder	8.51
957941	AF2-088 C	0.1170	Adder	0.26
957951	AF2-089 C	0.4309	80/20	0.4309
958031	AF2-097 C	0.2875	80/20	0.2875
958271	AF2-121 C	0.3244	Adder	0.72
958361	AF2-130 C	1.8707	80/20	1.8707
958731	AF2-164 C O1	5.0026	80/20	5.0026
958741	AF2-165 C	1.6831	80/20	1.6831
958751	AF2-166 C	1.8707	80/20	1.8707
958791	AF2-170 C	1.1591	80/20	1.1591
959441	AF2-235 C	0.7835	80/20	0.7835

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959461	AF2-237 C	0.6506	80/20	0.6506
959521	AF2-243 C	1.2623	80/20	1.2623
960041	AF2-295 C	1.1615	80/20	1.1615
960051	AF2-296 C	0.3669	Adder	0.81
960211	AF2-312 C	0.2747	Adder	0.61
960321	AF2-323 C O1	2.8166	80/20	2.8166
961201	AF2-411 O1	7.1711	Adder	15.92
961211	AF2-412 O1	3.0682	Adder	6.81
NEWTON	NEWTON	0.7307	Confirmed LTF	0.7307
FARMERCITY	FARMERCITY	0.0375	Confirmed LTF	0.0375
G-007A	G-007A	1.9683	Confirmed LTF	1.9683
VFT	VFT	5.4438	Confirmed LTF	5.4438
CALDERWOOD	CALDERWOOD	0.2858	Confirmed LTF	0.2858
PRAIRIE	PRAIRIE	1.7151	Confirmed LTF	1.7151
CHEOAH	CHEOAH	0.2863	Confirmed LTF	0.2863
EDWARDS	EDWARDS	0.2439	Confirmed LTF	0.2439
TILTON	TILTON	0.4378	Confirmed LTF	0.4378
MADISON	MADISON	0.0544	Confirmed LTF	0.0544
GIBSON	GIBSON	0.3740	Confirmed LTF	0.3740
BLUEG	BLUEG	1.1874	Confirmed LTF	1.1874
TRIMBLE	TRIMBLE	0.3812	Confirmed LTF	0.3812
CATAWBA	CATAWBA	0.1708	Confirmed LTF	0.1708

11.6.31 Index 31

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
100482621	235240	01COLMBGPN	AP	235202	01KISKIV	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	155.44	157.48	DC	6.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.5470	80/20	0.5470
200642	26SENECA#1	2.5510	80/20	2.5510
200643	26SENECA#2	2.4093	80/20	2.4093
200644	26SENECA#3	0.2372	80/20	0.2372
200662	26SCRUB GR	1.3466	80/20	1.3466
200828	26HNSMLK 1	0.8468	80/20	0.8468
200829	26HNSMLK 2	0.8468	80/20	0.8468
200830	26HNSMLK 3	0.8468	80/20	0.8468
200831	26HNSMLK 4	0.8468	80/20	0.8468
200832	26HNSMLK 5	0.8468	80/20	0.8468
200849	26LAKVU GN	0.0656	80/20	0.0656
201201	26WRREN CT	0.6553	80/20	0.6553
201477	26Y2-055	1.9323	80/20	1.9323
235030	01MHNG-T155	0.2013	80/20	0.2013
235134	01AL&D6	0.1876	80/20	0.1876
915951	Y3-092 FTIR	79.4500	80/20	79.4500
922932	AB1-082 OP (Suspended)	0.8786	Adder	1.03
935191	AD1-154	1.4444	80/20	1.4444
938951	AE1-123	1.7696	80/20	1.7696
939291	AE1-160 C	1.1259	80/20	1.1259
940861	AE2-074 C	0.6671	Adder	0.78
941191	AE2-113 C	3.0287	Adder	3.56
941321	AE2-126 C	0.5457	Adder	0.64
942811	AE2-299 C	2.3709	80/20	2.3709
942961	AE2-316 C	4.2349	80/20	4.2349
943151	AE2-344 C	5.5745	80/20	5.5745
943351	AF1-006 C	0.9948	80/20	0.9948
944261	AF1-094 C	0.9748	80/20	0.9748
944281	AF1-096 C	1.0638	80/20	1.0638
944301	AF1-098 C	3.5746	80/20	3.5746
944321	AF1-100 C	6.4413	Adder	7.58
944381	AF1-103 O1	1.3330	80/20	1.3330
944391	AF1-104 O1	1.5832	80/20	1.5832
944881	AF1-153 C O1	0.8324	80/20	0.8324
944901	AF1-155 C	0.8386	80/20	0.8386
945021	AF1-167 C	0.9849	80/20	0.9849
945051	AF1-170 C	3.7079	80/20	3.7079
945121	AF1-177	0.3333	80/20	0.3333
945161	AF1-181	0.0343	Adder	0.04
945171	AF1-182	0.1716	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945451	AF1-210 C	1.2859	80/20	1.2859
945551	AF1-220 C	4.4314	Adder	5.21
945751	AF1-240 C O1	0.8666	80/20	0.8666
946111	AF1-276 C	3.2928	Adder	3.87
946121	AF1-277 C	3.2928	Adder	3.87
946131	AF1-278 C	2.6245	Adder	3.09
946221	AF1-287 C	0.9586	80/20	0.9586
946381	AF1-302 C	1.8493	80/20	1.8493
946401	AF1-304 C	5.4132	80/20	5.4132
946421	AF1-306 C	3.0393	80/20	3.0393
946771	AF1-217 C O2	0.9586	80/20	0.9586
957161	AF2-010 C	3.7531	80/20	3.7531
957571	AF2-051 C O1	2.8047	80/20	2.8047
957581	AF2-052 C	0.9313	Adder	2.07
957681	AF2-062 C	3.0814	Adder	6.84
957951	AF2-089 C	0.2925	80/20	0.2925
958031	AF2-097 C	0.2332	80/20	0.2332
958361	AF2-130 C	1.1454	80/20	1.1454
958731	AF2-164 C O1	4.4045	80/20	4.4045
958741	AF2-165 C	1.1075	80/20	1.1075
958751	AF2-166 C	1.1454	80/20	1.1454
958791	AF2-170 C	0.9499	80/20	0.9499
959441	AF2-235 C	0.5319	80/20	0.5319
959461	AF2-237 C	0.4874	80/20	0.4874
959521	AF2-243 C	0.8306	80/20	0.8306
960041	AF2-295 C	0.8386	80/20	0.8386
960321	AF2-323 C O1	2.2485	80/20	2.2485
960891	AF2-380 C	0.6152	80/20	0.6152
NEWTON	NEWTON	0.5072	Confirmed LTF	0.5072
FARMERCITY	FARMERCITY	0.0262	Confirmed LTF	0.0262
G-007A	G-007A	1.4529	Confirmed LTF	1.4529
VFT	VFT	4.0313	Confirmed LTF	4.0313
CALDERWOOD	CALDERWOOD	0.2107	Confirmed LTF	0.2107
PRAIRIE	PRAIRIE	1.1985	Confirmed LTF	1.1985
CHEOAH	CHEOAH	0.2112	Confirmed LTF	0.2112
EDWARDS	EDWARDS	0.1673	Confirmed LTF	0.1673
TILTON	TILTON	0.3018	Confirmed LTF	0.3018
MADISON	MADISON	0.0323	Confirmed LTF	0.0323
GIBSON	GIBSON	0.2593	Confirmed LTF	0.2593
BLUEG	BLUEG	0.8263	Confirmed LTF	0.8263
TRIMBLE	TRIMBLE	0.2655	Confirmed LTF	0.2655
CATAWBA	CATAWBA	0.1326	Confirmed LTF	0.1326

11.6.32 Index 32

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
98651273	235248	01SHINGL	AP	200513	26LEWISTWN	PENELEC	1	Base Case	single	491.0	151.21	153.83	DC	12.86

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	5.5431	80/20	5.5431
200643	26SENECA#2	5.2352	80/20	5.2352
200644	26SENECA#3	0.5155	80/20	0.5155
200649	26PENNTech	1.5693	80/20	1.5693
200665	26SHAWVL 3	9.5531	80/20	9.5531
200666	26SHAWVL 4	9.5253	80/20	9.5253
200715	26SHAWVL 1	6.0900	80/20	6.0900
200722	26SHAWVL 2	6.2456	80/20	6.2456
200887	26ARMNA MT	0.2744	80/20	0.2744
200898	26AA1-106	2.4135	80/20	2.4135
200905	26Q36	0.2469	80/20	0.2469
200913	26SHAW-D	0.2627	80/20	0.2627
200949	26X1-109	11.2111	80/20	11.2111
201201	26WRREN CT	1.1529	80/20	1.1529
201477	26Y2-055	3.4037	80/20	3.4037
203261	26BLOSSBCT	0.3182	80/20	0.3182
203283	26MANOR_T86	0.0177	80/20	0.0177
203349	26Z1-069 C	0.2140	80/20	0.2140
203351	26GROZ1-110	0.4163	80/20	0.4163
203352	26CANZ2-011	0.4163	80/20	0.4163
919201	AA1-144 OP	14.6390	80/20	14.6390
919491	AA2-000	117.7594	80/20	117.7594
922932	AB1-082 OP (Suspended)	2.1094	80/20	2.1094
923442	AB1-160 C	0.0611	80/20	0.0611
930511	AB1-092	4.3238	80/20	4.3238
934801	AD1-108	0.0314	80/20	0.0314
934811	AD1-109	0.0230	80/20	0.0230
936421	AD2-055	8.9019	80/20	8.9019
936991	AD2-133 C	2.5763	80/20	2.5763
939171	AE1-147 C	5.7918	80/20	5.7918
940201	AE2-001 C	5.8136	80/20	5.8136
940681	AE2-055 C (Suspended)	6.1459	80/20	6.1459
940861	AE2-074 C	1.6017	80/20	1.6017
941191	AE2-113 C	10.0442	80/20	10.0442
941261	AE2-120 C	5.8255	80/20	5.8255
941271	AE2-121 C	3.0591	80/20	3.0591
941321	AE2-126 C	2.7902	80/20	2.7902
941331	AE2-129 C	2.3146	80/20	2.3146
941351	AE2-131 C	2.3146	80/20	2.3146
941421	AE2-139 C	6.8664	80/20	6.8664
942351	AE2-248 C	4.8058	80/20	4.8058
942491	AE2-262 C	19.5390	80/20	19.5390

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942501	AE2-263 C	18.3667	80/20	18.3667
942961	AE2-316 C	6.8483	80/20	6.8483
943751	AF1-043	26.7057	80/20	26.7057
944001	AF1-068 C O1	6.4522	80/20	6.4522
944181	AF1-086 C O1	2.3216	80/20	2.3216
944311	AF1-099 C	29.6602	80/20	29.6602
944321	AF1-100 C	48.2220	80/20	48.2220
944381	AF1-103 O1	2.3452	80/20	2.3452
944471	AF1-112 C	6.3690	80/20	6.3690
944671	AF1-132 C O1	6.0725	80/20	6.0725
944691	AF1-134 C O1	2.0815	80/20	2.0815
944771	AF1-142 C	47.4563	80/20	47.4563
944841	AF1-149 C	5.8268	80/20	5.8268
944881	AF1-153 C O1	2.7719	80/20	2.7719
944901	AF1-155 C	2.7520	80/20	2.7520
945121	AF1-177	0.5863	80/20	0.5863
945161	AF1-181	0.2576	80/20	0.2576
945171	AF1-182	1.2917	80/20	1.2917
945181	AF1-183	0.2894	80/20	0.2894
945331	AF1-198	0.2427	80/20	0.2427
945491	AF1-214 C	5.8248	80/20	5.8248
945551	AF1-220 C	19.8253	80/20	19.8253
946111	AF1-276 C	7.4464	80/20	7.4464
946121	AF1-277 C	7.4464	80/20	7.4464
946131	AF1-278 C	5.9349	80/20	5.9349
946381	AF1-302 C	2.9905	80/20	2.9905
946421	AF1-306 C	12.1569	80/20	12.1569
957451	AF2-039 C	2.0555	80/20	2.0555
957581	AF2-052 C	4.7652	80/20	4.7652
957681	AF2-062 C	12.8568	80/20	12.8568
957941	AF2-088 C	0.9897	80/20	0.9897
958271	AF2-121 C	2.3146	80/20	2.3146
959061	AF2-197 C O1	3.2272	80/20	3.2272
959471	AF2-238 C	1.0609	80/20	1.0609
959481	AF2-239 C	0.8738	80/20	0.8738
959741	AF2-265 C	0.7603	80/20	0.7603
960041	AF2-295 C	2.7520	80/20	2.7520
960051	AF2-296 C	2.0815	80/20	2.0815
960271	AF2-318 C	0.9446	80/20	0.9446
WEC	WEC	0.1789	Confirmed LTF	0.1789
LGEE	LGEE	0.2995	Confirmed LTF	0.2995
CPL	CPL	0.0509	Confirmed LTF	0.0509
CBM-W2	CBM-W2	3.8084	Confirmed LTF	3.8084
CBM-W1	CBM-W1	7.7687	Confirmed LTF	7.7687
TVA	TVA	0.5558	Confirmed LTF	0.5558
CBM-S2	CBM-S2	0.9999	Confirmed LTF	0.9999
CBM-S1	CBM-S1	3.5869	Confirmed LTF	3.5869
MEC	MEC	0.8406	Confirmed LTF	0.8406

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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
100482606	235282	01GAR RN	AP	235240	01COLMBGPN	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	163.91	165.96	DC	6.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200608	26PINEY #1	0.5470	80/20	0.5470
200642	26SENECA#1	2.5510	80/20	2.5510
200643	26SENECA#2	2.4093	80/20	2.4093
200644	26SENECA#3	0.2372	80/20	0.2372
200662	26SCRUB GR	1.3466	80/20	1.3466
200828	26HNSMLK 1	0.8468	80/20	0.8468
200829	26HNSMLK 2	0.8468	80/20	0.8468
200830	26HNSMLK 3	0.8468	80/20	0.8468
200831	26HNSMLK 4	0.8468	80/20	0.8468
200832	26HNSMLK 5	0.8468	80/20	0.8468
200849	26LAKVU GN	0.0656	80/20	0.0656
201201	26WRREN CT	0.6553	80/20	0.6553
201477	26Y2-055	1.9323	80/20	1.9323
235030	01MHNG-T155	0.2013	80/20	0.2013
235134	01AL&D6	0.1876	80/20	0.1876
915951	Y3-092 FTIR	79.4500	80/20	79.4500
922932	AB1-082 OP (Suspended)	0.8786	Adder	1.03
935191	AD1-154	1.4444	80/20	1.4444
938951	AE1-123	1.7696	80/20	1.7696
939291	AE1-160 C	1.1259	80/20	1.1259
940861	AE2-074 C	0.6671	Adder	0.78
941191	AE2-113 C	3.0287	Adder	3.56
941321	AE2-126 C	0.5457	Adder	0.64
942811	AE2-299 C	2.3709	80/20	2.3709
942961	AE2-316 C	4.2349	80/20	4.2349
943151	AE2-344 C	5.5745	80/20	5.5745
943351	AF1-006 C	0.9948	80/20	0.9948
944261	AF1-094 C	0.9748	80/20	0.9748
944281	AF1-096 C	1.0638	80/20	1.0638
944301	AF1-098 C	3.5746	80/20	3.5746
944321	AF1-100 C	6.4413	Adder	7.58
944381	AF1-103 O1	1.3330	80/20	1.3330
944391	AF1-104 O1	1.5832	80/20	1.5832
944881	AF1-153 C O1	0.8324	80/20	0.8324
944901	AF1-155 C	0.8386	80/20	0.8386
945021	AF1-167 C	0.9849	80/20	0.9849
945051	AF1-170 C	3.7079	80/20	3.7079
945121	AF1-177	0.3333	80/20	0.3333
945161	AF1-181	0.0343	Adder	0.04
945171	AF1-182	0.1716	Adder	0.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945451	AF1-210 C	1.2859	80/20	1.2859
945551	AF1-220 C	4.4314	Adder	5.21
945751	AF1-240 C O1	0.8666	80/20	0.8666
946111	AF1-276 C	3.2928	Adder	3.87
946121	AF1-277 C	3.2928	Adder	3.87
946131	AF1-278 C	2.6245	Adder	3.09
946221	AF1-287 C	0.9586	80/20	0.9586
946381	AF1-302 C	1.8493	80/20	1.8493
946401	AF1-304 C	5.4132	80/20	5.4132
946421	AF1-306 C	3.0393	80/20	3.0393
946771	AF1-217 C O2	0.9586	80/20	0.9586
957161	AF2-010 C	3.7531	80/20	3.7531
957571	AF2-051 C O1	2.8047	80/20	2.8047
957581	AF2-052 C	0.9313	Adder	2.07
957681	AF2-062 C	3.0814	Adder	6.84
957951	AF2-089 C	0.2925	80/20	0.2925
958031	AF2-097 C	0.2332	80/20	0.2332
958361	AF2-130 C	1.1454	80/20	1.1454
958731	AF2-164 C O1	4.4045	80/20	4.4045
958741	AF2-165 C	1.1075	80/20	1.1075
958751	AF2-166 C	1.1454	80/20	1.1454
958791	AF2-170 C	0.9499	80/20	0.9499
959441	AF2-235 C	0.5319	80/20	0.5319
959461	AF2-237 C	0.4874	80/20	0.4874
959521	AF2-243 C	0.8306	80/20	0.8306
960041	AF2-295 C	0.8386	80/20	0.8386
960321	AF2-323 C O1	2.2485	80/20	2.2485
960891	AF2-380 C	0.6152	80/20	0.6152
NEWTON	NEWTON	0.5072	Confirmed LTF	0.5072
FARMERCITY	FARMERCITY	0.0262	Confirmed LTF	0.0262
G-007A	G-007A	1.4529	Confirmed LTF	1.4529
VFT	VFT	4.0313	Confirmed LTF	4.0313
CALDERWOOD	CALDERWOOD	0.2107	Confirmed LTF	0.2107
PRAIRIE	PRAIRIE	1.1985	Confirmed LTF	1.1985
CHEOAH	CHEOAH	0.2112	Confirmed LTF	0.2112
EDWARDS	EDWARDS	0.1673	Confirmed LTF	0.1673
TILTON	TILTON	0.3018	Confirmed LTF	0.3018
MADISON	MADISON	0.0323	Confirmed LTF	0.0323
GIBSON	GIBSON	0.2593	Confirmed LTF	0.2593
BLUEG	BLUEG	0.8263	Confirmed LTF	0.8263
TRIMBLE	TRIMBLE	0.2655	Confirmed LTF	0.2655
CATAWBA	CATAWBA	0.1326	Confirmed LTF	0.1326

11.6.34 Index 34

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
98651324	235970	01DALE	AP	235248	01SHINGL	AP	1	AP-P1-2-WP-230-322T	single	554.0	112.23	114.0	DC	9.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.2216	80/20	4.2216
200643	26SENECA#2	3.9871	80/20	3.9871
200644	26SENECA#3	0.3926	80/20	0.3926
200649	26PENNTech	1.1811	80/20	1.1811
200665	26SHAWVL 3	6.7547	80/20	6.7547
200666	26SHAWVL 4	6.6783	80/20	6.6783
200715	26SHAWVL 1	4.3117	80/20	4.3117
200722	26SHAWVL 2	4.4003	80/20	4.4003
200887	26ARMNA MT	0.2173	80/20	0.2173
200898	26AA1-106	1.9420	80/20	1.9420
200905	26Q36	0.1743	80/20	0.1743
200913	26SHAW-D	0.1863	80/20	0.1863
200949	26X1-109	9.0048	80/20	9.0048
201201	26WRREN CT	0.8780	80/20	0.8780
201477	26Y2-055	2.5920	80/20	2.5920
203261	26BLOSSBCT	0.2531	80/20	0.2531
203283	26MANOR_T86	0.0141	80/20	0.0141
203349	26Z1-069 C	0.1658	80/20	0.1658
203351	26GROZ1-110	0.3350	80/20	0.3350
203352	26CANZ2-011	0.3350	80/20	0.3350
919201	AA1-144 OP	11.7670	80/20	11.7670
919491	AA2-000	95.5864	80/20	95.5864
922932	AB1-082 OP (Suspended)	1.6171	80/20	1.6171
923442	AB1-160 C	0.0474	80/20	0.0474
930511	AB1-092	3.5097	80/20	3.5097
934801	AD1-108	0.0253	80/20	0.0253
934811	AD1-109	0.0185	80/20	0.0185
936421	AD2-055	7.2258	80/20	7.2258
936991	AD2-133 C	1.8187	80/20	1.8187
939171	AE1-147 C	4.2635	80/20	4.2635
940201	AE2-001 C	3.9641	80/20	3.9641
940861	AE2-074 C	1.2278	80/20	1.2278
941191	AE2-113 C	7.5940	80/20	7.5940
941261	AE2-120 C	3.8698	80/20	3.8698
941271	AE2-121 C	2.3591	80/20	2.3591
941321	AE2-126 C	2.0360	80/20	2.0360
941331	AE2-129 C	1.6385	80/20	1.6385
941351	AE2-131 C	1.6385	80/20	1.6385
941421	AE2-139 C	5.5361	80/20	5.5361
942351	AE2-248 C	1.3366	80/20	1.3366
942491	AE2-262 C	18.3545	80/20	18.3545

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942501	AE2-263 C	17.2532	80/20	17.2532
942961	AE2-316 C	5.2213	80/20	5.2213
943751	AF1-043	21.6772	80/20	21.6772
944001	AF1-068 C O1	0.8367	80/20	0.8367
944181	AF1-086 C O1	1.6572	80/20	1.6572
944311	AF1-099 C	27.8621	80/20	27.8621
944321	AF1-100 C	35.3625	80/20	35.3625
944381	AF1-103 O1	1.7860	80/20	1.7860
944471	AF1-112 C	2.1181	80/20	2.1181
944691	AF1-134 C O1	1.4800	80/20	1.4800
944771	AF1-142 C	44.5794	80/20	44.5794
944841	AF1-149 C	3.8592	80/20	3.8592
944881	AF1-153 C O1	2.1152	80/20	2.1152
944901	AF1-155 C	2.1000	80/20	2.1000
945121	AF1-177	0.4465	80/20	0.4465
945161	AF1-181	0.1821	80/20	0.1821
945171	AF1-182	0.9056	80/20	0.9056
945181	AF1-183	0.2049	80/20	0.2049
945331	AF1-198	0.1931	80/20	0.1931
945491	AF1-214 C	3.8753	80/20	3.8753
945551	AF1-220 C	14.7921	80/20	14.7921
946111	AF1-276 C	5.6776	80/20	5.6776
946121	AF1-277 C	5.6776	80/20	5.6776
946131	AF1-278 C	4.5251	80/20	4.5251
946381	AF1-302 C	2.2801	80/20	2.2801
946421	AF1-306 C	9.2728	80/20	9.2728
957451	AF2-039 C	1.4579	80/20	1.4579
957581	AF2-052 C	3.6193	80/20	3.6193
957681	AF2-062 C	9.8064	80/20	9.8064
957941	AF2-088 C	0.7020	80/20	0.7020
958271	AF2-121 C	1.6385	80/20	1.6385
959061	AF2-197 C O1	2.5853	80/20	2.5853
959471	AF2-238 C	0.8449	80/20	0.8449
959481	AF2-239 C	0.7002	80/20	0.7002
959741	AF2-265 C	0.6055	80/20	0.6055
960041	AF2-295 C	2.1000	80/20	2.1000
960051	AF2-296 C	1.4800	80/20	1.4800
960271	AF2-318 C	0.7570	80/20	0.7570
WEC	WEC	0.1345	Confirmed LTF	0.1345
LGEE	LGEE	0.2248	Confirmed LTF	0.2248
CPL	CPL	0.0364	Confirmed LTF	0.0364
CBM-W2	CBM-W2	2.8583	Confirmed LTF	2.8583
CBM-W1	CBM-W1	5.8547	Confirmed LTF	5.8547
TVA	TVA	0.4172	Confirmed LTF	0.4172
CBM-S2	CBM-S2	0.7398	Confirmed LTF	0.7398
CBM-S1	CBM-S1	2.6838	Confirmed LTF	2.6838
MEC	MEC	0.6308	Confirmed LTF	0.6308

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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
98651761	239036	02PERRY	ATSI	239334	02L.CENTER	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	133.86	134.78	DC	33.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200828	26HNSMLK 1	2.2884	50/50	2.2884
200829	26HNSMLK 2	2.2884	50/50	2.2884
200830	26HNSMLK 3	2.2884	50/50	2.2884
200831	26HNSMLK 4	2.2884	50/50	2.2884
200832	26HNSMLK 5	2.2884	50/50	2.2884
200849	26LAKVU GN	0.3030	50/50	0.3030
201477	26Y2-055	5.9737	Adder	7.03
203999	P-047 E	7.3434	Adder	8.64
239035	02PERRG1 (Deactivation : 31/05/2021)	105.1903	50/50	105.1903
915951	Y3-092 FTIR	401.1700	50/50	401.1700
916202	Z1-069 E	6.2123	Adder	7.31
919491	AA2-000	42.5034	Adder	50.0
922932	AB1-082 OP (Suspended)	2.4197	Adder	2.85
923443	AB1-160 E	1.7750	Adder	2.09
930511	AB1-092	1.5606	Adder	1.84
935191	AD1-154	2.1670	Adder	2.55
936421	AD2-055	3.2130	Adder	3.78
938951	AE1-123	2.3720	Adder	2.79
939291	AE1-160 C	3.1808	50/50	3.1808
939292	AE1-160 E	1.8284	50/50	1.8284
940861	AE2-074 C	1.8373	Adder	2.16
940862	AE2-074 E	2.4185	Adder	2.85
941191	AE2-113 C	7.9405	Adder	9.34
941192	AE2-113 E	8.5494	Adder	10.06
941321	AE2-126 C	1.3016	Adder	1.53
941322	AE2-126 E	0.8677	Adder	1.02
942491	AE2-262 C	4.4774	Adder	5.27
942492	AE2-262 E	3.0088	Adder	3.54
942501	AE2-263 C	4.2087	Adder	4.95
942502	AE2-263 E	2.8100	Adder	3.31
942811	AE2-299 C	10.7050	50/50	10.7050
942812	AE2-299 E	42.8198	50/50	42.8198
942961	AE2-316 C	4.4935	Adder	5.29
942962	AE2-316 E	6.4078	Adder	7.54
943151	AE2-344 C	24.1239	50/50	24.1239
943152	AE2-344 E	16.0826	50/50	16.0826
943351	AF1-006 C	4.6204	50/50	4.6204
943352	AF1-006 E	2.5990	50/50	2.5990
943751	AF1-043	9.6390	Adder	11.34
944261	AF1-094 C	3.7304	50/50	3.7304
944262	AF1-094 E	2.4870	50/50	2.4870

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944281	AF1-096 C	3.0055	50/50	3.0055
944282	AF1-096 E	2.0037	50/50	2.0037
944301	AF1-098 C	15.5957	50/50	15.5957
944302	AF1-098 E	10.3971	50/50	10.3971
944311	AF1-099 C	6.7967	Adder	8.0
944312	AF1-099 E	4.5311	Adder	5.33
944321	AF1-100 C	14.4470	Adder	17.0
944322	AF1-100 E	9.6314	Adder	11.33
944381	AF1-103 O1	4.1230	Adder	4.85
944391	AF1-104 O1	7.6890	50/50	7.6890
944411	AF1-106 O1	1.8280	Adder	2.15
944691	AF1-134 C O1	1.0484	Adder	1.23
944692	AF1-134 E O1	0.6989	Adder	0.82
944771	AF1-142 C	10.8746	Adder	12.79
944772	AF1-142 E	7.2498	Adder	8.53
944881	AF1-153 C O1	1.3361	Adder	1.57
944882	AF1-153 E O1	0.8907	Adder	1.05
944901	AF1-155 C	1.3364	Adder	1.57
944902	AF1-155 E	0.8909	Adder	1.05
945021	AF1-167 C	0.8563	Adder	1.01
945022	AF1-167 E	0.5719	Adder	0.67
945051	AF1-170 C	17.0171	50/50	17.0171
945052	AF1-170 E	11.3448	50/50	11.3448
945121	AF1-177	1.0308	Adder	1.21
945161	AF1-181	0.0770	Adder	0.09
945171	AF1-182	0.3849	Adder	0.45
945181	AF1-183	0.0953	Adder	0.11
945331	AF1-198	0.2317	Adder	0.27
945451	AF1-210 C	0.9320	Adder	1.1
945452	AF1-210 E	0.6214	Adder	0.73
945551	AF1-220 C	10.7563	Adder	12.65
945552	AF1-220 E	7.1748	Adder	8.44
945751	AF1-240 C O1	1.3002	Adder	1.53
945752	AF1-240 E O1	0.8668	Adder	1.02
946111	AF1-276 C	9.7533	Adder	11.47
946112	AF1-276 E	4.8038	Adder	5.65
946121	AF1-277 C	9.7533	Adder	11.47
946122	AF1-277 E	4.8038	Adder	5.65
946131	AF1-278 C	7.7735	Adder	9.15
946132	AF1-278 E	3.8664	Adder	4.55
946211	AF1-286 C O1	0.7403	Adder	0.87
946212	AF1-286 E O1	0.5027	Adder	0.59
946221	AF1-287 C	4.1222	50/50	4.1222
946222	AF1-287 E	2.7482	50/50	2.7482
946381	AF1-302 C	1.9622	Adder	2.31
946382	AF1-302 E	2.6163	Adder	3.08
946401	AF1-304 C	12.1222	Adder	14.26
946402	AF1-304 E	8.0815	Adder	9.51
946421	AF1-306 C	5.6819	Adder	6.68
946422	AF1-306 E	22.7276	Adder	26.74
946771	AF1-217 C O2	4.1222	50/50	4.1222
946772	AF1-217 E O2	2.7482	50/50	2.7482

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957161	AF2-010 C	14.1675	50/50	14.1675
957162	AF2-010 E	9.5477	50/50	9.5477
957451	AF2-039 C	0.4050	Adder	0.9
957452	AF2-039 E	0.2700	Adder	0.6
957571	AF2-051 C O1	10.2145	50/50	10.2145
957572	AF2-051 E O1	5.2620	50/50	5.2620
957581	AF2-052 C	2.5484	Adder	5.66
957582	AF2-052 E	1.2398	Adder	2.75
957681	AF2-062 C	8.9864	Adder	19.95
957682	AF2-062 E	5.9909	Adder	13.3
957941	AF2-088 C	0.1950	Adder	0.43
957942	AF2-088 E	0.1300	Adder	0.29
957951	AF2-089 C	0.8265	50/50	0.8265
957952	AF2-089 E	0.4258	50/50	0.4258
958031	AF2-097 C	1.0829	50/50	1.0829
958032	AF2-097 E	0.7219	50/50	0.7219
958361	AF2-130 C	1.0081	Adder	2.24
958362	AF2-130 E	0.6720	Adder	1.49
958731	AF2-164 C O1	11.9026	50/50	11.9026
958732	AF2-164 E O1	7.9350	50/50	7.9350
958741	AF2-165 C	1.2049	Adder	2.67
958742	AF2-165 E	0.8033	Adder	1.78
958751	AF2-166 C	1.0081	Adder	2.24
958752	AF2-166 E	0.6720	Adder	1.49
958791	AF2-170 C	4.6134	50/50	4.6134
958792	AF2-170 E	3.0756	50/50	3.0756
959441	AF2-235 C	1.5028	50/50	1.5028
959442	AF2-235 E	1.0018	50/50	1.0018
959461	AF2-237 C	1.8652	50/50	1.8652
959462	AF2-237 E	1.2435	50/50	1.2435
959471	AF2-238 C	0.5669	Adder	1.26
959472	AF2-238 E	0.3779	Adder	0.84
959491	AF2-240 C	0.5232	Adder	1.16
959492	AF2-240 E	0.4457	Adder	0.99
959501	AF2-241 C	0.5474	Adder	1.22
959502	AF2-241 E	0.4214	Adder	0.94
959521	AF2-243 C	0.9037	Adder	2.01
959522	AF2-243 E	0.6024	Adder	1.34
959741	AF2-265 C	0.4063	Adder	0.9
959742	AF2-265 E	0.3023	Adder	0.67
959822	AF2-273 E	0.1985	Adder	0.44
960041	AF2-295 C	0.7083	Adder	1.57
960042	AF2-295 E	0.4722	Adder	1.05
960051	AF2-296 C	0.5556	Adder	1.23
960052	AF2-296 E	0.3704	Adder	0.82
960321	AF2-323 C O1	8.1333	50/50	8.1333
960322	AF2-323 E O1	5.4222	50/50	5.4222
961141	AF2-405	0.4844	Adder	1.08
961151	AF2-406	3.6332	Adder	8.06
961201	AF2-411 O1	15.2747	Adder	33.91
961211	AF2-412 O1	6.5786	Adder	14.6
NEWTON	NEWTON	3.1547	Confirmed LTF	3.1547

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
FARMERCITY	FARMERCITY	0.1625	Confirmed LTF	0.1625
G-007A	G-007A	5.9050	Confirmed LTF	5.9050
VFT	VFT	16.2217	Confirmed LTF	16.2217
CALDERWOOD	CALDERWOOD	1.1610	Confirmed LTF	1.1610
PRAIRIE	PRAIRIE	7.3641	Confirmed LTF	7.3641
CHEOAH	CHEOAH	1.1617	Confirmed LTF	1.1617
EDWARDS	EDWARDS	1.0731	Confirmed LTF	1.0731
TILTON	TILTON	1.9076	Confirmed LTF	1.9076
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.6058	Confirmed LTF	1.6058
BLUEG	BLUEG	5.0344	Confirmed LTF	5.0344
TRIMBLE	TRIMBLE	1.6166	Confirmed LTF	1.6166
CATAWBA	CATAWBA	0.6682	Confirmed LTF	0.6682

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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
98651763	239036	02PERRY	ATSI	238684	02EASTLK	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	125.92	126.8	DC	32.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200828	26HNSMLK 1	2.2111	50/50	2.2111
200829	26HNSMLK 2	2.2111	50/50	2.2111
200830	26HNSMLK 3	2.2111	50/50	2.2111
200831	26HNSMLK 4	2.2111	50/50	2.2111
200832	26HNSMLK 5	2.2111	50/50	2.2111
200849	26LAKVU GN	0.2928	50/50	0.2928
201477	26Y2-055	5.7723	Adder	6.79
203999	P-047 E	7.0936	Adder	8.35
239035	02PERRG1 (Deactivation : 31/05/2021)	99.0103	50/50	99.0103
915951	Y3-092 FTIR	387.6900	50/50	387.6900
916202	Z1-069 E	6.0012	Adder	7.06
919491	AA2-000	41.0551	Adder	48.3
922932	AB1-082 OP (Suspended)	2.3377	Adder	2.75
923443	AB1-160 E	1.7146	Adder	2.02
930511	AB1-092	1.5074	Adder	1.77
935191	AD1-154	2.0930	Adder	2.46
936421	AD2-055	3.1035	Adder	3.65
938951	AE1-123	2.2913	Adder	2.7
939291	AE1-160 C	3.0734	50/50	3.0734
939292	AE1-160 E	1.7666	50/50	1.7666
940861	AE2-074 C	1.7750	Adder	2.09
940862	AE2-074 E	2.3365	Adder	2.75
941191	AE2-113 C	7.6713	Adder	9.03
941192	AE2-113 E	8.2595	Adder	9.72
941321	AE2-126 C	1.2575	Adder	1.48
941322	AE2-126 E	0.8383	Adder	0.99
942491	AE2-262 C	4.3248	Adder	5.09
942492	AE2-262 E	2.9063	Adder	3.42
942501	AE2-263 C	4.0653	Adder	4.78
942502	AE2-263 E	2.7142	Adder	3.19
942811	AE2-299 C	10.3446	50/50	10.3446
942812	AE2-299 E	41.3786	50/50	41.3786
942961	AE2-316 C	4.3404	Adder	5.11
942962	AE2-316 E	6.1894	Adder	7.28
943151	AE2-344 C	23.3124	50/50	23.3124
943152	AE2-344 E	15.5416	50/50	15.5416
943351	AF1-006 C	4.4650	50/50	4.4650
943352	AF1-006 E	2.5116	50/50	2.5116
943751	AF1-043	9.3106	Adder	10.95
944261	AF1-094 C	3.6048	50/50	3.6048
944262	AF1-094 E	2.4032	50/50	2.4032

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944281	AF1-096 C	2.9040	50/50	2.9040
944282	AF1-096 E	1.9360	50/50	1.9360
944301	AF1-098 C	15.0706	50/50	15.0706
944302	AF1-098 E	10.0470	50/50	10.0470
944311	AF1-099 C	6.5650	Adder	7.72
944312	AF1-099 E	4.3767	Adder	5.15
944321	AF1-100 C	13.9549	Adder	16.42
944322	AF1-100 E	9.3032	Adder	10.94
944381	AF1-103 O1	3.9839	Adder	4.69
944391	AF1-104 O1	7.4304	50/50	7.4304
944411	AF1-106 O1	1.7660	Adder	2.08
944691	AF1-134 C O1	1.0126	Adder	1.19
944692	AF1-134 E O1	0.6750	Adder	0.79
944771	AF1-142 C	10.5041	Adder	12.36
944772	AF1-142 E	7.0027	Adder	8.24
944881	AF1-153 C O1	1.2907	Adder	1.52
944882	AF1-153 E O1	0.8605	Adder	1.01
944901	AF1-155 C	1.2910	Adder	1.52
944902	AF1-155 E	0.8607	Adder	1.01
945021	AF1-167 C	0.8270	Adder	0.97
945022	AF1-167 E	0.5523	Adder	0.65
945051	AF1-170 C	16.4447	50/50	16.4447
945052	AF1-170 E	10.9632	50/50	10.9632
945121	AF1-177	0.9960	Adder	1.17
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0921	Adder	0.11
945331	AF1-198	0.2238	Adder	0.26
945451	AF1-210 C	0.9001	Adder	1.06
945452	AF1-210 E	0.6001	Adder	0.71
945551	AF1-220 C	10.3912	Adder	12.22
945552	AF1-220 E	6.9313	Adder	8.15
945751	AF1-240 C O1	1.2558	Adder	1.48
945752	AF1-240 E O1	0.8372	Adder	0.98
946111	AF1-276 C	9.4229	Adder	11.09
946112	AF1-276 E	4.6412	Adder	5.46
946121	AF1-277 C	9.4229	Adder	11.09
946122	AF1-277 E	4.6412	Adder	5.46
946131	AF1-278 C	7.5102	Adder	8.84
946132	AF1-278 E	3.7354	Adder	4.39
946211	AF1-286 C O1	0.7152	Adder	0.84
946212	AF1-286 E O1	0.4856	Adder	0.57
946221	AF1-287 C	3.9836	50/50	3.9836
946222	AF1-287 E	2.6558	50/50	2.6558
946381	AF1-302 C	1.8954	Adder	2.23
946382	AF1-302 E	2.5272	Adder	2.97
946401	AF1-304 C	11.7132	Adder	13.78
946402	AF1-304 E	7.8088	Adder	9.19
946421	AF1-306 C	5.4891	Adder	6.46
946422	AF1-306 E	21.9565	Adder	25.83
946771	AF1-217 C O2	3.9836	50/50	3.9836
946772	AF1-217 E O2	2.6558	50/50	2.6558

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957161	AF2-010 C	13.6905	50/50	13.6905
957162	AF2-010 E	9.2262	50/50	9.2262
957451	AF2-039 C	0.3912	Adder	0.87
957452	AF2-039 E	0.2608	Adder	0.58
957571	AF2-051 C O1	9.8703	50/50	9.8703
957572	AF2-051 E O1	5.0847	50/50	5.0847
957581	AF2-052 C	2.4621	Adder	5.47
957582	AF2-052 E	1.1978	Adder	2.66
957681	AF2-062 C	8.6820	Adder	19.27
957682	AF2-062 E	5.7880	Adder	12.85
957941	AF2-088 C	0.1884	Adder	0.42
957942	AF2-088 E	0.1256	Adder	0.28
957951	AF2-089 C	0.7986	50/50	0.7986
957952	AF2-089 E	0.4114	50/50	0.4114
958031	AF2-097 C	1.0465	50/50	1.0465
958032	AF2-097 E	0.6977	50/50	0.6977
958361	AF2-130 C	0.9739	Adder	2.16
958362	AF2-130 E	0.6493	Adder	1.44
958731	AF2-164 C O1	11.5008	50/50	11.5008
958732	AF2-164 E O1	7.6672	50/50	7.6672
958741	AF2-165 C	1.1642	Adder	2.58
958742	AF2-165 E	0.7761	Adder	1.72
958751	AF2-166 C	0.9739	Adder	2.16
958752	AF2-166 E	0.6493	Adder	1.44
958791	AF2-170 C	4.4582	50/50	4.4582
958792	AF2-170 E	2.9722	50/50	2.9722
959441	AF2-235 C	1.4520	50/50	1.4520
959442	AF2-235 E	0.9680	50/50	0.9680
959461	AF2-237 C	1.8024	50/50	1.8024
959462	AF2-237 E	1.2016	50/50	1.2016
959471	AF2-238 C	0.5476	Adder	1.22
959472	AF2-238 E	0.3651	Adder	0.81
959491	AF2-240 C	0.5054	Adder	1.12
959492	AF2-240 E	0.4305	Adder	0.96
959501	AF2-241 C	0.5288	Adder	1.17
959502	AF2-241 E	0.4071	Adder	0.9
959521	AF2-243 C	0.8731	Adder	1.94
959522	AF2-243 E	0.5821	Adder	1.29
959741	AF2-265 C	0.3925	Adder	0.87
959742	AF2-265 E	0.2921	Adder	0.65
959822	AF2-273 E	0.1917	Adder	0.43
960041	AF2-295 C	0.6842	Adder	1.52
960042	AF2-295 E	0.4562	Adder	1.01
960051	AF2-296 C	0.5367	Adder	1.19
960052	AF2-296 E	0.3578	Adder	0.79
960321	AF2-323 C O1	7.8595	50/50	7.8595
960322	AF2-323 E O1	5.2397	50/50	5.2397
961141	AF2-405	0.4680	Adder	1.04
961151	AF2-406	3.5098	Adder	7.79
961201	AF2-411 O1	14.7557	Adder	32.75
961211	AF2-412 O1	6.3549	Adder	14.11
NEWTON	NEWTON	3.0150	Confirmed LTF	3.0150

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
FARMERCITY	FARMERCITY	0.1553	Confirmed LTF	0.1553
G-007A	G-007A	5.6989	Confirmed LTF	5.6989
VFT	VFT	15.6541	Confirmed LTF	15.6541
CALDERWOOD	CALDERWOOD	1.1108	Confirmed LTF	1.1108
PRAIRIE	PRAIRIE	7.0387	Confirmed LTF	7.0387
CHEOAH	CHEOAH	1.1116	Confirmed LTF	1.1116
EDWARDS	EDWARDS	1.0251	Confirmed LTF	1.0251
TILTON	TILTON	1.8232	Confirmed LTF	1.8232
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.5354	Confirmed LTF	1.5354
BLUEG	BLUEG	4.8157	Confirmed LTF	4.8157
TRIMBLE	TRIMBLE	1.5460	Confirmed LTF	1.5460
CATAWBA	CATAWBA	0.6395	Confirmed LTF	0.6395

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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
100955701	941190	AE2-113 TAP	PENELEC	200582	26RIDGWAY	PENELEC	1	PN-P7-1-PN-230-002A	tower	160.0	130.95	147.41	DC	26.34

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
203349	26Z1-069 C	0.2583	50/50	0.2583
235007	AC1-025 BAT	0.0873	Merchant Transmission	0.0873
236828	01GRAYMONT	-0.2056	Adder	-0.24
916202	Z1-069 E	6.3827	50/50	6.3827
922932	AB1-082 OP (Suspended)	3.4087	50/50	3.4087
923442	AB1-160 C	0.0738	50/50	0.0738
923443	AB1-160 E	1.8236	50/50	1.8236
939171	AE1-147 C	-0.6204	Adder	-0.73
940681	AE2-055 C (Suspended)	-0.5873	Adder	-0.69
940861	AE2-074 C	2.5882	50/50	2.5882
940862	AE2-074 E	3.4070	50/50	3.4070
941191	AE2-113 C	29.7287	50/50	29.7287
941192	AE2-113 E	32.0083	50/50	32.0083
944841	AF1-149 C	-0.6171	Adder	-0.73
944842	AF1-149 E	-0.4114	Adder	-0.48
946111	AF1-276 C	8.7663	50/50	8.7663
946112	AF1-276 E	4.3177	50/50	4.3177
946121	AF1-277 C	8.7663	50/50	8.7663
946122	AF1-277 E	4.3177	50/50	4.3177
946131	AF1-278 C	6.9869	50/50	6.9869
946132	AF1-278 E	3.4751	50/50	3.4751
946423	AF1-306 BAT	27.4626	50/50	27.4626
957581	AF2-052 C	10.7807	50/50	10.7807
957582	AF2-052 E	5.2447	50/50	5.2447
957681	AF2-062 C	15.8040	50/50	15.8040
957682	AF2-062 E	10.5360	50/50	10.5360
960023	AF2-293 BAT	0.0376	Merchant Transmission	0.0376
WEC	WEC	0.0261	Confirmed LTF	0.0261
LGEE	LGEE	0.0439	Confirmed LTF	0.0439
CPL	CPL	0.0185	Confirmed LTF	0.0185
CBM-W2	CBM-W2	0.5815	Confirmed LTF	0.5815
CBM-W1	CBM-W1	1.1259	Confirmed LTF	1.1259
TVA	TVA	0.0882	Confirmed LTF	0.0882
O-066	O-066	0.8131	Confirmed LTF	0.8131
CBM-S2	CBM-S2	0.2254	Confirmed LTF	0.2254
CBM-S1	CBM-S1	0.5623	Confirmed LTF	0.5623
G-007	G-007	0.1331	Confirmed LTF	0.1331
MEC	MEC	0.1239	Confirmed LTF	0.1239

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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
98651351	942490	AE2-262 TAP	AP	235219	01MILES	AP	1	AP-P1-2-WP-230-322T	single	688.0	111.48	113.01	DC	10.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.5219	80/20	4.5219
200643	26SENECA#2	4.2707	80/20	4.2707
200644	26SENECA#3	0.4205	80/20	0.4205
200649	26PENNTech	1.2652	80/20	1.2652
200665	26SHAWVL 3	7.2359	80/20	7.2359
200666	26SHAWVL 4	7.1538	80/20	7.1538
200715	26SHAWVL 1	4.6188	80/20	4.6188
200722	26SHAWVL 2	4.7136	80/20	4.7136
200887	26ARMNA MT	0.2328	80/20	0.2328
200898	26AA1-106	2.0803	80/20	2.0803
200905	26Q36	0.1867	80/20	0.1867
200913	26SHAW-D	0.1996	80/20	0.1996
200949	26X1-109	9.6461	80/20	9.6461
201201	26WRREN CT	0.9405	80/20	0.9405
201477	26Y2-055	2.7765	80/20	2.7765
203261	26BLOSSBCT	0.2711	80/20	0.2711
203283	26MANOR_T86	0.0152	80/20	0.0152
203349	26Z1-069 C	0.1776	80/20	0.1776
203351	26GROZ1-110	0.3588	80/20	0.3588
203352	26CANZ2-011	0.3588	80/20	0.3588
919201	AA1-144 OP	12.6048	80/20	12.6048
919491	AA2-000	102.3924	80/20	102.3924
922932	AB1-082 OP (Suspended)	1.7323	80/20	1.7323
923442	AB1-160 C	0.0507	80/20	0.0507
930511	AB1-092	3.7595	80/20	3.7595
934801	AD1-108	0.0270	80/20	0.0270
934811	AD1-109	0.0198	80/20	0.0198
936421	AD2-055	7.7402	80/20	7.7402
936991	AD2-133 C	1.9481	80/20	1.9481
939171	AE1-147 C	-4.6713	Adder	-5.5
940681	AE2-055 C (Suspended)	-4.1838	Adder	-4.92
940861	AE2-074 C	1.3153	80/20	1.3153
941191	AE2-113 C	8.1342	80/20	8.1342
941321	AE2-126 C	2.1811	80/20	2.1811
941331	AE2-129 C	1.7551	80/20	1.7551
941351	AE2-131 C	1.7551	80/20	1.7551
941421	AE2-139 C	5.9305	80/20	5.9305
942491	AE2-262 C	19.6615	80/20	19.6615
942501	AE2-263 C	18.4818	80/20	18.4818
942961	AE2-316 C	5.5931	80/20	5.5931
943751	AF1-043	23.2207	80/20	23.2207

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944181	AF1-086 C O1	1.7753	80/20	1.7753
944311	AF1-099 C	29.8462	80/20	29.8462
944321	AF1-100 C	37.8810	80/20	37.8810
944381	AF1-103 O1	1.9132	80/20	1.9132
944691	AF1-134 C O1	1.5853	80/20	1.5853
944771	AF1-142 C	47.7539	80/20	47.7539
944841	AF1-149 C	-4.6230	Adder	-5.44
944881	AF1-153 C O1	2.2658	80/20	2.2658
944901	AF1-155 C	2.2495	80/20	2.2495
945121	AF1-177	0.4783	80/20	0.4783
945161	AF1-181	0.1951	80/20	0.1951
945171	AF1-182	0.9701	80/20	0.9701
945181	AF1-183	0.2195	80/20	0.2195
945331	AF1-198	0.2068	80/20	0.2068
945551	AF1-220 C	15.8449	80/20	15.8449
946111	AF1-276 C	6.0823	80/20	6.0823
946121	AF1-277 C	6.0823	80/20	6.0823
946131	AF1-278 C	4.8477	80/20	4.8477
946381	AF1-302 C	2.4424	80/20	2.4424
946421	AF1-306 C	9.9330	80/20	9.9330
957451	AF2-039 C	1.5618	80/20	1.5618
957581	AF2-052 C	3.8769	80/20	3.8769
957681	AF2-062 C	10.5048	80/20	10.5048
957941	AF2-088 C	0.7520	80/20	0.7520
958271	AF2-121 C	1.7551	80/20	1.7551
959061	AF2-197 C O1	2.7692	80/20	2.7692
959471	AF2-238 C	0.9050	80/20	0.9050
959481	AF2-239 C	0.7500	80/20	0.7500
959741	AF2-265 C	0.6486	80/20	0.6486
960041	AF2-295 C	2.2495	80/20	2.2495
960051	AF2-296 C	1.5853	80/20	1.5853
960271	AF2-318 C	0.8108	80/20	0.8108
WEC	WEC	0.1436	Confirmed LTF	0.1436
LGEE	LGEE	0.2408	Confirmed LTF	0.2408
CPL	CPL	0.0390	Confirmed LTF	0.0390
CBM-W2	CBM-W2	3.0549	Confirmed LTF	3.0549
CBM-W1	CBM-W1	6.2550	Confirmed LTF	6.2550
TVA	TVA	0.4452	Confirmed LTF	0.4452
CBM-S2	CBM-S2	0.7919	Confirmed LTF	0.7919
CBM-S1	CBM-S1	2.8712	Confirmed LTF	2.8712
MEC	MEC	0.6753	Confirmed LTF	0.6753

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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
100954474	944300	AF1-098 TAP	PENELEC	200927	26FOURMILE	PENELEC	1	PN-P2-2-PN-230-009	bus	245.0	118.57	121.59	DC	16.36

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	5.6727	50/50	5.6727
200643	26SENECA#2	5.3575	50/50	5.3575
200644	26SENECA#3	0.5275	50/50	0.5275
201201	26WRREN CT	2.2484	50/50	2.2484
201477	26Y2-055	6.5946	50/50	6.5946
922932	AB1-082 OP (Suspended)	0.9684	Adder	1.14
940861	AE2-074 C	0.7353	Adder	0.87
940862	AE2-074 E	0.9679	Adder	1.14
941191	AE2-113 C	3.7029	Adder	4.36
941192	AE2-113 E	3.9868	Adder	4.69
941321	AE2-126 C	0.5849	Adder	0.69
941322	AE2-126 E	0.3899	Adder	0.46
942813	AE2-299 BAT	10.8464	Merchant Transmission	10.8464
944301	AF1-098 C	37.3018	50/50	37.3018
944302	AF1-098 E	24.8678	50/50	24.8678
944381	AF1-103 O1	4.5736	50/50	4.5736
944392	AF1-104 BAT	1.0258	Merchant Transmission	1.0258
944881	AF1-153 C O1	0.5324	Adder	0.63
944882	AF1-153 E O1	0.3550	Adder	0.42
944901	AF1-155 C	0.5287	Adder	0.62
944902	AF1-155 E	0.3524	Adder	0.41
945121	AF1-177	1.1434	50/50	1.1434
945551	AF1-220 C	5.1902	Adder	6.11
945552	AF1-220 E	3.4620	Adder	4.07
946111	AF1-276 C	5.0999	Adder	6.0
946112	AF1-276 E	2.5119	Adder	2.96
946121	AF1-277 C	5.0999	Adder	6.0
946122	AF1-277 E	2.5119	Adder	2.96
946131	AF1-278 C	4.0647	Adder	4.78
946132	AF1-278 E	2.0217	Adder	2.38
946421	AF1-306 C	2.6719	Adder	3.14
946422	AF1-306 E	10.6875	Adder	12.57
957581	AF2-052 C	1.1496	Adder	2.55
957582	AF2-052 E	0.5593	Adder	1.24
957681	AF2-062 C	4.4210	Adder	9.81
957682	AF2-062 E	2.9474	Adder	6.54
960041	AF2-295 C	0.2802	Adder	0.62
960042	AF2-295 E	0.1868	Adder	0.41
NEWTON	NEWTON	0.4760	Confirmed LTF	0.4760
FARMERCITY	FARMERCITY	0.0245	Confirmed LTF	0.0245
G-007A	G-007A	1.3282	Confirmed LTF	1.3282

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
VFT	VFT	3.6507	Confirmed LTF	3.6507
CALDERWOOD	CALDERWOOD	0.1730	Confirmed LTF	0.1730
PRAIRIE	PRAIRIE	1.1107	Confirmed LTF	1.1107
CHEOAH	CHEOAH	0.1727	Confirmed LTF	0.1727
EDWARDS	EDWARDS	0.1620	Confirmed LTF	0.1620
TILTON	TILTON	0.2885	Confirmed LTF	0.2885
MADISON	MADISON	0.0181	Confirmed LTF	0.0181
GIBSON	GIBSON	0.2430	Confirmed LTF	0.2430
BLUEG	BLUEG	0.7621	Confirmed LTF	0.7621
TRIMBLE	TRIMBLE	0.2449	Confirmed LTF	0.2449
CATAWBA	CATAWBA	0.0973	Confirmed LTF	0.0973

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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
100954815	945550	AF1-220 TAP	PENELEC	200711	26WHETSTON	PENELEC	1	AP-P2-3-WP-230-708C	breaker	239.0	109.72	112.88	DC	16.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.5550	50/50	4.5550
200643	26SENECA#2	4.3020	50/50	4.3020
200644	26SENECA#3	0.4236	50/50	0.4236
200649	26PENNTech	2.0176	50/50	2.0176
201477	26Y2-055	2.2814	Adder	2.68
235007	AC1-025 BAT	0.0844	Merchant Transmission	0.0844
236828	01GRAYMONT	-0.1962	Adder	-0.23
916202	Z1-069 E	2.5052	Adder	2.95
922932	AB1-082 OP (Suspended)	1.3525	Adder	1.59
923443	AB1-160 E	0.7158	Adder	0.84
939171	AE1-147 C	-0.5911	Adder	-0.7
940681	AE2-055 C (Suspended)	-0.5693	Adder	-0.67
940861	AE2-074 C	1.0270	Adder	1.21
940862	AE2-074 E	1.3518	Adder	1.59
941191	AE2-113 C	11.3212	50/50	11.3212
941192	AE2-113 E	12.1893	50/50	12.1893
944381	AF1-103 O1	1.5715	Adder	1.85
944841	AF1-149 C	-0.5889	Adder	-0.69
944842	AF1-149 E	-0.3926	Adder	-0.46
945121	AF1-177	0.3929	Adder	0.46
945551	AF1-220 C	31.5706	50/50	31.5706
945552	AF1-220 E	21.0587	50/50	21.0587
946111	AF1-276 C	4.9803	Adder	5.86
946112	AF1-276 E	2.4530	Adder	2.89
946121	AF1-277 C	4.9803	Adder	5.86
946122	AF1-277 E	2.4530	Adder	2.89
946131	AF1-278 C	3.9694	Adder	4.67
946132	AF1-278 E	1.9743	Adder	2.32
946421	AF1-306 C	9.8220	50/50	9.8220
946422	AF1-306 E	39.2882	50/50	39.2882
957581	AF2-052 C	4.6143	50/50	4.6143
957582	AF2-052 E	2.2448	50/50	2.2448
957681	AF2-062 C	4.5183	Adder	10.03
957682	AF2-062 E	3.0122	Adder	6.69
959803	AF2-271 BAT	0.0610	Merchant Transmission	0.0610
960023	AF2-293 BAT	0.0358	Merchant Transmission	0.0358
WEC	WEC	0.0646	Confirmed LTF	0.0646
LGEE	LGEE	0.1073	Confirmed LTF	0.1073
CPL	CPL	0.0417	Confirmed LTF	0.0417
CBM-W2	CBM-W2	1.4087	Confirmed LTF	1.4087
CBM-W1	CBM-W1	2.8398	Confirmed LTF	2.8398

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
TVA	TVA	0.2128	Confirmed LTF	0.2128
O-066	O-066	2.4864	Confirmed LTF	2.4864
CBM-S2	CBM-S2	0.5144	Confirmed LTF	0.5144
CBM-S1	CBM-S1	1.3462	Confirmed LTF	1.3462
G-007	G-007	0.3838	Confirmed LTF	0.3838
MEC	MEC	0.3051	Confirmed LTF	0.3051

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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
99088503	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	133.79	140.65	DC	56.88

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O1	2.6844	Adder	5.96
957572	AF2-051 E O1	1.3829	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O1	5.4038	Adder	12.0
958732	AF2-164 E O1	3.6026	Adder	8.0
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O1	3.2132	Adder	7.13
959062	AF2-197 E O1	4.8199	Adder	10.7
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1565	Adder	4.79
960322	AF2-323 E O1	1.4376	Adder	3.19
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O1	87.8850	50/50	87.8850
961211	AF2-412 O1	34.1484	50/50	34.1484
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

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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
99088433	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	153.1	160.13	DC	57.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O1	2.6870	Adder	5.96
957572	AF2-051 E O1	1.3842	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O1	5.4157	Adder	12.02
958732	AF2-164 E O1	3.6105	Adder	8.01
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O1	3.2158	Adder	7.14
959062	AF2-197 E O1	4.8237	Adder	10.71
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1585	Adder	4.79
960322	AF2-323 E O1	1.4390	Adder	3.19
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O1	88.1220	50/50	88.1220
961211	AF2-412 O1	34.2290	50/50	34.2290
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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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
99088533	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	137.61	139.58	DC	27.27

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O1	2.2427	50/50	2.2427
957002	AF2-001 E O1	1.4951	50/50	1.4951
957011	AF2-002 C O1	1.1213	50/50	1.1213
957012	AF2-002 E O1	0.7476	50/50	0.7476
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O1	1.3230	Adder	2.94
957572	AF2-051 E O1	0.6815	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O1	2.4513	Adder	5.44
958732	AF2-164 E O1	1.6342	Adder	3.63
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O1	1.6039	Adder	3.56
959062	AF2-197 E O1	2.4058	Adder	5.34
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O1	1.0633	Adder	2.36
960322	AF2-323 E O1	0.7088	Adder	1.57
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O1	0.9489	Adder	2.11
960452	AF2-336 E O1	0.6326	Adder	1.4
960461	AF2-337 C O1	0.9489	Adder	2.11
960462	AF2-337 E O1	0.6326	Adder	1.4
960471	AF2-338 C O1	0.9489	Adder	2.11
960472	AF2-338 E O1	0.6326	Adder	1.4
960481	AF2-339 C O1	0.9489	Adder	2.11
960482	AF2-339 E O1	0.6326	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O1	17.8114	Adder	39.54
961211	AF2-412 O1	7.1197	Adder	15.8
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

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
AA1-077	Lackawanna 230kV	In Service
AA1-082	E. Towanda 230kV	In Service
AA1-106	Grover II 34.5kV	Withdrawn
AA1-144	East Towanda-Grover 230kV	Engineering and Procurement
AA2-000	N/A	N/A
AA2-132	Thompson 34.5kV	Suspended
AA2-133	Wyalusing 34.5kV	In Service
AB1-082	Potter 46kV	Suspended
AB1-092	Moshannon-East Towanda 230kV	Active
AB1-160	Gold-Sabinsville 115kV	In Service
AB2-019	Erie West 345kV	Engineering and Procurement
AC1-025	Dale Summit	In Service
AD1-108	Grover 34 kV	In Service
AD1-109	Canton 34.5 kV	In Service
AD1-110	North Meshoppen 34.5 kV	In Service
AD1-142	Milan 34.5 kV	In Service
AD1-154	Timblin 34.5 kV	Active
AD2-055	Moshannon-East Towanda 230 kV	Active
AD2-133	Eagle Valley 115kV	Active
AE1-051	East Carbondale-Lackawanna 69kV	Active
AE1-053	Meyersdale North	Active
AE1-071	Shade Gap-Roxbury 115 kV	Active
AE1-116	Somerset Windpower 23 kV	Active
AE1-123	Emlenton 34.5 kV	Engineering and Procurement
AE1-128	Bedford North-Wills Mountain 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	Active
AE2-129	Philipsburg-Clarence 34.5 kV	Active
AE2-131	Philipsburg-Karthauss 34.5	Active
AE2-139	East Towanda-Grover 230 kV	Active

Queue Number	Project Name	Status
AE2-224	Bearrock-Johnstown 230 kV	Active
AE2-248	Fillmore-Thompson Farm 46 kV	Active
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
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	Active
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	Active
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
AF1-149	Graymont-Zion 46 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
AF1-210	Burma 23 kV	Engineering and Procurement
AF1-214	Nittany-Zion 46 kV	Active
AF1-217	Edinboro -Cambridge Springs 34.5 kV	Active
AF1-220	Ridgway-Whetstone 115 kV	Active
AF1-232	Allegheny-Somerset 115 kV	Active
AF1-240	Timblin 34.5 kV	Active
AF1-272	Lucerne 115 kV	Active
AF1-273	Allegheny 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

Queue Number	Project Name	Status
AF1-306	Squab Hollow 230 kV	Active
AF1-307	Seward-Jackson Rd 115 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	Active
AF2-050	Bearrock-Johnstown 230 kV	Active
AF2-051	Geneva 115 kV	Active
AF2-052	Farmers Valley-Ridgeway 115 kV	Active
AF2-062	Lewis Run-Pierce Brook 230 kV	Active
AF2-087	East Altoona-Pinecroft 12.47 kV	Active
AF2-088	Shawville-Clearfield 34.5 kV II	Active
AF2-089	Titusville 34.5 kV	Active
AF2-092	Snake Spring-Bedford Area 23 kV	Active
AF2-097	Fairview East 34.5 kV II	Active
AF2-104	Somerset 23 kV	Active
AF2-121	Philipsburg-Shawville 34.5 kV	Active
AF2-130	Wolfs Corners 34.5 kV	Active
AF2-135	Rockwood-Confluence 23 kV	Active
AF2-141	Lick Run 115 kV	Active
AF2-146	Hill Valley-Valley REC 46 kV	Active
AF2-147	McVeytown-Strodes Mill 46 kV	Active
AF2-148	Shade Gap-Three Springs KTS 23 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
AF2-170	Erie West-Springboro 34.5 kV	Active
AF2-197	East Towanda 115 kV	Active
AF2-221	Scalp Level 22.9 kV	Active
AF2-231	Belleville 12.47 kV	Active
AF2-235	Titusville-Oil Creek 34.5 kV	Active
AF2-237	Union City-Cambridge Springs 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	Active
AF2-271	Pemberton-Sinking Valley 12.47 kV	Active
AF2-273	Sligo 25 kV	Active
AF2-282	Edelle 12.47 kV	Active
AF2-283	Greenfield 12.47 kV	Active
AF2-293	Beech Creek 46 kV	Active
AF2-294	Thompson 34.5 kV	Active
AF2-295	Wilcox-Paper City 46 kV	Active
AF2-296	Madera 34.5 kV	Active
AF2-312	Carrolltown-Patton 46 kV	Active
AF2-318	East Towanda-New Albany 34.5 kV	Active
AF2-323	Geneva-Franklin Tap 115 kV	Active

Queue Number	Project Name	Status
AF2-330	Claysburg-Summit 115 kV	Active
AF2-336	Snake Spring 115 kV	Active
AF2-337	Snake Spring 115 kV	Active
AF2-338	Snake Spring-Saxton 115 kV	Active
AF2-339	Snake Spring-Saxton 115 kV	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	Active
AF2-412	Mainesburg 115 kV	Active
AF2-436	Wyalusing 34.5 kV II	Active
AF2-437	Oxbow 34.5 kV III	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
Y1-047	North Meshoppen 34.5kV	In Service
Y2-042	Oxbow 25kV	In Service
Y2-055	Elm Street 34.5kV	Withdrawn
Y3-092	Erie West 345kV	Engineering and Procurement
Z1-038	Florey Knob 34.5kV	Withdrawn
Z1-069	Gold-Sabinsville 115kV	In Service
Z1-091	Lenox 34kV	Withdrawn
Z1-092	Milan 34kV	In Service
Z1-110	Grover 34kV	In Service
Z2-011	Canton 34.5kV	In Service
Z2-104	Oxbow 25kV II	In Service
Z2-108	Meyersdale North 115kV	In Service

11.8 Contingency Descriptions²

Contingency Name	Contingency Definition
PN-P2-3-PN-345-003A	CONTINGENCY 'PN-P2-3-PN-345-003A' /* WAYNE 345KV STUCK BREAKER DISCONNECT BUS 200595 /* 26WAYNE 345 END
PL_P21_000305	CONTINGENCY 'PL_P21_000305' /* JUNI-DAUP 230KV PATHEND
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_3-PN-230-0252-C	CONTINGENCY 'PN-P2_3-PN-230-0252-C' /* SHELOCTA 230 KV STUCK BREAKER (HOMER CITY/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
200711 26WHETSTON 115 945550 AF1-220 TAP 115 1	CONTINGENCY '200711 26WHETSTON 115 945550 AF1-220 TAP 115 1' OPEN BRANCH FROM BUS 200711 TO BUS 945550 CKT 1 END
PN-P2_3-PN-230-0252-A	CONTINGENCY 'PN-P2_3-PN-230-0252-A' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
AP-P1-2-WP-230-002	CONTINGENCY 'AP-P1-2-WP-230-002' /* ELKO - SQUAB HOLLOW 230KV DISCONNECT BRANCH FROM BUS 235175 TO BUS 235971 CKT 1 /* 01ELKO 230 01SQUABHLLW 230 END

Contingency Name	Contingency Definition
AP-P1-2-WP-230-324T_FSA_A-B	CONTINGENCY 'AP-P1-2-WP-230-324T_FSA_A-B' /* MOSHANNON-MARSHALL 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235220 TO BUS 200908 CKT 1 /* 01MOSHAN 230 26CHAPMAN+ 230 DISCONNECT BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 /* 26CHAPMAN+ 230 AA2-000 TAP 230 END
PN-P1-2-PN-230-012A-A	CONTINGENCY 'PN-P1-2-PN-230-012A-A' /* QUEUE AA1-144 - MARSHALL 230KV DISCONNECT BRANCH FROM BUS 200857 TO BUS 200701 CKT 1 /* 26MARSHALL 230 26GROVER 230 DISCONNECT BRANCH FROM BUS 200701 TO BUS 941420 CKT 1 /* 26GROVER 230 AE2- 139 TAP 230 DISCONNECT BRANCH FROM BUS 200701 TO BUS 200702 CKT 1 /* 26GROVER 230 26GROVER 35 END
AP-P1-2-WP-230-005A	CONTINGENCY 'AP-P1-2-WP-230-005A' /* MILESBERG - QUEUE AE2-262 230KV DISCONNECT BRANCH FROM BUS 235220 TO BUS 942490 CKT 1 /* 01MOSHAN 230 AE2-262 TAP 230 END
PL_P12_000196	CONTINGENCY 'PL_P12_000196' /* JUNI-DAUP 230KV LINE DISCONNECT BRANCH FROM BUS 207955 TO BUS 208005 CKT 1 /* DAUP TR2-JUNI BU2 230 DISCONNECT BRANCH FROM BUS 207955 TO BUS 209866 CKT 2 /* DAUP TR2-DAUP 230-69 END
AP-P1-2-WP-230-005B	CONTINGENCY 'AP-P1-2-WP-230-005B' /* QUEUE AE2-262 - MOSHANNON 230KV DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES B 230 END
PN-P2_3-PN-230-0252-B	CONTINGENCY 'PN-P2_3-PN-230-0252-B' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/HOMER CITY) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 END

Contingency Name	Contingency Definition
PN-P2-3-PN-115-55A	CONTINGENCY 'PN-P2-3-PN-115-55A' /* 683 DISCONNECT BRANCH FROM BUS 200520 TO BUS 938380 CKT 1 /* 26ROXBURY 115 AE1-071 TAP 115 DISCONNECT BRANCH FROM BUS 200860 TO BUS 200520 CKT 3 /* 26ROXB SB2 23 26ROXBURY 115 DISCONNECT BRANCH FROM BUS 961480 TO BUS 200520 CKT 1 /* AF2-439 TAP 115 26ROXBURY 115 DISCONNECT BRANCH FROM BUS 200532 TO BUS 200520 CKT 2 /* 26ROXBURY 138 26ROXBURY 115 DISCONNECT BRANCH FROM BUS 200520 TO BUS 200554 CKT 1 /* 26ROXBURY 115 26ROXB SB1 23 END
PN-P2-2-PN-230-009	CONTINGENCY 'PN-P2-2-PN-230-009' /* ERIE SOUTH 230KV TIE BUS DISCONNECT BRANCH FROM BUS 200918 TO BUS 200819 CKT ZB /* 26ERIE S TIE230 26ERIE SE 230 DISCONNECT BRANCH FROM BUS 200918 TO BUS 200568 CKT ZB /* 26ERIE S TIE230 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200918 TO BUS 200811 CKT 1 /* 26ERIE S TIE230 26WARREN 230 DISCONNECT BUS 200918 /* 26ERIE S TIE230 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-P1-2-PN-115-094-A	CONTINGENCY 'PN-P1-2-PN-115-094-A' /* ROXBURY - SHADE GAP 115KV DISCONNECT BRANCH FROM BUS 200520 TO BUS 938380 CKT 1 /* 26ROXBURY 115 AE1-071 TAP 115 END
ATSI-P7-1-CEI-345-016	CONTINGENCY 'ATSI-P7-1-CEI-345-016' /* PERRY-NORTHFIELD 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

Contingency Name	Contingency Definition
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 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
PN-P1-2-PN-230-004	CONTINGENCY 'PN-P1-2-PN-230-004' /* GLADE - WARREN 230KV DISCONNECT BRANCH FROM BUS 200811 TO BUS 200593 CKT 1 /* 26WARREN 230 26GLADE 230 END
AP-P2-3-WP-230-447	CONTINGENCY 'AP-P2-3-WP-230-447' /* 456 DISCONNECT BRANCH FROM BUS 235971 TO BUS 235175 CKT 1 /* 01SQUABHLLW 230 01ELKO 230 DISCONNECT BRANCH FROM BUS 235174 TO BUS 235175 CKT 1 /* 01ELKO 138 01ELKO 230 DISCONNECT BRANCH FROM BUS 235157 TO BUS 235159 CKT 1 /* 01CARB 138 01CARB J 138 DISCONNECT BRANCH FROM BUS 235159 TO BUS 235174 CKT 1 /* 01CARB J 138 01ELKO 138 DISCONNECT BRANCH FROM BUS 235159 TO BUS 235286 CKT 1 /* 01CARB J 138 01WILLAM 138 END
PN-P1-2-PN-115-100-A	CONTINGENCY 'PN-P1-2-PN-115-100-A' /* CORRY EAST - FOUR MILE JCT. 115KV LINE DISCONNECT BRANCH FROM BUS 200927 TO BUS 944300 CKT 1 /* 26FOURMILE 115 AF1-098 TAP 115 END
AP-P2-3-WP-230-708C	CONTINGENCY 'AP-P2-3-WP-230-708C' /* SQUAB HOLLOW 230 STK BKR - NEW3 DISCONNECT BRANCH FROM BUS 235175 TO BUS 235971 CKT 1 /* 01ELKO 230 01SQUABHLLW 230 DISCONNECT BRANCH FROM BUS 235971 TO BUS 235972 CKT 1 /* 01SQUABHLLW 230- 138 TR END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-9I	CONTINGENCY 'PN-P2-3-PN-230-9I' /* 579 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 DISCONNECT BRANCH FROM BUS 200807 TO BUS 200808 CKT 1 /* 26PIERC230 230 26PIERC138 138 DISCONNECT BRANCH FROM BUS 200808 TO BUS 200809 CKT 1 /* 26PIERC138 138 26SITHE 138 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202640 CKT N/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYN 23.00 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 END
PN-P2-3-PN-115-23D	CONTINGENCY 'PN-P2-3-PN-115-23D' /* 622 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200568 CKT 6 /* 26ERIE SO. 115 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200600 CKT 5 /* 26ERIE SO. 230 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200571 CKT 1 /* 26ERIE SO. 115 26UNION CY 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200572 CKT 1 /* 26ERIE SO. 115 26EDINB S. 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200850 CKT 1 /* 26ERIE SO. 115 26GESG TAP 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200589 CKT 1 /* 26ERIE SO. 115 26FR RD. W 115 DISCONNECT BRANCH FROM BUS 200589 TO BUS 200635 CKT 5 /* 26FR RD. W 115 26FR RD W. 35 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 END
PN-P1-2-PN-230-013A	CONTINGENCY 'PN-P1-2-PN-230-013A' /* EAST TOWANDA - NORTH MESHOPPEN 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 200924 CKT 1 /* 26E.TWANDA 230 26CANYON 230 DISCONNECT BRANCH FROM BUS 200924 TO BUS 200706 CKT 1 /* 26CANYON 230 26N.MESHPN 230 END
AP-P1-2-WP-230-322T	CONTINGENCY 'AP-P1-2-WP-230-322T' /* SHINGLETOWN-SHAWVILLE 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
PN-P1-2-PN-230-028-A	CONTINGENCY 'PN-P1-2-PN-230-028-A' /* LEWIS RUN - PIERCE BROOK 230KV DISCONNECT BRANCH FROM BUS 200704 TO BUS 946130 CKT 1 /* 26LEWIS RN 230 AF1-278 TAP 230 END

Contingency Name	Contingency Definition
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
PN-P2-3-PN-230-9E	CONTINGENCY 'PN-P2-3-PN-230-9E' /* 575 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202641 CKT S/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYS 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200837 CKT 1 /* 26HOMER CT 230 26HOMER C1 20 REMOVE MACHINE 1 FROM BUS 200837 /* 26HOMER C1 20 END
PN-P1-2-PN-230-003	CONTINGENCY 'PN-P1-2-PN-230-003' /* ERIE SOUTH - WARREN 230KV DISCONNECT BRANCH FROM BUS 200918 TO BUS 200811 CKT 1 /* 26ERIE S TIE230 26WARREN 230 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-230-003A	CONTINGENCY 'PN-P1-3-PN-230-003A' /* HOMER CITY NORTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 END
PN-P1-2-PN-115-027-B	CONTINGENCY 'PN-P1-2-PN-115-027-B' /* RIDGWAY - WHETSTONE 115KV DISCONNECT BRANCH FROM BUS 945550 TO BUS 200711 CKT 1 /* AF1-220 TAP 115 26WHETSTON 115 DISCONNECT BRANCH FROM BUS 200711 TO BUS 200596 CKT 1 /* 26WHETSTON 115 26WHETSTON 35 END
PN-P1-3-PN-230-004A	CONTINGENCY 'PN-P1-3-PN-230-004A' /* HOMER CITY SOUTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202641 CKT S/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYS 23.00 END

Contingency Name	Contingency Definition
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
PN-P1-3-PN-500-001AT	CONTINGENCY 'PN-P1-3-PN-500-001AT' /* KEYSTONE #3 500/230 KV XFMR OPEN BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500.00 26KEYSTONE 230.00 END
AP-P1-3-WP-230-325T	CONTINGENCY 'AP-P1-3-WP-230-325T' /* SHINGLETOWN #81 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 81 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
Base Case	
200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 END
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
AP-P2-3-WP-230-445	CONTINGENCY 'AP-P2-3-WP-230-445' /* 454 DISCONNECT BRANCH FROM BUS 235174 TO BUS 235175 CKT 1 /* 01ELKO 138 01ELKO 230 DISCONNECT BRANCH FROM BUS 235971 TO BUS 235175 CKT 1 /* 01SQUABHLLW 230 01ELKO 230 DISCONNECT BRANCH FROM BUS 235174 TO BUS 235237 CKT 1 /* 01ELKO 138 01RIDGWY 138 DISCONNECT BRANCH FROM BUS 235159 TO BUS 235174 CKT 1 /* 01CARB J 138 01ELKO 138 END
PJM500_PN_P4-500-001A	CONTINGENCY 'PJM500_PN_P4-500-001A' /* KEYSTONE 500KV BKR 1 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200033 /* KEYS G2 20 REMOVE MACHINE L FROM BUS 200033 /* KEYS G2 20 DISCONNECT BUS 200033 /* KEYS G2 20 END

Contingency Name	Contingency Definition
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
AP-P1-3-WP-230-005	CONTINGENCY 'AP-P1-3-WP-230-005' /* MILESBERG #82 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235219 TO BUS 236745 CKT 82 /* 01MILES230 01MILES230 46 DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES230 END
PJM500_PN_P4-500-001D	CONTINGENCY 'PJM500_PN_P4-500-001D' /* KEYSTONE 500KV BKR 4 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200032 /* KEYS G1 20 REMOVE MACHINE L FROM BUS 200032 /* KEYS G1 20 DISCONNECT BUS 200032 /* KEYS G1 20 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
AP-P1-2-WP-230-321T	CONTINGENCY 'AP-P1-2-WP-230-321T' /* FOREST - SQUAB HOLLOW 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235971 TO BUS 200581 CKT 1 /* 01SQUABHLLW 230 26FOREST 230 END
PN-P7-1-PN-230-002A	CONTINGENCY 'PN-P7-1-PN-230-002A' /* GLADE - FOREST 230KV & GLADE - LEWIS RUN 230KV DISCONNECT BRANCH FROM BUS 200593 TO BUS 200581 CKT 1 /* 26GLADE 230 26FOREST 230 DISCONNECT BRANCH FROM BUS 200593 TO BUS 200704 CKT 1 /* 26GLADE 230 26LEWIS RN 230 END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-9G-A	CONTINGENCY 'PN-P2-3-PN-230-9G-A' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200743 TO BUS 200796 CKT 3 /* 26HOOVERSV 115 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END
AP-P2-3-WP-230-708DT	CONTINGENCY 'AP-P2-3-WP-230-708DT' /* SQUAB HOLLOW 230 STK BKR - NEW4 DISCONNECT BRANCH FROM BUS 235971 TO BUS 235972 CKT 1 /* 01SQUABHLLW 230- 138 TR DISCONNECT BRANCH FROM BUS 235971 TO BUS 200581 CKT 1 /* 01SQUABHLLW 230 26FOREST 230 END
PN-P1_2-PN-230-0103	CONTINGENCY 'PN-P1_2-PN-230-0103' /* SHELOCTA - KEYSTONE 230 KV LINE OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 END
PN-P2-3-PN-230-8I	CONTINGENCY 'PN-P2-3-PN-230-8I' /* GLADE STUCK BREAKER B5 (FOREST/LEWIS RUN) DISCONNECT BRANCH FROM BUS 200593 TO BUS 200704 CKT 1 /* 26GLADE 230 26LEWIS RN 230 DISCONNECT BRANCH FROM BUS 200581 TO BUS 200593 CKT 1 /* 26FOREST 230 26GLADE 230 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
ATSI-P1-1-CEI-345-711	CONTINGENCY 'ATSI-P1-1-CEI-345-711' /* GEN 02PERRG1 22.0 UNIT 1 REMOVE MACHINE 1 FROM BUS 239035 /* 02PERRG1 22 END
200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 235220 CKT 1 END

Contingency Name	Contingency Definition
PN-P1-3-PN-230-001T	CONTINGENCY 'PN-P1-3-PN-230-001T' /* CONEMAUGH #1 500/230KV XFMR DISCONNECT BRANCH FROM BUS 200005 TO BUS 200912 CKT 3 /* CONEM-GH 500 26CONEMAGH 230 END
PL_P12_100598	CONTINGENCY 'PL_P12_100598' /* JUNIATA-DAUPHIN 230 LINE & DAUPHIN TR2 OUT DISCONNECT BRANCH FROM BUS 207955 TO BUS 207953 CKT 1 /* /*DAUP 230 CB DISCONNECT BRANCH FROM BUS 208005 TO BUS 207955 CKT 1 /* /*JUNI-DAUP 230 DISCONNECT BRANCH FROM BUS 207955 TO BUS 209866 CKT 2 /* /*DAUP T2 END

12 Short Circuit Analysis

Short Circuit analysis will be performed in the System Impact Study phase.

13 Affected Systems

13.1 NYISO

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

14 Attachment 1: One Line Diagram