



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF2-052
FARMERS VALLEY-RIDGEWAY 115 KV
37 MW Capacity / 55 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, LLC (MAIT) (PENELEC Zone).

2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Interconnection Customer seeking to interconnect a wind or solar generation facility shall maintain meteorological data facilities as well as provide that meteorological data which is required per Schedule H to the Interconnection Service Agreement and Section 8 of Manual 14D.

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

3 General

The Interconnection Customer (IC), has proposed a Solar generating facility located in McKean County, Pennsylvania. The installed facilities will have a total capability of 55 MW with 37 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 01, 2023. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-052
Project Name	FARMERS VALLEY-RIDGEWAY 115 KV
State	Pennsylvania
County	McKean
Transmission Owner	PENELEC (MAIT)
MFO	55
MWE	55
MWC	37
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 115 kV three (3) breaker ring bus substation and looping the Farmers Valley - Ridgway 115 kV line into the new station. The new substation will be located approximately 1.71 miles from Farmers Valley 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 Farmers Valley Substation and Ridgway Substation.

Attachment 1 shows a one-line diagram of the proposed primary Direct Connection facilities for the AF2-052 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 AF2-052 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$8,142,900
Total System Network Upgrade Costs	\$541,516,881 ¹
Total Costs	\$549,659,781

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.

6 Transmission Owner Scope of Work

The interconnection of the project at the Primary POI will be accomplished by constructing a new 115 kV three (3) breaker ring bus substation and looping the Farmers Valley - Ridgway 115 kV line into the new station. The new substation will be located approximately 1.71 miles from Farmers Valley 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 total physical interconnection costs is given in the table below:

Description	Total Cost
Install 115 kV terminal position at new interconnection station.	\$720,600
Construct a new interconnection station with 3-115 kV breakers in a ring bus configuration and associated facilities.	\$6,485,900
Loop the Farmers Valley – Ridgway 115 kV line into the new interconnection station.	\$461,900
Update relaying at Ridgway substation.	\$205,700
Update relaying at Farmers Valley substation.	\$204,200
Review drawings and nameplates for customer substation.	\$64,600
Total Physical Interconnection Costs	\$8,142,900

7 Schedule

Based on the scope of work for the interconnection facilities, it is expected to take a minimum of 20 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 work and that all system outages will be allowed when requested.

The schedule for the required Network Impact Reinforcements will be more clearly identified in future study phases. The estimated time to complete each of the required reinforcements is identified in the “System Reinforcements” section of the report.

8 Transmission Owner Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AF2-052 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.

The IC has requested a non-standard GSU transformer winding configuration. This transformer is in violation of section 14.2.6 of FE’s “Requirements for Transmission Connected Facilities” document and will not be accepted. The GSU transformer must have a grounded wye connection on the high (utility) side and a delta connection on the low (generator) side.

9.2 Compliance Issues and Interconnection Customer Requirements

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

1. The purchase and installation of a fully rated 115 kV circuit breaker to protect the AF2-052 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 AF2-052 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)

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

10.3 Interconnected Transmission Owner Requirements

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

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

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

11 Summer Peak - Load Flow Analysis

The Queue Project AF2-052 was evaluated as a 55.0 MW (Capacity 37.0 MW) injection tapping the Farmers Valley to Ridgeway 115 kV line in the PENELEC area. Project AF2-052 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-052 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

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

None

11.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPAC T
1009416 36	20066 8	26FARM VLY	115. 0	PENELE C	20094 4	26PIERCEB RK	115. 0	PENELE C	1	PN-P2-3-PN-230-8M_SUM_W IN	break er	237.0	93.24	110.16	DC	40.09
1009416 69	20071 3	26ROCKT ON	115. 0	PENELE C	20071 4	26SHAWVL 1	115. 0	PENELE C	1	AP-P2-3-WP-230-708C	break er	190.0	99.57	103.19	DC	6.86

11.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC/D C	MW IMPAC T
9907077 5	20051 3	26LEWISTW N	230. 0	PENEL EC	20800 5	JUNI BU2	230. 0	PPL	1	PN-P2-3-PN-115-55A	break er	624. 0	152.01	152.51	DC	6.86
1009412 44	20058 2	26RIDGWA Y	115. 0	PENEL EC	20064 7	26FOREST	115. 0	PENEL EC	1	AP-P2-3-WP-230-001T	bus	277. 0	127.62	130.69	DC	8.5
9907116 6	20059 3	26GLADE	230. 0	PENEL EC	20081 1	26WARREN	230. 0	PENEL EC	1	Base Case	single	520. 0	129.1	130.3	DC	6.39
9907116 7	20059 3	26GLADE	230. 0	PENEL EC	20081 1	26WARREN	230. 0	PENEL EC	1	PN-P1-2-PN-345-003	single	621. 0	125.56	126.46	DC	6.51
1009417 49	20067 4	26TOWAND A	115. 0	PENEL EC	20067 7	26NO MESHO	115. 0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202. 0	157.35	158.42	DC	2.17
1009414 33	20071 1	26WHETST ON	115. 0	PENEL EC	20072 0	26HARVY.R U	115. 0	PENEL EC	1	AP-P2-3-WP-230-708C	break er	172. 0	141.44	145.38	DC	6.77
1009414 34	20071 1	26WHETST ON	115. 0	PENEL EC	20072 0	26HARVY.R U	115. 0	PENEL EC	1	AP-P2-3-WP-230-445	break er	172. 0	124.35	127.77	DC	5.88
1009414 35	20071 1	26WHETST ON	115. 0	PENEL EC	20072 0	26HARVY.R U	115. 0	PENEL EC	1	AP-P2-3-WP-230-708DT	break er	172. 0	122.6	126.55	DC	6.77
1009416 52	20071 2	26DUBOIS	115. 0	PENEL EC	20071 3	26ROCKTO N	115. 0	PENEL EC	1	AP-P2-3-WP-230-708C	break er	190. 0	101.2	104.82	DC	6.86
1009414 79	20072 0	26HARVY.R U	115. 0	PENEL EC	20071 2	26DUBOIS	115. 0	PENEL EC	1	AP-P2-3-WP-230-708C	break er	179. 0	131.21	135.05	DC	6.86
1009414 80	20072 0	26HARVY.R U	115. 0	PENEL EC	20071 2	26DUBOIS	115. 0	PENEL EC	1	AP-P2-3-WP-230-445	break er	179. 0	114.56	117.89	DC	5.95
1009414 81	20072 0	26HARVY.R U	115. 0	PENEL EC	20071 2	26DUBOIS	115. 0	PENEL EC	1	AP-P2-3-WP-230-708DT	break er	179. 0	112.89	116.73	DC	6.86
9907048 1	20076 9	26HOMER CY	345. 0	PENEL EC	99939 1	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824. 0	132.08	133.8	DC	14.26
9907072 5	20076 9	26HOMER CY	345. 0	PENEL EC	99939 2	26HOMER CT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	break er	807. 0	151.35	153.11	DC	14.29
9907079 5	20076 9	26HOMER CY	345. 0	PENEL EC	99939 1	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	break er	824. 0	132.08	133.8	DC	14.26
9907126 1	20076 9	26HOMER CY	345. 0	PENEL EC	99939 2	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807. 0	110.72	111.9	DC	9.65
9907129 6	20076 9	26HOMER CY	345. 0	PENEL EC	99939 1	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824. 0	107.82	108.97	DC	9.59

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC/D C	MW IMPACT
99070695	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	183.64	184.24	DC	12.11
99070824	200810	26KEYSTONE E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001A	breaker	635.0	137.61	138.14	DC	7.26
99070825	200810	26KEYSTONE E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	137.61	138.14	DC	7.26
99070859	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P2-3-PN-345-003A	breaker	621.0	132.74	133.98	DC	7.7
99070476	200924	26CANYON	230.0	PENEL EC	200706	26N.MESH P N	230.0	PENEL EC	1	PN-P2-2-PN-230-007T	bus	666.0	143.67	144.03	DC	6.66
100941519	200927	26FOURMIL E	115.0	PENEL EC	200820	26ERIE SE	115.0	PENEL EC	1	PN-P2-3-PN-230-6G	breaker	245.0	145.86	146.6	DC	4.02
100472824	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P2-3-CEI-345-004D	breaker	228.0	120.46	121.01	DC	2.8
100472762	235174	01ELKO	138.0	AP	235237	01RIDGWY	138.0	AP	1	AP-P2-3-WP-230-447	breaker	133.0	153.7	154.99	DC	3.82
100473000	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	single	179.0	175.14	175.76	DC	2.46
100473001	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	175.14	175.76	DC	2.46
100473044	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	154.82	155.44	DC	2.07
100473045	235240	01COLMBG PN	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	154.82	155.44	DC	2.07
100473029	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	PN-P1-2-PN-345-107T	single	151.0	163.29	163.91	DC	2.07
100473030	235282	01GAR RN	138.0	AP	235240	01COLMBG PN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	163.29	163.91	DC	2.07
100941443	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWA Y	115.0	PENEL EC	1	PN-P2-3-PN-230-8I	breaker	160.0	120.93	130.95	DC	16.03
100942507	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWA Y	115.0	PENEL EC	1	PN-P2-1-PN-230-002A	tower	160.0	120.93	130.95	DC	16.03
100941280	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	117.87	118.57	DC	3.79
100941621	945550	AF1-220 TAP	115.0	PENEL EC	200711	26WHETST ON	115.0	PENEL EC	1	AP-P2-3-WP-230-708C	breaker	239.0	106.85	109.72	DC	6.86
100941494	957580	AF2-052 TAP	115.0	PENEL EC	200668	26FARM VLY	115.0	PENEL EC	1	PN-P2-3-PN-230-7AT	breaker	160.0	104.64	133.03	DC	45.41
99070484	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	132.07	133.79	DC	14.26
99070800	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	132.07	133.79	DC	14.26
99071304	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	107.82	108.97	DC	9.59
99070730	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	151.34	153.1	DC	14.29
99071271	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	110.71	111.89	DC	9.65
99070829	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	breaker	634.0	137.09	137.61	DC	7.26
99070830	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	137.09	137.61	DC	7.26

11.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/D C	MW IMPACT
99071181	200513	26LEWISTWN	230.0	PENEL EC	208005	JUNI BU2	230.0	PPL	1	Base Case	operation	493.0	165.27	165.84	DC	6.2
99071182	200513	26LEWISTWN	230.0	PENEL EC	208005	JUNI BU2	230.0	PPL	1	PN-P1-2-PN-115-094-A	operation	624.0	151.92	152.42	DC	6.86
99071510	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	776.0	102.4	103.53	DC	8.74
98643381	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHL LW	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	621.0	108.66	110.91	DC	13.95
98643382	200581	26FOREST	230.0	PENEL EC	235971	01SQUABHL LW	230.0	AP	1	PN-P1-2-PN-345-107T	operation	621.0	108.66	110.91	DC	13.95
100941999	200582	26RIDGWAY	115.0	PENEL EC	200647	26FOREST	115.0	PENEL EC	1	20071126WHETSTON 115 945550 AF1-220 TAP 115 1	operation	277.0	101.46	106.49	DC	13.92
100942000	200582	26RIDGWAY	115.0	PENEL EC	200647	26FOREST	115.0	PENEL EC	1	PN-P1-2-PN-115-027-B	operation	277.0	101.46	106.49	DC	13.92
99071161	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	Base Case	operation	520.0	175.53	177.36	DC	9.49
99071163	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-003	operation	621.0	172.55	174.11	DC	9.68
100942058	200668	26FARM VLY	115.0	PENEL EC	200944	26PIERCEBRK	115.0	PENEL EC	1	PN-P1-2-PN-230-006	operation	237.0	83.29	100.21	DC	40.1
100941748	200674	26TOWANDA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operation	202.0	187.95	188.65	DC	3.23
99071171	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operation	515.0	157.35	157.77	DC	5.74
100941882	200711	26WHETSTON	115.0	PENEL EC	200720	26HARVY.RU	115.0	PENEL EC	1	AP-P1-2-WP-230-321T	operation	172.0	122.42	126.37	DC	6.78
100941946	200720	26HARVY.RU	115.0	PENEL EC	200712	26DUBOIS	115.0	PENEL EC	1	AP-P1-2-WP-230-321T	operation	179.0	112.7	116.54	DC	6.86
98643242	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-3-WP-230-005	operation	554.0	157.43	157.89	DC	5.72
98643243	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-2-WP-230-005B	operation	554.0	157.43	157.89	DC	5.72
99071121	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	188.26	189.56	DC	11.93
99071122	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	188.26	189.56	DC	11.93
99071123	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	Base Case	operation	731.0	168.22	168.8	DC	9.58
99071260	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	135.04	136.8	DC	14.34

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
99071295	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	operati on	824.0	131.51	133.23	DC	14.26
99071136	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operati on	917.0	182.67	183.28	DC	12.28
99071137	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operati on	917.0	182.67	183.28	DC	12.28
99071140	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operati on	731.0	158.95	159.56	DC	9.8
99071353	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operati on	635.0	131.3	131.82	DC	7.28
99071372	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	Base Case	operati on	520.0	133.62	135.07	DC	7.52
99071373	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	132.48	133.86	DC	8.6
99071217	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	147.36	147.75	DC	5.74
100473138	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	228.0	117.33	117.9	DC	2.91
100473139	235121	01ARMSTR	138.0	AP	235204	01KITTAN	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	228.0	117.33	117.9	DC	2.91
100472998	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	179.0	226.16	227.08	DC	3.66
100472999	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	179.0	226.16	227.08	DC	3.66
100473035	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	268.0	174.95	175.6	DC	3.86
100473036	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	268.0	174.95	175.6	DC	3.86
100473042	235240	01COLMBGP N	138.0	AP	235202	01KISKIV	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	151.0	181.04	181.95	DC	3.07
100473043	235240	01COLMBGP N	138.0	AP	235202	01KISKIV	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	181.04	181.95	DC	3.07
98643222	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	Base Case	operati on	491.0	204.77	205.42	DC	7.08
98643223	235248	01SHINGL	230.0	AP	200513	26LEWISTW N	230.0	PENEL EC	1	PN-P1-2-PN-230-012A-A	operati on	570.0	199.47	200.07	DC	7.56
100473027	235282	01GAR RN	138.0	AP	235240	01COLMBGP N	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	151.0	189.51	190.43	DC	3.07
100473028	235282	01GAR RN	138.0	AP	235240	01COLMBGP N	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	151.0	189.51	190.43	DC	3.07
98643397	235971	01SQUABHL LW	230.0	AP	235175	01ELKO	230.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	621.0	104.06	105.89	DC	11.36
98643398	235971	01SQUABHL LW	230.0	AP	235175	01ELKO	230.0	AP	1	PN-P1-2-PN-345-107T	operati on	621.0	104.06	105.89	DC	11.36
100473194	235972	01SQUABHL LW	138.0	AP	235174	01ELKO	138.0	AP	1	AP-P1-2-WP-230-002	operati on	350.0	100.25	102.12	DC	6.54

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS LOADING %	POST PROJECTIONS LOADING %	AC/D C	MW IMPACT
100941825	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	117.06	127.48	DC	16.67
100941829	941190	AE2-113 TAP	115.0	PENEL EC	200582	26RIDGWAY	115.0	PENEL EC	1	Base Case	operation	133.0	100.52	111.47	DC	14.56
100941952	944300	AF1-098 TAP	115.0	PENEL EC	200927	26FOURMILE	115.0	PENEL EC	1	PN-P1-2-PN-230-003	operation	245.0	117.53	118.23	DC	3.81
100941873	957580	AF2-052 TAP	115.0	PENEL EC	200668	26FARM VLY	115.0	PENEL EC	1	PN-P1-2-PN-115-026	operation	160.0	101.05	129.74	DC	45.9
100941874	957580	AF2-052 TAP	115.0	PENEL EC	200668	26FARM VLY	115.0	PENEL EC	1	PN-P1-3-PN-230-011A	operation	160.0	101.05	129.74	DC	45.9
99071303	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	131.51	133.23	DC	14.26
99071270	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	135.02	136.79	DC	14.34
99071361	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	130.78	131.3	DC	7.28

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
100941652	8	26DUBOIS 115.0 kV - 26ROCKTON 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0054A (1818) : Replace line trap at Dubois. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months	\$122,280
100942507,100 941443	22	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
99070775	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
100941669	2	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	\$122,280
100472824	17	01ARMSTR 138.0 kV - 01KITTAN 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0001 (646) : Replace relaying (WT, RT) at Kittanning substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months	\$455,884

ID	Idx	Facility	Upgrade Description	Cost
99070725,99071261	11	26HOMER CY 345.0 kV - STAR601 1.0 kV Ckt N	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
99071304,99070484,99070800	26	STAR602 1.0 kV - 26HOMER CT 230.0 kV Ckt S		
99071271,99070730	27	STAR601 1.0 kV - 26HOMER CT 230.0 kV Ckt N		
99070481,99070795,99071296	10	26HOMER CY 345.0 kV - STAR602 1.0 kV Ckt S		
99070830,99070829	28	STAR592 1.0 kV - KEYSTONE 500.0 kV Ckt 4		
99070825,99070824	13	26KEYSTONE 230.0 kV - STAR592 1.0 kV Ckt 4		
99070695	12	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
100941433,100941435,100941434	7	26WHETSTON 115.0 kV - 26HARVY.RU 115.0 kV Ckt 1	PENELEC 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	\$831,504

ID	Idx	Facility	Upgrade Description	Cost
100941244	4	26RIDGWAY 115.0 kV - 26FOREST 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0063A (1843) : Replace line trap at Forest and Ridgway substations. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0063B (1844) : Adjust relay settings at Forest. Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months PN-AF2-F-0063C (1845) : Replace line relays at Forest and Ridgway. Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months PN-AF2-F-0063D (1846) : Replace bus conductor at Ridgway. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0063E (1847) : Replace circuit breakers at Forest and Ridgway. Project Type : FAC Cost : \$733,680 Time Estimate : 12.0 Months PN-AF2-F-0063F (1848) : Replace line drops at Ridgway substation. Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0063G (1849) : Reconductor 1.02 miles of transmission line Project Type : FAC Cost : \$3,118,140 Time Estimate : 12.0 Months PN-AF2-F-0063H (1850) : Replace disconnects at Forest and Ridgway substations. Project Type : FAC Cost : \$183,420 Time Estimate : 12.0 Months	\$5,258,040
99070859	14	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

ID	Idx	Facility	Upgrade Description	Cost
99070476	15	26CANYON 230.0 kV - 26N.MESHPN 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0047A (1778) : Reconductor 9.24 miles of transmission line. Project Type : FAC Cost : \$39,545,352 Time Estimate : 48.0 Months PN-AF2-F-0046B (1774) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months PN-AF2-F-0047C (1780) : Adjust line relaying as necessary at North Meshoppen Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months	\$40,248,462
100941621	24	AF1-220 TAP 115.0 kV - 26WHETSTON 115.0 kV Ckt 1	<u>PENELEC</u> 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
100473044,100 473045	20	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
100941519	16	26FOURMILE 115.0 kV - 26ERIE SE 115.0 kV Ckt 1	<u>PENELEC</u> 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

ID	Idx	Facility	Upgrade Description	Cost
99071167,9907 1166	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: The AF2-052 queue project has a dependency on a PJM upgrade which was not included. The impact of this PJM upgrade on AF2-052 will be evaluated in the impact study phase.	\$42,755,202
100472762	18	01ELKO 138.0 kV - 01RIDGWY 138.0 kV Ckt 1	APS 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
100941480,100 941481,100941 479	9	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	\$672,540

ID	Idx	Facility	Upgrade Description	Cost
100473000,100 473001	19	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

ID	Idx	Facility	Upgrade Description	Cost
100941494	25	AF2-052 TAP 115.0 kV - 26FARM VLY 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0056A (1822) : Reconductor 1.71 miles of transmission line Project Type : FAC Cost : \$4,181,976 Time Estimate : 24.0 Months PN-AF2-F-0056B (1823) : Replace substation conductor at Farmers Valley Project Type : FAC Cost : \$122,280 Time Estimate : 12.0 Months PN-AF2-F-0056C (1824) : Adjust line relaying at Farmers Valley Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months Note: The AF2-052 queue project has a dependency on a PJM upgrade which was not included. The impact of this PJM upgrade on AF2-052 will be evaluated in the impact study phase.	\$4,732,236
100473030,100 473029	21	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
N/A	N/A	26E.TWANDA 230.0 kV - 26CANYON 230.0 kV Ckt 1	Note: The AF2-052 queue project has a dependency on a PJM upgrade which was not included. The impact of this PJM upgrade on AF2-052 will be evaluated in the impact study phase.	\$0
100941636	1	26FARM VLY 115.0 kV - 26PIERCEBRK 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0055A (1821) : Reconductor 2.23 miles of transmission line Project Type : FAC Cost : \$5,453,688 Time Estimate : 24.0 Months	\$5,453,688
100941280	23	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
100941749	6	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 an 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
			TOTAL COST	\$541,516,881¹

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
100941636	200668	26FARM VLY	PENELEC	200944	26PIERCEBRK	PENELEC	1	PN-P2-3-PN-230-8M_SUM_WIN	breaker	237.0	93.24	110.16	DC	40.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	1.7056	50/50	1.7056
235003	AC1-025 E	0.0789	Adder	0.09
236828	01GRAYMONT	0.2183	Adder	0.26
290086	Q-036 E	1.8139	Adder	2.13
919491	AA2-000	23.0148	Adder	27.08
930511	AB1-092	0.8450	Adder	0.99
936421	AD2-055	1.7398	Adder	2.05
936991	AD2-133 C	0.8163	Adder	0.96
936992	AD2-133 E	3.7335	Adder	4.39
939171	AE1-147 C	0.6587	Adder	0.77
939172	AE1-147 E	0.4391	Adder	0.52
940201	AE2-001 C	0.6566	Adder	0.77
940202	AE2-001 E	0.4377	Adder	0.51
940681	AE2-055 C (Suspended)	0.6242	Adder	0.73
940682	AE2-055 E (Suspended)	0.4162	Adder	0.49
941191	AE2-113 C	33.8516	50/50	33.8516
941192	AE2-113 E	36.4472	50/50	36.4472
941261	AE2-120 C	0.6555	Adder	0.77
941262	AE2-120 E	0.4370	Adder	0.51
941271	AE2-121 C	0.3522	Adder	0.41
941272	AE2-121 E	0.2351	Adder	0.28
941321	AE2-126 C	1.9548	50/50	1.9548
941322	AE2-126 E	1.3032	50/50	1.3032
941331	AE2-129 C	0.7125	Adder	0.84
941332	AE2-129 E	0.4750	Adder	0.56
941351	AE2-131 C	0.7125	Adder	0.84
941352	AE2-131 E	0.4750	Adder	0.56
942351	AE2-248 C	0.5102	Adder	0.6
942352	AE2-248 E	0.3402	Adder	0.4
942491	AE2-262 C	3.1917	Adder	3.75
942492	AE2-262 E	2.1449	Adder	2.52
942501	AE2-263 C	3.0002	Adder	3.53
942502	AE2-263 E	2.0031	Adder	2.36
942961	AE2-316 C	2.2963	Adder	2.7
942962	AE2-316 E	3.2746	Adder	3.85
943751	AF1-043	5.2193	Adder	6.14
944001	AF1-068 C O1	0.6760	Adder	0.8
944002	AF1-068 E O1	0.3802	Adder	0.45
944311	AF1-099 C	4.8451	Adder	5.7
944312	AF1-099 E	3.2301	Adder	3.8
944321	AF1-100 C	10.8898	Adder	12.81

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944322	AF1-100 E	7.2598	Adder	8.54
944382	AF1-103 BAT	1.1860	Merchant Transmission	1.1860
944471	AF1-112 C	0.6840	Adder	0.8
944472	AF1-112 E	0.3848	Adder	0.45
944671	AF1-132 C O1	0.6314	Adder	0.74
944672	AF1-132 E O1	0.4209	Adder	0.5
944691	AF1-134 C O1	0.6021	Adder	0.71
944692	AF1-134 E O1	0.4014	Adder	0.47
944771	AF1-142 C	7.7521	Adder	9.12
944772	AF1-142 E	5.1681	Adder	6.08
944841	AF1-149 C	0.6553	Adder	0.77
944842	AF1-149 E	0.4369	Adder	0.51
944881	AF1-153 C O1	0.9781	Adder	1.15
944882	AF1-153 E O1	0.6521	Adder	0.77
944901	AF1-155 C	0.9716	Adder	1.14
944902	AF1-155 E	0.6477	Adder	0.76
945161	AF1-181	0.0586	Adder	0.07
945171	AF1-182	0.2933	Adder	0.35
945181	AF1-183	0.0749	Adder	0.09
945491	AF1-214 C	0.6556	Adder	0.77
945492	AF1-214 E	0.4370	Adder	0.51
945551	AF1-220 C	19.3785	50/50	19.3785
945552	AF1-220 E	12.9261	50/50	12.9261
946381	AF1-302 C	1.0028	Adder	1.18
946382	AF1-302 E	1.3370	Adder	1.57
946421	AF1-306 C	5.7494	50/50	5.7494
946422	AF1-306 E	22.9975	50/50	22.9975
957451	AF2-039 C	0.3293	Adder	0.73
957452	AF2-039 E	0.2195	Adder	0.49
957581	AF2-052 C	26.9682	50/50	26.9682
957582	AF2-052 E	13.1197	50/50	13.1197
957941	AF2-088 C	0.1585	Adder	0.35
957942	AF2-088 E	0.1057	Adder	0.23
958271	AF2-121 C	0.3776	Adder	0.84
958272	AF2-121 E	0.2517	Adder	0.56
960022	AF2-293 E	0.0340	Adder	0.08
960041	AF2-295 C	0.5149	Adder	1.14
960042	AF2-295 E	0.3433	Adder	0.76
960051	AF2-296 C	0.3191	Adder	0.71
960052	AF2-296 E	0.2127	Adder	0.47
NEWTON	NEWTON	0.1719	Confirmed LTF	0.1719
FARMERCITY	FARMERCITY	0.0088	Confirmed LTF	0.0088
G-007A	G-007A	0.5898	Confirmed LTF	0.5898
VFT	VFT	1.5738	Confirmed LTF	1.5738
CALDERWOOD	CALDERWOOD	0.0591	Confirmed LTF	0.0591
NY	NY	0.4761	Confirmed LTF	0.4761
PRAIRIE	PRAIRIE	0.3978	Confirmed LTF	0.3978
CHEOAH	CHEOAH	0.0591	Confirmed LTF	0.0591
EDWARDS	EDWARDS	0.0588	Confirmed LTF	0.0588
TILTON	TILTON	0.1046	Confirmed LTF	0.1046
MADISON	MADISON	0.0101	Confirmed LTF	0.0101
GIBSON	GIBSON	0.0874	Confirmed LTF	0.0874

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
BLUEG	BLUEG	0.2743	Confirmed LTF	0.2743
TRIMBLE	TRIMBLE	0.0885	Confirmed LTF	0.0885
CATAWBA	CATAWBA	0.0312	Confirmed LTF	0.0312

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
100941669	200713	26ROCKTON	PENELEC	200714	26SHAWVL 1	PENELEC	1	AP-P2-3-WP-230-708C	breaker	190.0	99.57	103.19	DC	6.86

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

11.6.3 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
99070775	200513	26LEWISTWN	PENELEC	208005	JUNI BU2	PPL	1	PN-P2-3-PN-115-55A	breaker	624.0	152.01	152.51	DC	6.86

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
100941244	200582	26RIDGWAY	PENELEC	200647	26FOREST	PENELEC	1	AP-P2-2-WP-230-001T	bus	277.0	127.62	130.69	DC	8.5

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	4.2426	50/50	4.2426
200715	26SHAWVL 1	2.3662	50/50	2.3662
200722	26SHAWVL 2	2.4263	50/50	2.4263
200913	26SHAW-D	0.1419	50/50	0.1419
235003	AC1-025 E	0.0792	Adder	0.09
236828	01GRAYMONT	0.2172	Adder	0.26
290086	Q-036 E	2.8077	Adder	3.3
916202	Z1-069 E	2.4334	Adder	2.86
919491	AA2-000	24.6835	Adder	29.04
922932	AB1-082 OP (Suspended)	1.2382	Adder	1.46
923443	AB1-160 E	0.6952	Adder	0.82
930511	AB1-092	0.9063	Adder	1.07
936421	AD2-055	1.8659	Adder	2.2
936991	AD2-133 C	1.2635	Adder	1.49
936992	AD2-133 E	5.7790	Adder	6.8
939171	AE1-147 C	0.6543	Adder	0.77
939172	AE1-147 E	0.4362	Adder	0.51
940201	AE2-001 C	0.6527	Adder	0.77
940202	AE2-001 E	0.4351	Adder	0.51
940681	AE2-055 C (Suspended)	0.6281	Adder	0.74
940682	AE2-055 E (Suspended)	0.4187	Adder	0.49
940861	AE2-074 C	0.9401	Adder	1.11
940862	AE2-074 E	1.2376	Adder	1.46
941191	AE2-113 C	19.6151	50/50	19.6151
941192	AE2-113 E	21.1191	50/50	21.1191
941261	AE2-120 C	0.6519	Adder	0.77
941262	AE2-120 E	0.4346	Adder	0.51
941271	AE2-121 C	0.3494	Adder	0.41
941272	AE2-121 E	0.2333	Adder	0.27
941321	AE2-126 C	4.3548	50/50	4.3548
941322	AE2-126 E	2.9032	50/50	2.9032
941331	AE2-129 C	1.2814	50/50	1.2814
941332	AE2-129 E	0.8542	50/50	0.8542
941351	AE2-131 C	1.2814	50/50	1.2814
941352	AE2-131 E	0.8542	50/50	0.8542
942351	AE2-248 C	0.5107	Adder	0.6
942352	AE2-248 E	0.3405	Adder	0.4
942491	AE2-262 C	3.0668	Adder	3.61
942492	AE2-262 E	2.0609	Adder	2.42
942501	AE2-263 C	2.8828	Adder	3.39
942502	AE2-263 E	1.9247	Adder	2.26

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943751	AF1-043	5.5978	Adder	6.59
944001	AF1-068 C O1	0.6776	Adder	0.8
944002	AF1-068 E O1	0.3812	Adder	0.45
944311	AF1-099 C	4.6554	Adder	5.48
944312	AF1-099 E	3.1036	Adder	3.65
944321	AF1-100 C	11.0887	Adder	13.05
944322	AF1-100 E	7.3925	Adder	8.7
944382	AF1-103 BAT	1.5754	Merchant Transmission	1.5754
944471	AF1-112 C	0.6838	Adder	0.8
944472	AF1-112 E	0.3846	Adder	0.45
944671	AF1-132 C O1	0.6335	Adder	0.75
944672	AF1-132 E O1	0.4223	Adder	0.5
944691	AF1-134 C O1	0.8887	Adder	1.05
944692	AF1-134 E O1	0.5925	Adder	0.7
944771	AF1-142 C	7.4486	Adder	8.76
944772	AF1-142 E	4.9658	Adder	5.84
944841	AF1-149 C	0.6518	Adder	0.77
944842	AF1-149 E	0.4345	Adder	0.51
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3058	Adder	0.36
945181	AF1-183	0.1124	50/50	0.1124
945491	AF1-214 C	0.6519	Adder	0.77
945492	AF1-214 E	0.4346	Adder	0.51
945551	AF1-220 C	47.1826	50/50	47.1826
945552	AF1-220 E	31.4723	50/50	31.4723
946423	AF1-306 BAT	56.0196	50/50	56.0196
957451	AF2-039 C	1.1096	50/50	1.1096
957452	AF2-039 E	0.7397	50/50	0.7397
957581	AF2-052 C	5.7213	50/50	5.7213
957582	AF2-052 E	2.7833	50/50	2.7833
957941	AF2-088 C	0.5343	50/50	0.5343
957942	AF2-088 E	0.3562	50/50	0.3562
958271	AF2-121 C	1.2814	50/50	1.2814
958272	AF2-121 E	0.8542	50/50	0.8542
959802	AF2-271 E	0.0943	Adder	0.21
960022	AF2-293 E	0.0337	Adder	0.07
960051	AF2-296 C	0.4710	Adder	1.05
960052	AF2-296 E	0.3140	Adder	0.7
NEWTON	NEWTON	0.3761	Confirmed LTF	0.3761
FARMERCITY	FARMERCITY	0.0193	Confirmed LTF	0.0193
G-007A	G-007A	1.4145	Confirmed LTF	1.4145
VFT	VFT	3.8829	Confirmed LTF	3.8829
CALDERWOOD	CALDERWOOD	0.1382	Confirmed LTF	0.1382
PRAIRIE	PRAIRIE	0.8756	Confirmed LTF	0.8756
CHEOAH	CHEOAH	0.1381	Confirmed LTF	0.1381
EDWARDS	EDWARDS	0.1270	Confirmed LTF	0.1270
TILTON	TILTON	0.2268	Confirmed LTF	0.2268
MADISON	MADISON	0.0222	Confirmed LTF	0.0222
GIBSON	GIBSON	0.1916	Confirmed LTF	0.1916
BLUEG	BLUEG	0.6059	Confirmed LTF	0.6059
TRIMBLE	TRIMBLE	0.1942	Confirmed LTF	0.1942
CATAWBA	CATAWBA	0.0777	Confirmed LTF	0.0777

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
99071166	200593	26GLADE	PENELEC	200811	26WARREN	PENELEC	1	Base Case	single	520.0	129.1	130.3	DC	6.39

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
100941749	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	157.35	158.42	DC	2.17

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
CPLE	CPLE	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

11.6.7 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
100941433	200711	26WHETSTON	PENELEC	200720	26HARVY.RU	PENELEC	1	AP-P2-3-WP-230-708C	breaker	172.0	141.44	145.38	DC	6.77

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

11.6.8 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
100941652	200712	26DUBOIS	PENELEC	200713	26ROCKTON	PENELEC	1	AP-P2-3-WP-230-708C	breaker	190.0	101.2	104.82	DC	6.86

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

11.6.9 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
100941479	200720	26HARVY.RU	PENELEC	200712	26DUBOIS	PENELEC	1	AP-P2-3-WP-230-708C	breaker	179.0	131.21	135.05	DC	6.86

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

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
99070795	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	132.08	133.8	DC	14.26

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

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
99070725	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	151.35	153.11	DC	14.29

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
99070695	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	183.64	184.24	DC	12.11

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
99070825	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	137.61	138.14	DC	7.26

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
99070859	200811	26WARREN	PENELEC	200918	26ERIE S TIE	PENELEC	1	PN-P2-3-PN-345-003A	breaker	621.0	132.74	133.98	DC	7.7

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	Gendeliv 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
99070476	200924	26CANYON	PENELEC	200706	26N.MESHPN	PENELEC	1	PN-P2-2-PN-230-007T	bus	666.0	143.67	144.03	DC	6.66

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	-2.4023	Adder	-2.83
200894	26K02	17.5196	50/50	17.5196
200898	26AA1-106	6.2856	50/50	6.2856
200949	26X1-109	53.6988	50/50	53.6988
201477	26Y2-055	2.2784	Adder	2.68
203283	26MANOR_T86	0.0638	50/50	0.0638
203350	26MILZ1-092	0.9036	50/50	0.9036
203351	26GROZ1-110	1.0842	50/50	1.0842
203352	26CANZ2-011	1.0842	50/50	1.0842
203999	P-047 E	17.0508	Adder	20.06
235003	AC1-025 E	0.1722	Adder	0.2
236828	01GRAYMONT	0.4642	Adder	0.55
290086	Q-036 E	2.9029	Adder	3.42
916202	Z1-069 E	8.8973	Adder	10.47
918602	AA1-077 E	-6.2416	Adder	-7.34
918682	AA1-082 E	23.3991	50/50	23.3991
919201	AA1-144 OP	65.4038	50/50	65.4038
919491	AA2-000	86.2780	Adder	101.5
922932	AB1-082 OP (Suspended)	2.5273	Adder	2.97
923443	AB1-160 E	2.5421	Adder	2.99
930511	AB1-092	3.1679	Adder	3.73
934801	AD1-108	0.0817	50/50	0.0817
934811	AD1-109	0.0599	50/50	0.0599
935061	AD1-142	0.0499	50/50	0.0499
936421	AD2-055	6.5221	Adder	7.67
936991	AD2-133 C	1.3063	Adder	1.54
936992	AD2-133 E	5.9749	Adder	7.03
938332	AE1-051 BAT	0.9295	Merchant Transmission	0.9295
939171	AE1-147 C	1.3950	Adder	1.64
939172	AE1-147 E	0.9300	Adder	1.09
940201	AE2-001 C	1.3935	Adder	1.64
940202	AE2-001 E	0.9290	Adder	1.09
940681	AE2-055 C (Suspended)	1.3731	Adder	1.62
940682	AE2-055 E (Suspended)	0.9154	Adder	1.08
940861	AE2-074 C	1.9189	Adder	2.26
940862	AE2-074 E	2.5260	Adder	2.97
941191	AE2-113 C	6.4267	Adder	7.56
941192	AE2-113 E	6.9195	Adder	8.14
941261	AE2-120 C	1.3928	Adder	1.64
941262	AE2-120 E	0.9285	Adder	1.09
941271	AE2-121 C	0.7429	Adder	0.87

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.4960	Adder	0.58
941321	AE2-126 C	1.2133	Adder	1.43
941322	AE2-126 E	0.8089	Adder	0.95
941331	AE2-129 C	1.0189	Adder	1.2
941332	AE2-129 E	0.6793	Adder	0.8
941351	AE2-131 C	1.0189	Adder	1.2
941352	AE2-131 E	0.6793	Adder	0.8
941421	AE2-139 C	22.4913	50/50	22.4913
941422	AE2-139 E	14.9942	50/50	14.9942
942351	AE2-248 C	1.1054	Adder	1.3
942352	AE2-248 E	0.7369	Adder	0.87
942491	AE2-262 C	6.0949	Adder	7.17
942492	AE2-262 E	4.0958	Adder	4.82
942501	AE2-263 C	5.7292	Adder	6.74
942502	AE2-263 E	3.8252	Adder	4.5
942961	AE2-316 C	3.2728	Adder	3.85
942962	AE2-316 E	4.6670	Adder	5.49
943751	AF1-043	19.5663	Adder	23.02
944001	AF1-068 C O1	1.4710	Adder	1.73
944002	AF1-068 E O1	0.8274	Adder	0.97
944311	AF1-099 C	9.2521	Adder	10.88
944312	AF1-099 E	6.1681	Adder	7.26
944321	AF1-100 C	17.7773	Adder	20.91
944322	AF1-100 E	11.8516	Adder	13.94
944381	AF1-103 O1	1.5705	Adder	1.85
944411	AF1-106 O1	5.2650	50/50	5.2650
944471	AF1-112 C	1.4762	Adder	1.74
944472	AF1-112 E	0.8304	Adder	0.98
944671	AF1-132 C O1	1.3776	Adder	1.62
944672	AF1-132 E O1	0.9184	Adder	1.08
944691	AF1-134 C O1	0.9298	Adder	1.09
944692	AF1-134 E O1	0.6199	Adder	0.73
944771	AF1-142 C	14.8034	Adder	17.42
944772	AF1-142 E	9.8689	Adder	11.61
944841	AF1-149 C	1.3927	Adder	1.64
944842	AF1-149 E	0.9285	Adder	1.09
944881	AF1-153 C O1	1.1916	Adder	1.4
944882	AF1-153 E O1	0.7944	Adder	0.93
944901	AF1-155 C	1.1855	Adder	1.39
944902	AF1-155 E	0.7904	Adder	0.93
945121	AF1-177	0.3926	Adder	0.46
945161	AF1-181	0.0927	Adder	0.11
945171	AF1-182	0.4622	Adder	0.54
945181	AF1-183	0.1083	Adder	0.13
945331	AF1-198	0.5512	Adder	0.65
945491	AF1-214 C	1.3929	Adder	1.64
945492	AF1-214 E	0.9286	Adder	1.09
945551	AF1-220 C	9.2696	Adder	10.91
945552	AF1-220 E	6.1831	Adder	7.27
946111	AF1-276 C	6.2765	Adder	7.38
946112	AF1-276 E	3.0914	Adder	3.64
946121	AF1-277 C	6.2765	Adder	7.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946122	AF1-277 E	3.0914	Adder	3.64
946131	AF1-278 C	5.0024	Adder	5.89
946132	AF1-278 E	2.4881	Adder	2.93
946211	AF1-286 C O1	2.1323	50/50	2.1323
946212	AF1-286 E O1	1.4479	50/50	1.4479
946381	AF1-302 C	1.4292	Adder	1.68
946382	AF1-302 E	1.9056	Adder	2.24
946421	AF1-306 C	5.2075	Adder	6.13
946422	AF1-306 E	20.8301	Adder	24.51
957451	AF2-039 C	0.4293	Adder	0.95
957452	AF2-039 E	0.2862	Adder	0.64
957581	AF2-052 C	2.0194	Adder	4.48
957582	AF2-052 E	0.9824	Adder	2.18
957681	AF2-062 C	6.0190	Adder	13.36
957682	AF2-062 E	4.0127	Adder	8.91
957941	AF2-088 C	0.2067	Adder	0.46
957942	AF2-088 E	0.1378	Adder	0.31
958271	AF2-121 C	0.5400	Adder	1.2
958272	AF2-121 E	0.3600	Adder	0.8
959061	AF2-197 C O1	12.3512	50/50	12.3512
959062	AF2-197 E O1	18.5268	50/50	18.5268
959471	AF2-238 C	3.2208	50/50	3.2208
959472	AF2-238 E	2.1472	50/50	2.1472
959481	AF2-239 C	3.1582	50/50	3.1582
959482	AF2-239 E	2.5322	50/50	2.5322
959491	AF2-240 C	2.8431	50/50	2.8431
959492	AF2-240 E	2.4219	50/50	2.4219
959501	AF2-241 C	2.9747	50/50	2.9747
959502	AF2-241 E	2.2903	50/50	2.2903
959741	AF2-265 C	2.3082	50/50	2.3082
959742	AF2-265 E	1.7178	50/50	1.7178
959913	AF2-282 BAT	0.0739	Merchant Transmission	0.0739
959923	AF2-283 BAT	0.0739	Merchant Transmission	0.0739
960022	AF2-293 E	0.0719	Adder	0.16
960041	AF2-295 C	0.6283	Adder	1.39
960042	AF2-295 E	0.4189	Adder	0.93
960051	AF2-296 C	0.4928	Adder	1.09
960052	AF2-296 E	0.3285	Adder	0.73
960271	AF2-318 C	3.4142	50/50	3.4142
960272	AF2-318 E	2.2762	50/50	2.2762
961141	AF2-405	2.6325	50/50	2.6325
961151	AF2-406	19.7437	50/50	19.7437
961201	AF2-411 O1	28.1328	Adder	62.45
961211	AF2-412 O1	13.1877	Adder	29.27
961451	AF2-436	0.0823	Adder	0.18
WEC	WEC	0.3626	Confirmed LTF	0.3626
LGEE	LGEE	0.6321	Confirmed LTF	0.6321
CPL	CPL	0.4029	Confirmed LTF	0.4029
CBM-W2	CBM-W2	8.5176	Confirmed LTF	8.5176
CBM-W1	CBM-W1	15.0871	Confirmed LTF	15.0871
TVA	TVA	1.3524	Confirmed LTF	1.3524
O-066	O-066	26.7120	Confirmed LTF	26.7120

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
CBM-S2	CBM-S2	4.1443	Confirmed LTF	4.1443
CBM-S1	CBM-S1	8.4518	Confirmed LTF	8.4518
G-007	G-007	3.8553	Confirmed LTF	3.8553
MEC	MEC	1.7622	Confirmed LTF	1.7622

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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
100941519	200927	26FOURMILE	PENELEC	200820	26ERIE SE	PENELEC	1	PN-P2-3-PN-230-6G	breaker	245.0	145.86	146.6	DC	4.02

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

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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
100472824	235121	01ARMSTR	AP	235204	01KITTAN	AP	1	ATSI-P2-3-CEI-345-004D	breaker	228.0	120.46	121.01	DC	2.8

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

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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
100472762	235174	01ELKO	AP	235237	01RIDGWY	AP	1	AP-P2-3-WP-230-447	breaker	133.0	153.7	154.99	DC	3.82

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

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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
100473001	235197	01KARNSC	AP	235152	01BUTLER	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	175.14	175.76	DC	2.46

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

11.6.20 Index 20

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
100473045	235240	01COLMBGPN	AP	235202	01KISKIV	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	154.82	155.44	DC	2.07

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

11.6.21 Index 21

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
100473030	235282	01GAR RN	AP	235240	01COLMBGPN	AP	1	ATSI-P1-2-CEI-345-700T	single	151.0	163.29	163.91	DC	2.07

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

11.6.22 Index 22

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
100942507	941190	AE2-113 TAP	PENELEC	200582	26RIDGWAY	PENELEC	1	PN-P7-1-PN-230-002A	tower	160.0	120.93	130.95	DC	16.03

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

11.6.23 Index 23

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
100941280	944300	AF1-098 TAP	PENELEC	200927	26FOURMILE	PENELEC	1	PN-P2-2-PN-230-009	bus	245.0	117.87	118.57	DC	3.79

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

11.6.24 Index 24

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
100941621	945550	AF1-220 TAP	PENELEC	200711	26WHETSTON	PENELEC	1	AP-P2-3-WP-230-708C	breaker	239.0	106.85	109.72	DC	6.86

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

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
100941494	957580	AF2-052 TAP	PENELEC	200668	26FARM VLY	PENELEC	1	PN-P2-3-PN-230-7AT	breaker	160.0	104.64	133.03	DC	45.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	3.7369	50/50	3.7369
200913	26SHAW-D	0.1084	50/50	0.1084
290086	Q-036 E	2.1019	Adder	2.47
936991	AD2-133 C	0.9458	Adder	1.11
936992	AD2-133 E	4.3262	Adder	5.09
941191	AE2-113 C	44.1305	50/50	44.1305
941192	AE2-113 E	47.5143	50/50	47.5143
941321	AE2-126 C	3.7429	50/50	3.7429
941322	AE2-126 E	2.4953	50/50	2.4953
941331	AE2-129 C	0.8245	Adder	0.97
941332	AE2-129 E	0.5496	Adder	0.65
941351	AE2-131 C	0.8245	Adder	0.97
941352	AE2-131 E	0.5496	Adder	0.65
944321	AF1-100 C	6.8123	Adder	8.01
944322	AF1-100 E	4.5415	Adder	5.34
944691	AF1-134 C O1	0.6981	Adder	0.82
944692	AF1-134 E O1	0.4654	Adder	0.55
945161	AF1-181	0.0380	Adder	0.04
945171	AF1-182	0.1900	Adder	0.22
945181	AF1-183	0.0674	Adder	0.08
945551	AF1-220 C	41.3722	50/50	41.3722
945552	AF1-220 E	27.5966	50/50	27.5966
957451	AF2-039 C	0.8477	50/50	0.8477
957452	AF2-039 E	0.5652	50/50	0.5652
957581	AF2-052 C	30.5509	50/50	30.5509
957582	AF2-052 E	14.8626	50/50	14.8626
957941	AF2-088 C	0.4082	50/50	0.4082
957942	AF2-088 E	0.2721	50/50	0.2721
958271	AF2-121 C	0.4370	Adder	0.97
958272	AF2-121 E	0.2913	Adder	0.65
959802	AF2-271 E	0.0700	Adder	0.16
960051	AF2-296 C	0.3700	Adder	0.82
960052	AF2-296 E	0.2467	Adder	0.55
NEWTON	NEWTON	0.1128	Confirmed LTF	0.1128
FARMERCITY	FARMERCITY	0.0058	Confirmed LTF	0.0058
G-007A	G-007A	0.3596	Confirmed LTF	0.3596
VFT	VFT	0.9546	Confirmed LTF	0.9546
CALDERWOOD	CALDERWOOD	0.0383	Confirmed LTF	0.0383
NY	NY	0.3241	Confirmed LTF	0.3241
PRAIRIE	PRAIRIE	0.2609	Confirmed LTF	0.2609
CHEOAH	CHEOAH	0.0385	Confirmed LTF	0.0385

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
EDWARDS	EDWARDS	0.0385	Confirmed LTF	0.0385
TILTON	TILTON	0.0687	Confirmed LTF	0.0687
MADISON	MADISON	0.0060	Confirmed LTF	0.0060
GIBSON	GIBSON	0.0573	Confirmed LTF	0.0573
BLUEG	BLUEG	0.1805	Confirmed LTF	0.1805
TRIMBLE	TRIMBLE	0.0579	Confirmed LTF	0.0579
CATAWBA	CATAWBA	0.0199	Confirmed LTF	0.0199

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
99070800	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	132.07	133.79	DC	14.26

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

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
99070730	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	151.34	153.1	DC	14.29

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
99070830	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	137.09	137.61	DC	7.26

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
AD1-142	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
AE2-224	Bearrock-Johnstown 230 kV	Active

Queue Number	Project Name	Status
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
AF1-306	Squab Hollow 230 kV	Active

Queue Number	Project Name	Status
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 34.5 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
AF2-330	Claysburg-Summit 115 kV	Active

Queue Number	Project Name	Status
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
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
Z2-108	Meyersdale North 115kV	In Service

11.8 Contingency Descriptions

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
PN-P2-3-PN-230-8M_SUM_WIN	CONTINGENCY 'PN-P2-3-PN-230-8M_SUM_WIN' /* GLADE STUCK BREAKER B42 (FOREST/SENECA) DISCONNECT BRANCH FROM BUS 200581 TO BUS 200593 CKT 1 /* 26FOREST 230 26GLADE 230 DISCONNECT BRANCH FROM BUS 200593 TO BUS 200594 CKT 1 /* 26GLADE 230 26SENECA 230 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200642 CKT 1 /* 26SENECA 230 26SENECA#1 14 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200643 CKT 1 /* 26SENECA 230 26SENECA#2 14 DISCONNECT BRANCH FROM BUS 200594 TO BUS 200644 CKT 1 /* 26SENECA 230 26SENECA#3 14 REMOVE MACHINE 1G FROM BUS 200642 /* 26SENECA#1 14 REMOVE MACHINE 2G FROM BUS 200643 /* 26SENECA#2 14 REMOVE MACHINE 3 FROM BUS 200644 /* 26SENECA#3 14 END
PN-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PN-P2-3-PN-230-7AT	CONTINGENCY 'PN-P2-3-PN-230-7AT' /* FOREST STUCK 230KV BREAKER DISCONNECT BRANCH FROM BUS 200581 TO BUS 200593 CKT 1 /* 26FOREST 230 26GLADE 230 DISCONNECT BRANCH FROM BUS 200581 TO BUS 235971 CKT 1 /* 26FOREST 230 01SQUABHLLW 230 DISCONNECT BRANCH FROM BUS 200647 TO BUS 200581 CKT 1 /* 26FOREST 115 26FOREST 230 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

Contingency Name	Contingency Definition
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-P2-2-PN-230-007T	CONTINGENCY 'PN-P2-2-PN-230-007T' /* LEWISTOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 235248 CKT 1 /* 26LEWISTWN 230 01SHINGL 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 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 01MILESB 230 END
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

Contingency Name	Contingency Definition
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
PN-P1-2-PN-230-006	CONTINGENCY 'PN-P1-2-PN-230-006' /* GLADE - FOREST 230KV DISCONNECT BRANCH FROM BUS 200593 TO BUS 200581 CKT 1 /* 26GLADE 230 26FOREST 230 END
AP-P2-2-WP-230-001T	CONTINGENCY 'AP-P2-2-WP-230-001T' /* ELKO #2 230KV BUS DISCONNECT BRANCH FROM BUS 235175 TO BUS 235158 CKT 1 /* 01ELKO 230 01CARB 230 DISCONNECT BRANCH FROM BUS 235175 TO BUS 235236 CKT 1 /* 01ELKO 230 01QUEHAN 230 DISCONNECT BRANCH FROM BUS 235175 TO BUS 200726 CKT 1 /* 01ELKO 230 26SHAWVL 2 230 REDUCE BUS 237007 SHUNT BY 100 PERCENT /* 01ELKO CAP 138 DISCONNECT BUS 237007 /* 01ELKO CAP 138 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-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
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
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

Contingency Name	Contingency Definition
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-P1-3-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
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-P1-2-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
Base Case	
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

Contingency Name	Contingency Definition
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
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 /* 01MILESB 230 01MILESBG 46 DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILESB 230 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

Contingency Name	Contingency Definition
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
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
PN-P1-3-PN-230-011A	CONTINGENCY 'PN-P1-3-PN-230-011A' /* FOREST 230/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200581 TO BUS 200647 CKT 1 /* 26FOREST 230 26FOREST 115 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-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
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

Contingency Name	Contingency Definition
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-P1-2-PN-115-026	CONTINGENCY 'PN-P1-2-PN-115-026' /* FOREST - RIDGWAY 115KV DISCONNECT BRANCH FROM BUS 200647 TO BUS 200582 CKT 1 /* 26FOREST 115 26RIDGWAY 115 END

12 Short Circuit Analysis

The Short Circuit Analysis will be completed 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