



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF2-411
MAINESBURG 345 KV
300 MW Capacity / 300 MW Energy**

July 2020

Table of Contents

1	Introduction.....	6
2	Preface.....	6
3	General	7
4	Point of Interconnection.....	8
4.1	Primary POI	8
4.2	Secondary POI	8
5	Cost Summary	8
6	Transmission Owner Scope of Work.....	9
7	Schedule.....	10
8	Transmission Owner Analysis.....	10
8.1	Power Flow Analysis	10
9	Interconnection Customer Requirements.....	10
9.1	System Protection.....	10
9.2	Compliance Issues and Interconnection Customer Requirements	10
9.3	Power Factor Requirements.....	11
10	Revenue Metering and SCADA Requirements	12
10.1	PJM Requirements	12
10.2	FirstEnergy Requirements	12
11	Summer Peak - Load Flow Analysis - Primary POI	13
11.1	Generation Deliverability	14
11.2	Multiple Facility Contingency	14
11.3	Contribution to Previously Identified Overloads.....	14
11.4	Potential Congestion due to Local Energy Deliverability.....	16
11.5	System Reinforcements - Summer Peak Load Flow - Primary POI.....	20
11.6	Flow Gate Details - Primary POI	31
11.6.1	Index 1	32
11.6.2	Index 2	35
11.6.3	Index 3	38
11.6.4	Index 4	42
11.6.5	Index 5	43
11.6.6	Index 6	46

11.6.7	Index 7	49
11.6.8	Index 8	51
11.6.9	Index 9	53
11.6.10	Index 10.....	57
11.6.11	Index 11.....	61
11.6.12	Index 12.....	65
11.6.13	Index 13.....	69
11.6.14	Index 14.....	75
11.6.15	Index 15.....	81
11.6.16	Index 16.....	87
11.6.17	Index 17.....	91
11.6.18	Index 18.....	93
11.6.19	Index 19.....	99
11.6.20	Index 20.....	101
11.6.21	Index 21.....	103
11.6.22	Index 22.....	105
11.6.23	Index 23.....	107
11.6.24	Index 24.....	110
11.6.25	Index 25.....	113
11.6.26	Index 26.....	117
11.6.27	Index 27.....	119
11.6.28	Index 28.....	123
11.6.29	Index 29.....	127
11.7	Queue Dependencies	133
11.8	Contingency Descriptions - Primary POI.....	137
12	Short Circuit Analysis - Primary POI.....	145
13	Summer Peak - Load Flow Analysis - Secondary POI	146
13.1	Generation Deliverability	147
13.2	Multiple Facility Contingency	147
13.3	Contribution to Previously Identified Overloads.....	149
13.4	Potential Congestion due to Local Energy Deliverability.....	152
13.5	Flow Gate Details - Secondary POI.....	156
13.5.1	Index 1	157

13.5.2	Index 2	160
13.5.3	Index 3	163
13.5.4	Index 4	164
13.5.5	Index 5	165
13.5.6	Index 6	166
13.5.7	Index 7	167
13.5.8	Index 8	168
13.5.9	Index 9	169
13.5.10	Index 10.....	170
13.5.11	Index 11.....	171
13.5.12	Index 12.....	172
13.5.13	Index 13.....	173
13.5.14	Index 14.....	174
13.5.15	Index 15.....	175
13.5.16	Index 16.....	176
13.5.17	Index 17.....	177
13.5.18	Index 18.....	178
13.5.19	Index 19.....	179
13.5.20	Index 20.....	180
13.5.21	Index 21.....	181
13.5.22	Index 22.....	182
13.5.23	Index 23.....	183
13.5.24	Index 24.....	184
13.5.25	Index 25.....	185
13.5.26	Index 26.....	186
13.5.27	Index 27.....	187
13.5.28	Index 28.....	188
13.5.29	Index 29.....	189
13.5.30	Index 30.....	193
13.5.31	Index 31.....	196
13.5.32	Index 32.....	201
13.5.33	Index 33.....	203
13.5.34	Index 34.....	205

13.5.35	Index 35.....	207
13.5.36	Index 36.....	211
13.5.37	Index 37.....	215
13.5.38	Index 38.....	219
13.5.39	Index 39.....	223
13.5.40	Index 40.....	229
13.5.41	Index 41.....	235
13.5.42	Index 42.....	241
13.5.43	Index 43.....	244
13.5.44	Index 44.....	248
13.5.45	Index 45.....	250
13.5.46	Index 46.....	256
13.5.47	Index 47.....	258
13.5.48	Index 48.....	260
13.5.49	Index 49.....	262
13.5.50	Index 50.....	264
13.5.51	Index 51.....	267
13.5.52	Index 52.....	270
13.5.53	Index 53.....	272
13.5.54	Index 54.....	276
13.5.55	Index 55.....	278
13.5.56	Index 56.....	282
13.5.57	Index 57.....	286
13.6	Contingency Descriptions - Secondary POI.....	292
14	Affected Systems	302
14.1	NYISO	302

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.

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

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

3 General

The Interconnection Customer (IC), has proposed a Storage generating facility located in Tioga County, Pennsylvania. The installed facilities will have a total capability of 300 MW with 300 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	AF2-411
Project Name	MAINESBURG 345 KV
State	Pennsylvania
County	Tioga
Transmission Owner	PENELEC
MFO	300
MWE	300
MWC	300
Fuel	Storage
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

AF2-411 will interconnect with the PENELEC transmission system at the Mainesburg 345 kV substation.

4.1 Primary POI

The interconnection of the project at the Primary POI will be accomplished by constructing a new 345 kV breaker position in the existing Mainesburg 345 kV substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection and the associated facilities.

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.

4.2 Secondary POI

The interconnection of the project at a Secondary POI can be accomplished by constructing a new 115 kV breaker position in the existing Mainesburg 115 kV substation. A full scope of work or estimated cost is not provided for the proposed Secondary POI.

5 Cost Summary

The AF2-411 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$4,775,000
Total System Network Upgrade Costs	\$746,619,048
Total Costs	\$751,394,048

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.

6 Transmission Owner Scope of Work

The interconnection of the project at the Primary POI will be accomplished by constructing a new 345 kV breaker position in the existing Mainesburg 345 kV substation. The IC will be responsible for acquiring all easements, properties, and permits that may be required to construct both the new interconnection and the associated facilities.

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

Description	Total Cost
Install disconnect switch, dead-end structure, and associated facilities for generator lead line exit at Mainesburg substation.	\$275,000
Install two 345 kV breakers and associated facilities to create a new double breaker bay.	\$4,500,000
Total Physical Interconnection Costs	\$4,775,000

7 Schedule

Based on the scope of work for the Attachment Facilities and the Direct and/or Non-Direct Connection facilities, it is expected to take a minimum of **30 months** after the signing of an Interconnection Construction Service Agreement to complete the installation. This includes the requirement for the IC to make a preliminary payment that compensates FE for the first three months of the engineering design work that is related to the construction of the interconnection substation. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined Direct Connection and network upgrades, and that all transmission 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

8.1 Power Flow Analysis

FE performed an analysis of its underlying transmission <100 kV system. The AF2-411 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 345 kV circuit breaker to protect the AF2-411 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 AF2-411 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 FirstEnergy Requirements

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

11 Summer Peak - Load Flow Analysis - Primary POI

The Queue Project AF2-411 was evaluated as a 300.0 MW (Capacity 300.0 MW) injection at the Mainesburg 345 kV substation in the PENELEC area. Project AF2-411 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-411 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)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99744158	200706	26N.MESH PN	230.0	PENELEC	200708	26OXBOW	230.0	PENELEC	1	Base Case	single	855.0	99.16	108.81	DC	86.44
99744178	200708	26OXBOW	230.0	PENELEC	208009	LACK	230.0	PPL	1	Base Case	single	855.0	97.58	105.97	DC	87.64
99744179	200708	26OXBOW	230.0	PENELEC	208009	LACK	230.0	PPL	1	PL_P12_001029	single	984.0	99.25	106.52	DC	87.36

11.2 Multiple Facility Contingency

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98949466	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-017	tower	1667.0	99.66	100.44	DC	28.35

11.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98948921	147842	NIAGAR2W	230.0	NYISO	135415	PACKARD2	230.0	NYISO	2	T:61&64	breaker	717.0	101.22	102.34	DC	17.72
99743881	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-003	single	621.0	131.57	134.19	DC	18.97
99743882	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-001	single	621.0	127.71	130.29	DC	18.68
98949081	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	single	1560.0	111.55	113.03	DC	51.35
101443121	200674	26TOWANDA	115.0	PENEL EC	200677	26NO MESH	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202.0	180.4	197.27	DC	34.07
99743892	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	145.86	156.17	DC	69.21
99743893	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	single	515.0	142.54	153.47	DC	59.59
99743212	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P2-2-WP-230-005T	bus	984.0	128.94	133.04	DC	89.21
99744157	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	107.79	117.16	DC	96.6
99743227	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	128.11	132.28	DC	90.44

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 DC	MW IMPACT
99744176	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	106.07	114.27	DC	97.9
99743668	200767	26HOMER CT	230.0	PENEL EC	200793	26SEWARD 2	230.0	PENEL EC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	109.03	114.86	DC	47.58
99743840	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	153.74	160.76	DC	63.99
99743841	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	153.74	160.76	DC	63.99
99743843	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	single	731.0	132.16	139.37	DC	54.38
99743195	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	147.07	157.67	DC	87.89
99743439	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.69	177.55	DC	88.12
99743509	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.07	157.67	DC	87.89
99743975	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	122.93	133.75	DC	88.39
99743979	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	ATSI-P1-2-CEI-345-700T	single	807.0	105.73	112.85	DC	58.75
99743980	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-2-PN-345-107T	single	807.0	105.73	112.85	DC	58.75
99744010	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	119.72	130.26	DC	87.9
99744014	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-2-PN-345-107T	single	824.0	101.22	108.03	DC	57.41
99744015	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	ATSI-P1-2-CEI-345-700T	single	824.0	101.22	108.03	DC	57.41
99743638	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-C	breaker	1147.0	123.98	125.91	DC	50.97
99743639	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-B	breaker	1147.0	123.94	125.87	DC	50.97
99743640	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-A	breaker	1147.0	123.93	125.86	DC	50.97
99743409	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	199.22	202.37	DC	63.05
99743855	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	149.48	156.16	DC	63.47
99743856	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	149.48	156.16	DC	63.47
99743857	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-230-025	single	917.0	125.25	132.5	DC	67.17
99743858	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-3-PN-230-001T	single	917.0	125.25	132.5	DC	67.17
99743859	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	single	731.0	123.64	130.77	DC	53.38
99743538	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001A	breaker	635.0	151.4	154.25	DC	39.54
99743539	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	151.4	154.25	DC	39.54
99744072	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	single	635.0	101.12	107.21	DC	39.61
99744073	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-2-PN-345-107T	single	635.0	104.46	109.25	DC	31.51
99744074	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	ATSI-P1-2-CEI-345-700T	single	635.0	104.46	109.25	DC	31.51
99743716	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P2-3-PN-115-23D	breaker	866.0	103.49	105.12	DC	31.19
98949038	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	single	520.0	125.21	130.23	DC	26.09
99743588	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-C	breaker	1066.0	133.4	135.47	DC	50.97

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC/DC	MW IMPACT
99743589	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-B	breaker	1066.0	133.36	135.44	DC	50.97
99743590	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	133.35	135.43	DC	50.97
99743936	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	single	546.0	133.38	143.7	DC	59.59
99743937	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	133.82	143.34	DC	69.21
101442891	200927	26FOURMILE	115.0	PENEL EC	200820	26ERIE SE	115.0	PENEL EC	1	PN-P2-3-PN-230-6G	breaker	245.0	151.56	154.59	DC	16.38
99743643	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P42_001057	breaker	1167.0	120.21	122.06	DC	47.15
99743700	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001056	breaker	1145.0	107.03	108.72	DC	42.41
99743701	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001055	breaker	1145.0	107.03	108.72	DC	42.41
100836888	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	single	179.0	190.51	194.3	DC	15.04
100836889	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	190.51	194.3	DC	15.04
100836925	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	268.0	145.37	148.05	DC	15.92
100836926	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	single	268.0	145.37	148.05	DC	15.92
98949463	239036	02PERRY	345.0	ATSI	239334	02L.CENTER	345.0	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	138.85	139.78	DC	33.91
98949465	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	130.74	131.64	DC	32.75
99744102	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMAN+	230.0	PENEL EC	1	Base Case	single	546.0	119.25	124.03	DC	26.09
99743198	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	147.06	157.66	DC	87.89
99743514	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.06	157.66	DC	87.89
99744018	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	119.72	130.26	DC	87.9
99744022	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-2-PN-345-107T	single	824.0	101.21	108.02	DC	57.41
99744023	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	ATSI-P1-2-CEI-345-700T	single	824.0	101.21	108.02	DC	57.41
99743444	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.68	177.54	DC	88.12
99743985	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	122.92	133.74	DC	88.39
99743989	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-2-PN-345-107T	single	807.0	105.72	112.84	DC	58.75
99743990	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	ATSI-P1-2-CEI-345-700T	single	807.0	105.72	112.84	DC	58.75
99743543	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	breaker	634.0	150.9	153.75	DC	39.54
99743544	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	150.9	153.75	DC	39.54
99744081	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	single	634.0	100.55	106.66	DC	39.61
99744082	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-2-PN-345-107T	single	634.0	103.88	108.68	DC	31.51
99744083	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	ATSI-P1-2-CEI-345-700T	single	634.0	103.88	108.68	DC	31.51

11.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed

with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99744224	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operati on	776.0	111.35	113.01	DC	28.64
98949076	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	operati on	1560.0	131.75	133.23	DC	51.35
98949077	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	ATSI-P1-1-CEI-345-711	operati on	1900.0	119.69	120.9	DC	51.35
101443120	200674	26TOWAND A	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operati on	202.0	221.11	228.46	DC	34.07
101443424	200674	26TOWAND A	115.0	PENEL EC	200676	26E.SAYRE	115.0	PENEL EC	1	PN-P1-2-PN-230-101T	operati on	246.0	95.4	101.58	DC	28.67
99743885	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operati on	515.0	172.46	176.77	DC	59.59
99743886	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	615.0	165.02	169.75	DC	69.21
99743887	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN2302301	operati on	615.0	165.02	169.75	DC	69.21
99743888	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP2301	operati on	615.0	165.02	169.75	DC	69.21
99744117	200675	26E.TWAND A	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PN-P1-2-PN-230-102T	operati on	531.0	133.04	135.68	DC	26.58
99743825	200676	26E.SAYRE	115.0	PENEL EC	130836	N.WAV115	115.0	NYISO	1	PN-P1-2-PN-230-101T	operati on	128.0	196.06	207.93	DC	28.7
99744150	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	Base Case	operati on	855.0	122.93	127.5	DC	86.44
99744151	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP2301	operati on	984.0	124.02	128.46	DC	96.6
99744152	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN2302301	operati on	984.0	124.02	128.46	DC	96.6
99744153	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	984.0	124.02	128.46	DC	96.6
99744170	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	984.0	120.33	124.84	DC	97.9

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 DC	MW IMPA CT
99744171	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	20090826CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operati on	984.0	120.33	124.84	DC	97.9
99744172	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	20090826CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operati on	984.0	120.33	124.84	DC	97.9
99744173	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	Base Case	operati on	855.0	116.68	121.32	DC	87.64
99743835	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operati on	917.0	208.27	211.42	DC	63.99
99743836	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operati on	917.0	208.27	211.42	DC	63.99
99743837	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	operati on	731.0	187.98	195.28	DC	54.38
99743974	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	operati on	807.0	150.42	161.31	DC	88.39
99743978	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	Base Case	operati on	653.0	106.64	114.36	DC	50.71
99744009	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	146.49	157.09	DC	87.9
99744013	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	Base Case	operati on	647.0	105.2	112.81	DC	49.56
99744208	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P1_2-PN-230-0103	operati on	1147.0	121.15	123.14	DC	50.12
99743850	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	198.28	201.45	DC	63.47
99743851	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	198.28	201.45	DC	63.47
99743854	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operati on	731.0	175.11	178.46	DC	53.38
99744067	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operati on	635.0	145.11	147.96	DC	39.61
99744070	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	Base Case	operati on	494.0	124.27	126.73	DC	26.5
99744269	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-008	operati on	866.0	102.57	104.08	DC	29.01
99744270	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-027	operati on	866.0	102.57	104.08	DC	29.01
98949029	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	PL_P12_000 193	operati on	621.0	146.45	149.64	DC	44.29
98949033	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	operati on	520.0	143.54	145.79	DC	26.09
99744165	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P1_2-PN-230-0103	operati on	1066.0	130.35	132.5	DC	50.12
99744169	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	Base Case	operati on	861.0	101.39	102.83	DC	31.94
99743931	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	161.61	165.68	DC	59.59
99743932	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operati on	666.0	151.51	155.88	DC	69.21

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99743933	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	666.0	151.51	155.88	DC	69.21
99743934	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMAN+ 230919490AA2-000TAP 230 1	operation	666.0	151.51	155.88	DC	69.21
99743966	200940	26SCOTCHH LLW	230.0	PENEL EC	200675	26E.TWANDA	230.0	PENEL EC	1	Base Case	operation	491.0	114.81	117.24	DC	22.57
99744250	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100329	operation	1145.0	105.02	106.66	DC	41.01
99744251	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100347	operation	1145.0	105.02	106.66	DC	41.01
99744263	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100348	operation	1167.0	103.07	104.68	DC	41.03
99744264	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100328	operation	1167.0	103.07	104.68	DC	41.03
100836886	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	179.0	248.28	252.07	DC	15.04
100836887	235197	01KARNSC	138.0	AP	235152	01BUTLER	138.0	AP	1	PN-P1-2-PN-345-107T	operation	179.0	248.28	252.07	DC	15.04
100836923	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operation	268.0	188.09	190.77	DC	15.92
100836924	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operation	268.0	188.09	190.77	DC	15.92
98949170	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	ATSI-P1-3-SYS-345-722	operation	1891.0	103.98	105.17	DC	49.91
98949171	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	Base Case	operation	1534.0	99.57	100.83	DC	42.67
99744038	919200	AA1-144TAP	230.0	PENEL EC	200940	26SCOTCHH LLW	230.0	PENEL EC	1	Base Case	operation	520.0	110.94	113.24	DC	22.57
99744096	919490	AA2-000TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	PL_P12_000193	operation	666.0	136.56	139.53	DC	44.29
99744097	919490	AA2-000TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	Base Case	operation	546.0	136.71	138.85	DC	26.09
99744017	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	146.49	157.09	DC	87.9
99744021	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	Base Case	operation	647.0	105.2	112.81	DC	49.56
99743984	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	150.41	161.3	DC	88.39
99743988	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	Base Case	operation	653.0	106.63	114.35	DC	50.71
99744075	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	144.61	147.47	DC	39.61
99744080	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	Base Case	operation	493.0	123.57	126.03	DC	26.5

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
98948921	4	NIAGAR2W 230.0 kV - PACKARD2 230.0 kV Ckt 2	<u>NYISO</u> NonPJMArea (948): The external (i.e. Non-PJM) Transmission Owner, NYISO, will not evaluate this violation until the impact study phase.	\$0
99743439,9974 3979,99743980, 99743975	12	26HOMER CY 345.0 kV - STAR601 1.0 kV Ckt N	<u>PENELEC</u> PN-AF2-F-0005 (1709) : 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 (1914) : 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 (1915) : Replace 5.83 Amp BDD relay (thermal) Project Type : FAC Cost : \$357,000 Time Estimate : 12.0 Months	\$112,133,000
99743590,9974 3589,99743588	18	26CONEMAGH 230.0 kV - CONEM-GH 500.0 kV Ckt 3		
99743198,9974 3514,99744023, 99744022,9974 4018	27	STAR602 1.0 kV - 26HOMER CT 230.0 kV Ckt S		
99743843,9974 3840,99743841	10	26HOMER CT 230.0 kV - 26SHELOCTA 230.0 kV Ckt 1		
99744072,9974 4073,99743538, 99743539,9974 4074	15	26KEYSTONE 230.0 kV - STAR592 1.0 kV Ckt 4		
99743859,9974 3858,99743409, 99743855,9974 3857,99743856	14	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
99743640,9974 3639,99743638	13	26SEWARD 2 230.0 kV - 26CONEMAGH 230.0 kV Ckt 1		
99743668	9	26HOMER CT 230.0 kV - 26SEWARD 2 230.0 kV Ckt 1		
99744010,9974 4014,99743195, 99743509,9974 4015	11	26HOMER CY 345.0 kV - STAR602 1.0 kV Ckt S		
99743990,9974 3989,99743985, 99743444	28	STAR601 1.0 kV - 26HOMER CT 230.0 kV Ckt N		
99743543,9974 4082,99744081, 99744083,9974 3544	29	STAR592 1.0 kV - KEYSTONE 500.0 kV Ckt 4		

ID	Idx	Facility	Upgrade Description	Cost
99744102	26	AA2-000 TAP 230.0 kV - 26CHAPMAN+ 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0035 (1779) : Reconductor 0.1 miles of transmission line Project Type : FAC Cost : \$427,980 Time Estimate : 18.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$427,980
99743227,9974 4179,99744178, 99744176	2	26OXBOW 230.0 kV - LACK 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0048A (1813) : Construct a new 230 kV circuit (approximately 27 miles) between North Meshoppen and Lackawanna 230 kV. Connect the new circuit between at North Meshoppen substation. Project Type : CON Cost : \$115,554,600 Time Estimate : 72.0 Months	\$115,554,600
99744158,9974 4157,99743212	1	26N.MESHPN 230.0 kV - 26OXBOW 230.0 kV Ckt 1	<u>PPL</u> Not a PPL Violation Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	

ID	Idx	Facility	Upgrade Description	Cost
99743893,99743892	8	26E.TWANDA 230.0 kV - 26CANYON 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0046A (1805) : Replace substation conductor at East Towanda Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months PN-AF2-F-0046B (1806): Reconductor 13.01 miles of transmission line. Replace transmission line drops at East Towanda Project Type : FAC Cost : \$55,680,198 Time Estimate : 54.0 Months PN-AF2-F-0046C (1807) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months PN-AF2-F-0046D (1808) : Replace line trap at East Towanda Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months PN-AF2-F-0046E (1809) : Adjust/replace metering and line relaying at East Towanda Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$56,689,008

ID	Idx	Facility	Upgrade Description	Cost
98949038	17	26CHAPMAN+ 230.0 kV - 01MOSHAN 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0006A (683) : Replace 1033.5 ACSR bus conductor at Moshannon substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0006B (684) : Replace 1033.5 ACSR risers at Moshannon substation . Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months <u>PENELEC:</u> PN-AF2-F-0034A (1778) : Reconductor 29.20 miles of transmission line Project Type : FAC Cost : \$124,970,160 Time Estimate : 72.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$125,295,791
99743716	16	26ERIE SE 230.0 kV - 26ERIE SO 345.0 kV Ckt 8	<u>PENELEC</u> PN-AF2-F-0003 (1707) : Replace circuit switcher on the high side of the transformer with a 230 kV breaker Project Type : CON Cost : \$978,240 Time Estimate : 12.0 Months	\$978,240
99743701,9974 3700	22	LACK 230.0 kV - LACKAW 500.0 kV Ckt 4	<u>PPL</u> R-PL-0008 (1920) : Re-Terminate LACK T4 500/230kV & LACK T3 500/230kV Project Type : CON Cost : \$7,000,000 Time Estimate : 30.0 Months	\$7,000,000
99743643	21	LACK 230.0 kV - LACKAW 500.0 kV Ckt 3		
101442891	20	26FOURMILE 115.0 kV - 26ERIE SE 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0020A (1748) : 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 (1749) : 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
99743936,9974 3937	19	26CANYON 230.0 kV - 26N.MESHPN 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0047A (1810) : Reconductor 9.24 miles of transmission line Project Type : FAC Cost : \$39,545,352 Time Estimate : 48.0 Months PN-AF2-F-0047B (1811) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months PN-AF2-F-0047C (1812) : Adjust line relaying as necessary at North Meshoppen Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months b2952 (1864) : PJM Baseline Upgrade b2952. Replace the North Meshoppen #3 230/115kV transformer eliminating the old reactor and installing two breakers to complete a 230kV ring bus at North Meshoppen. The baseline project has a projected in-service date of 06/01/2022. Project Type : CON Cost : \$0 Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$40,248,462
99743882,9974 3881	5	26GLADE 230.0 kV - 26WARREN 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0019A (1743) : Replace substation conductor at Warren and Glade substations Project Type : FAC Cost : \$305,700 Time Estimate : 12.0 Months PN-AF2-F-0019B (1744) : Rebuild 11.53 miles of transmission line Project Type : FAC Cost : \$42,296,652 Time Estimate : 48.0 Months PN-AF2-F-0019C (1745) : Replace line trap at Glade Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months PN-AF2-F-0019D (1746) : Adjust/replace the relays and meters Project Type : FAC Cost : \$978,240 Time Estimate : 12.0 Months	\$43,733,442

ID	Idx	Facility	Upgrade Description	Cost
100836889,100 836888	23	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
98949081	6	26ERIE W 345.0 kV - 02AT 345.0 kV Ckt 1	<u>ATSI</u> CEI-001B (743) : Replace the (2) 1200 A WaveTrap at Ashtabula on the PY-AT-EW 29T 345 kV line. Wavetraps need to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$376,808 Time Estimate : 12.0 Months CEI-001C (744) : Upgrade the (4) 2000 A CTs at Ashtabula on the PY-AT-EW 29T 345 kV line. CTs need to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$1,256,025 Time Estimate : 12.0 Months CEI-001D (745) : Adjust/upgrade the Impedance Relays at Ashtabula on the PY-AT-EW 29T 345 kV Line. They will need to exceed to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$565,211 Time Estimate : 12.0 Months CEI-001E (746) : Replace the 2000 A disconnect switch at Ashtabula on the PY-AT-EW 29T 345 kV Line. The new switch needs to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$251,205 Time Estimate : 12.0 Months CEI-001F (747) : Replace the 3500 SAC substation conductor at Ashtabula on the PY-AT-EW 29T 345 kV line. The substation conductor needs to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-001G (748) : Reconductor the ATSI owned portion of the Erie West-Ashtabula 3-point tap 345 kV Line (~ 15 miles from Ashtabula to structure 13083). The existing conductor is (2) 954 ACSR conductor and the new conductor is (2) 795 ACSS conductor. Project Type : Facility Cost : \$37,680,750 Time Estimate : 30.0 Months CEI-001H (749) : Protection Upgrades at Perry: Remove TC10B carrier sets and replace with UPLC II. Project Type : Facility Cost : \$565,211 Time Estimate : 12.0 Months <u>PENELEC</u> PN-AF2-F-0004 (1708) : Reconductor 7.2 miles of line. Refer to CEI-004A for ATSI (CEI) scope of work (Engineering to determine if a full rebuild is necessary) Project Type : FAC Cost : \$18,342,000 Time Estimate : 24.0 Months	\$59,225,614

ID	Idx	Facility	Upgrade Description	Cost
98949463	25	02PERRY 345.0 kV - 02L.CENTER 345.0 kV Ckt 1	ATSI CEI-002B (750) : Upgrade existing 954 ACSR 48/7 substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002C (751) : Upgrade existing 3500 kcmil AL 127 substation conductor at Perry on the Leroy Center - Perry 345 kV line to exceed 1882 MVA (SN)/ 2325 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002D (752) : Reconductor the entire Leroy Center - Perry S6 345 kV Line (9.3 miles) with 795 kcmil ACSS 26/7 (2 conductors per phase). The existing conductor is 954 ACSR. Project Type : Facility Cost : \$58,405,162 Time Estimate : 48.0 Months CEI-002E (753) : Replace the 3000 A WaveTrap on the Leroy Center - Perry 345 kV line at Perry with a 4000 A WaveTrap. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002F (754) : Replace the 3000 A WaveTrap at Leroy Center on the Leroy Center - Perry 345 kV line with a 4000 A WaveTrap. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002G (755) : Upgrade existing 1590 SAC substation conductor at Leroy Center to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002H (756) : Upgrade existing 1591 AAC substation conductor at Leroy Center to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-002I (757) : Upgrade the 4.00 IPS AL pipe at Perry to exceed 1882 MVA (SN)/ 2325 MVA (SE) on the Leroy Center - Perry 345 kV line. Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months	\$59,723,990

ID	Idx	Facility	Upgrade Description	Cost
98949465,98949466	3	02PERRY 345.0 kV - 02EASTLK 345.0 kV Ckt 1	ATSI CEI-003B (758) : Replace the 954 ACSR substation conductor at Eastlake on the Eastlake - Perry 345 S8 345 Kv line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-003C (759) : Replace 3500 SAC 127 substation conductor at Eastlake on the Eastlake - Perry 345 kV line to exceed 2241 MVA (SN)/ 2578 MVA (SE). Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-003D (760) : Reconductor the entire Eastlake - Perry S8 345 kV Line (~22 miles) with 795 kcmil ACSS 26/7 (2 conductors per phase). The existing conductor is (2) 954 ACSR and 3500 ACSR. Project Type : Facility Cost : \$40,192,800 Time Estimate : 30.0 Months CEI-003E (761) : Replace the 3000 A WaveTrap at Perry with a 4000 A WaveTrap on the Eastlake - Perry 345 kV line Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-003F (762) : Replace the 3000 A WaveTrap at Eastlake with a 4000 A WaveTrap on the Eastlake - Perry 345 kV line Project Type : Facility Cost : \$188,404 Time Estimate : 12.0 Months CEI-003G (763) : Protection Upgrade: replacing line CCVT, line tuner, and coax based on condition at Perry AND Eastlake on the EL-PY S8 345 kV line. Project Type : Facility Cost : \$1,130,422 Time Estimate : 12.0 Months	\$42,076,838

ID	Idx	Facility	Upgrade Description	Cost
100836926,100836925	24	01KISSNG 138.0 kV - 01KARNSC 138.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0003A (670) : Reconductor 7.5 miles of 556.5 ACSR from Karns City to Kissinger Jct (47 spans) Project Type : FAC Cost : \$19,537,875 Time Estimate : 42.0 Months WP-AF2-F-0003B (671) : Replace relaying (RT, WT, MT, ZR, OR) at Karns City substation. Project Type : FAC Cost : \$455,884 Time Estimate : 12.0 Months WP-AF2-F-0003C (672) : Replace 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-0003D (673) : Replace 1200 A circuit breaker at Karns City substation. Project Type : FAC Cost : \$781,515 Time Estimate : 12.0 Months WP-AF2-F-0003E (674) : Replace 954 ACSR risers at Karns City substation. Project Type : FAC Cost : \$130,252 Time Estimate : 12.0 Months	\$21,035,779
101443121	7	26TOWANDA 115.0 kV - 26NO MESHO 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0045 (1804) : 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 (1906) : 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 (1907) : 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 (1908) : Expand the existing North Meshoppen 115 kV yard to a breaker-and-a-half configuration. (s1729) Project Type : FAC Cost : \$0	\$6,114,000

ID	Idx	Facility	Upgrade Description	Cost
N/A	N/A	26E.TWANDA 230.0 kV - HILSD230 230.0 kV Ckt 1	Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$0
N/A	N/A	WESTOVER115 115.0 kV - 26LAUREL L 115.0 kV Ckt 1	Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$0
			TOTAL COST	\$746,619,048

11.6 Flow Gate Details - Primary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

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
99743212	200706	26N.MESHPN	PENELEC	200708	26OXBOW	PENELEC	1	AP-P2-2-WP-230-005T	bus	984.0	128.94	133.04	DC	89.21

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5899	Adder	0.69
941321	AE2-126 C	1.4861	Adder	1.75
941322	AE2-126 E	0.9908	Adder	1.17
941421	AE2-139 C	21.8690	Adder	25.73
941422	AE2-139 E	14.5793	Adder	17.15
942351	AE2-248 C	1.3016	Adder	1.53
942352	AE2-248 E	0.8677	Adder	1.02
942491	AE2-262 C	7.2633	Adder	8.55
942492	AE2-262 E	4.8809	Adder	5.74
942501	AE2-263 C	6.8275	Adder	8.03
942502	AE2-263 E	4.5584	Adder	5.36
943751	AF1-043	22.8185	Adder	26.85
944001	AF1-068 C O1	1.7269	Adder	2.03
944002	AF1-068 E O1	0.9714	Adder	1.14
944311	AF1-099 C	11.0256	Adder	12.97
944312	AF1-099 E	7.3504	Adder	8.65
944321	AF1-100 C	21.1268	Adder	24.86
944322	AF1-100 E	14.0845	Adder	16.57
944411	AF1-106 O1	6.5739	Adder	7.73
944471	AF1-112 C	1.7404	Adder	2.05
944472	AF1-112 E	0.9790	Adder	1.15
944671	AF1-132 C O1	1.6151	Adder	1.9
944672	AF1-132 E O1	1.0767	Adder	1.27
944771	AF1-142 C	17.6410	Adder	20.75
944772	AF1-142 E	11.7607	Adder	13.84
944841	AF1-149 C	1.6530	Adder	1.94
944842	AF1-149 E	1.1020	Adder	1.3
944881	AF1-153 C O1	1.4524	Adder	1.71
944882	AF1-153 E O1	0.9683	Adder	1.14
944901	AF1-155 C	1.4455	Adder	1.7
944902	AF1-155 E	0.9637	Adder	1.13
945161	AF1-181	0.1102	Adder	0.13
945171	AF1-182	0.5491	Adder	0.65
945181	AF1-183	0.1292	Adder	0.15
945331	AF1-198	0.7271	Adder	0.86
945491	AF1-214 C	1.6532	Adder	1.94
945492	AF1-214 E	1.1021	Adder	1.3
945551	AF1-220 C	11.5236	Adder	13.56
945552	AF1-220 E	7.6866	Adder	9.04
946111	AF1-276 C	8.5009	Adder	10.0
946112	AF1-276 E	4.1870	Adder	4.93
946121	AF1-277 C	8.5009	Adder	10.0
946122	AF1-277 E	4.1870	Adder	4.93
946131	AF1-278 C	6.7754	Adder	7.97
946132	AF1-278 E	3.3699	Adder	3.96
946211	AF1-286 C O1	2.6624	Adder	3.13
946212	AF1-286 E O1	1.8078	Adder	2.13
946421	AF1-306 C	6.3561	Adder	7.48
946422	AF1-306 E	25.4246	Adder	29.91
957451	AF2-039 C	0.5142	Adder	1.14
957452	AF2-039 E	0.3428	Adder	0.76
957581	AF2-052 C	2.7165	Adder	6.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3215	Adder	2.93
957681	AF2-062 C	8.1917	Adder	18.18
957682	AF2-062 E	5.4611	Adder	12.12
957941	AF2-088 C	0.2476	Adder	0.55
957942	AF2-088 E	0.1651	Adder	0.37
959061	AF2-197 C O1	18.2811	50/50	18.2811
959062	AF2-197 E O1	27.4216	50/50	27.4216
959471	AF2-238 C	2.0124	Adder	4.47
959472	AF2-238 E	1.3416	Adder	2.98
959481	AF2-239 C	5.0215	50/50	5.0215
959482	AF2-239 E	4.0263	50/50	4.0263
959491	AF2-240 C	1.8815	Adder	4.18
959492	AF2-240 E	1.6027	Adder	3.56
959501	AF2-241 C	1.9686	Adder	4.37
959502	AF2-241 E	1.5156	Adder	3.36
959741	AF2-265 C	1.4422	Adder	3.2
959742	AF2-265 E	1.0733	Adder	2.38
959913	AF2-282 BAT	0.1007	Merchant Transmission	0.1007
959923	AF2-283 BAT	0.1007	Merchant Transmission	0.1007
960022	AF2-293 E	0.0854	Adder	0.19
960031	AF2-294 C	2.3176	Adder	5.14
960032	AF2-294 E	1.5451	Adder	3.43
960041	AF2-295 C	0.7661	Adder	1.7
960042	AF2-295 E	0.5108	Adder	1.13
960271	AF2-318 C	5.4287	50/50	5.4287
960272	AF2-318 E	3.6191	50/50	3.6191
961141	AF2-405	1.7421	Adder	3.87
961151	AF2-406	13.0656	Adder	29.0
961201	AF2-411 O1	40.1896	Adder	89.21
961211	AF2-412 O1	18.8515	Adder	41.85
961451	AF2-436	0.6673	50/50	0.6673
WEC	WEC	0.4804	Confirmed LTF	0.4804
LGEE	LGEE	0.8369	Confirmed LTF	0.8369
CPL	CPL	0.5365	Confirmed LTF	0.5365
CBM-W2	CBM-W2	11.2858	Confirmed LTF	11.2858
CBM-W1	CBM-W1	19.9785	Confirmed LTF	19.9785
TVA	TVA	1.7934	Confirmed LTF	1.7934
O-066	O-066	35.7840	Confirmed LTF	35.7840
CBM-S2	CBM-S2	5.5083	Confirmed LTF	5.5083
CBM-S1	CBM-S1	11.2038	Confirmed LTF	11.2038
G-007	G-007	5.1574	Confirmed LTF	5.1574
MEC	MEC	2.3342	Confirmed LTF	2.3342

11.6.2 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
99743227	200708	26OXBOW	PENELEC	208009	LACK	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	128.11	132.28	DC	90.44

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5968	Adder	0.7
941321	AE2-126 C	1.5042	Adder	1.77
941322	AE2-126 E	1.0028	Adder	1.18
941421	AE2-139 C	22.1140	Adder	26.02
941422	AE2-139 E	14.7426	Adder	17.34
942351	AE2-248 C	1.3168	Adder	1.55
942352	AE2-248 E	0.8779	Adder	1.03
942491	AE2-262 C	7.3483	Adder	8.65
942492	AE2-262 E	4.9380	Adder	5.81
942501	AE2-263 C	6.9074	Adder	8.13
942502	AE2-263 E	4.6118	Adder	5.43
943751	AF1-043	23.0800	Adder	27.15
944001	AF1-068 C O1	1.7469	Adder	2.06
944002	AF1-068 E O1	0.9826	Adder	1.16
944311	AF1-099 C	11.1546	Adder	13.12
944312	AF1-099 E	7.4364	Adder	8.75
944321	AF1-100 C	21.3766	Adder	25.15
944322	AF1-100 E	14.2511	Adder	16.77
944411	AF1-106 O1	6.6708	Adder	7.85
944471	AF1-112 C	1.7605	Adder	2.07
944472	AF1-112 E	0.9903	Adder	1.17
944671	AF1-132 C O1	1.6338	Adder	1.92
944672	AF1-132 E O1	1.0892	Adder	1.28
944771	AF1-142 C	17.8474	Adder	21.0
944772	AF1-142 E	11.8983	Adder	14.0
944841	AF1-149 C	1.6722	Adder	1.97
944842	AF1-149 E	1.1148	Adder	1.31
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4630	Adder	1.72
944902	AF1-155 E	0.9753	Adder	1.15
945161	AF1-181	0.1115	Adder	0.13
945171	AF1-182	0.5556	Adder	0.65
945181	AF1-183	0.1307	Adder	0.15
945331	AF1-198	0.7368	Adder	0.87
945491	AF1-214 C	1.6724	Adder	1.97
945492	AF1-214 E	1.1149	Adder	1.31
945551	AF1-220 C	11.6659	Adder	13.72
945552	AF1-220 E	7.7816	Adder	9.15
946111	AF1-276 C	8.6131	Adder	10.13
946112	AF1-276 E	4.2423	Adder	4.99
946121	AF1-277 C	8.6131	Adder	10.13
946122	AF1-277 E	4.2423	Adder	4.99
946131	AF1-278 C	6.8648	Adder	8.08
946132	AF1-278 E	3.4144	Adder	4.02
946211	AF1-286 C O1	2.7017	Adder	3.18
946212	AF1-286 E O1	1.8345	Adder	2.16
946421	AF1-306 C	6.4328	Adder	7.57
946422	AF1-306 E	25.7313	Adder	30.27
957451	AF2-039 C	0.5204	Adder	1.16
957452	AF2-039 E	0.3469	Adder	0.77
957581	AF2-052 C	2.7523	Adder	6.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3390	Adder	2.97
957681	AF2-062 C	8.3004	Adder	18.42
957682	AF2-062 E	5.5336	Adder	12.28
957941	AF2-088 C	0.2506	Adder	0.56
957942	AF2-088 E	0.1670	Adder	0.37
959061	AF2-197 C O1	8.3668	Adder	18.57
959062	AF2-197 E O1	12.5502	Adder	27.86
959471	AF2-238 C	2.0414	Adder	4.53
959472	AF2-238 E	1.3609	Adder	3.02
959481	AF2-239 C	5.1860	50/50	5.1860
959482	AF2-239 E	4.1582	50/50	4.1582
959491	AF2-240 C	1.9092	Adder	4.24
959492	AF2-240 E	1.6263	Adder	3.61
959501	AF2-241 C	1.9976	Adder	4.43
959502	AF2-241 E	1.5380	Adder	3.41
959741	AF2-265 C	1.4630	Adder	3.25
959742	AF2-265 E	1.0887	Adder	2.42
960022	AF2-293 E	0.0864	Adder	0.19
960031	AF2-294 C	2.3602	Adder	5.24
960032	AF2-294 E	1.5735	Adder	3.49
960041	AF2-295 C	0.7754	Adder	1.72
960042	AF2-295 E	0.5169	Adder	1.15
960271	AF2-318 C	5.6065	50/50	5.6065
960272	AF2-318 E	3.7377	50/50	3.7377
961141	AF2-405	1.7678	Adder	3.92
961151	AF2-406	13.2582	Adder	29.43
961201	AF2-411 O1	40.7423	Adder	90.44
961211	AF2-412 O1	19.1215	Adder	42.45
961451	AF2-436	0.7745	50/50	0.7745
961461	AF2-437	1.0101	50/50	1.0101
WEC	WEC	0.4864	Confirmed LTF	0.4864
LGEE	LGEE	0.8472	Confirmed LTF	0.8472
CPL	CPL	0.5431	Confirmed LTF	0.5431
CBM-W2	CBM-W2	11.4250	Confirmed LTF	11.4250
CBM-W1	CBM-W1	20.2287	Confirmed LTF	20.2287
TVA	TVA	1.8158	Confirmed LTF	1.8158
O-066	O-066	36.2611	Confirmed LTF	36.2611
CBM-S2	CBM-S2	5.5777	Confirmed LTF	5.5777
CBM-S1	CBM-S1	11.3486	Confirmed LTF	11.3486
G-007	G-007	5.2260	Confirmed LTF	5.2260
MEC	MEC	2.3644	Confirmed LTF	2.3644

11.6.3 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
98949465	239036	02PERRY	ATSI	238684	02EASTLK	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	130.74	131.64	DC	32.75

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944262	AF1-094 E	2.4032	50/50	2.4032
944281	AF1-096 C	2.9040	50/50	2.9040
944282	AF1-096 E	1.9360	50/50	1.9360
944301	AF1-098 C	15.0706	50/50	15.0706
944302	AF1-098 E	10.0470	50/50	10.0470
944311	AF1-099 C	6.5650	Adder	7.72
944312	AF1-099 E	4.3767	Adder	5.15
944321	AF1-100 C	13.9549	Adder	16.42
944322	AF1-100 E	9.3032	Adder	10.94
944381	AF1-103 O1	3.9839	Adder	4.69
944391	AF1-104 O1	7.4304	50/50	7.4304
944411	AF1-106 O1	1.7660	Adder	2.08
944691	AF1-134 C O1	1.0126	Adder	1.19
944692	AF1-134 E O1	0.6750	Adder	0.79
944771	AF1-142 C	10.5041	Adder	12.36
944772	AF1-142 E	7.0027	Adder	8.24
944881	AF1-153 C O1	1.2907	Adder	1.52
944882	AF1-153 E O1	0.8605	Adder	1.01
944901	AF1-155 C	1.2910	Adder	1.52
944902	AF1-155 E	0.8607	Adder	1.01
945021	AF1-167 C	0.8270	Adder	0.97
945022	AF1-167 E	0.5523	Adder	0.65
945051	AF1-170 C	16.4447	50/50	16.4447
945052	AF1-170 E	10.9632	50/50	10.9632
945121	AF1-177	0.9960	Adder	1.17
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0921	Adder	0.11
945331	AF1-198	0.2238	Adder	0.26
945451	AF1-210 C	0.9001	Adder	1.06
945452	AF1-210 E	0.6001	Adder	0.71
945551	AF1-220 C	10.3912	Adder	12.22
945552	AF1-220 E	6.9313	Adder	8.15
945751	AF1-240 C O1	1.2558	Adder	1.48
945752	AF1-240 E O1	0.8372	Adder	0.98
946111	AF1-276 C	9.4229	Adder	11.09
946112	AF1-276 E	4.6412	Adder	5.46
946121	AF1-277 C	9.4229	Adder	11.09
946122	AF1-277 E	4.6412	Adder	5.46
946131	AF1-278 C	7.5102	Adder	8.84
946132	AF1-278 E	3.7354	Adder	4.39
946211	AF1-286 C O1	0.7152	Adder	0.84
946212	AF1-286 E O1	0.4856	Adder	0.57
946221	AF1-287 C	3.9836	50/50	3.9836
946222	AF1-287 E	2.6558	50/50	2.6558
946381	AF1-302 C	1.8954	Adder	2.23
946382	AF1-302 E	2.5272	Adder	2.97
946401	AF1-304 C	11.7132	Adder	13.78
946402	AF1-304 E	7.8088	Adder	9.19
946421	AF1-306 C	5.4891	Adder	6.46
946422	AF1-306 E	21.9565	Adder	25.83
946771	AF1-217 C O2	3.9836	50/50	3.9836

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946772	AF1-217 E O2	2.6558	50/50	2.6558
957161	AF2-010 C	13.6905	50/50	13.6905
957162	AF2-010 E	9.2262	50/50	9.2262
957451	AF2-039 C	0.3912	Adder	0.87
957452	AF2-039 E	0.2608	Adder	0.58
957571	AF2-051 C O1	9.8703	50/50	9.8703
957572	AF2-051 E O1	5.0847	50/50	5.0847
957581	AF2-052 C	2.4621	Adder	5.47
957582	AF2-052 E	1.1978	Adder	2.66
957681	AF2-062 C	8.6820	Adder	19.27
957682	AF2-062 E	5.7880	Adder	12.85
957941	AF2-088 C	0.1884	Adder	0.42
957942	AF2-088 E	0.1256	Adder	0.28
957951	AF2-089 C	0.7986	50/50	0.7986
957952	AF2-089 E	0.4114	50/50	0.4114
958031	AF2-097 C	1.0465	50/50	1.0465
958032	AF2-097 E	0.6977	50/50	0.6977
958361	AF2-130 C	0.9739	Adder	2.16
958362	AF2-130 E	0.6493	Adder	1.44
958731	AF2-164 C O1	11.5008	50/50	11.5008
958732	AF2-164 E O1	7.6672	50/50	7.6672
958741	AF2-165 C	1.1642	Adder	2.58
958742	AF2-165 E	0.7761	Adder	1.72
958751	AF2-166 C	0.9739	Adder	2.16
958752	AF2-166 E	0.6493	Adder	1.44
958791	AF2-170 C	4.4582	50/50	4.4582
958792	AF2-170 E	2.9722	50/50	2.9722
959441	AF2-235 C	1.4520	50/50	1.4520
959442	AF2-235 E	0.9680	50/50	0.9680
959461	AF2-237 C	1.8024	50/50	1.8024
959462	AF2-237 E	1.2016	50/50	1.2016
959471	AF2-238 C	0.5476	Adder	1.22
959472	AF2-238 E	0.3651	Adder	0.81
959491	AF2-240 C	0.5054	Adder	1.12
959492	AF2-240 E	0.4305	Adder	0.96
959501	AF2-241 C	0.5288	Adder	1.17
959502	AF2-241 E	0.4071	Adder	0.9
959521	AF2-243 C	0.8731	Adder	1.94
959522	AF2-243 E	0.5821	Adder	1.29
959741	AF2-265 C	0.3925	Adder	0.87
959742	AF2-265 E	0.2921	Adder	0.65
959822	AF2-273 E	0.1917	Adder	0.43
960041	AF2-295 C	0.6842	Adder	1.52
960042	AF2-295 E	0.4562	Adder	1.01
960051	AF2-296 C	0.5367	Adder	1.19
960052	AF2-296 E	0.3578	Adder	0.79
960321	AF2-323 C O1	7.8595	50/50	7.8595
960322	AF2-323 E O1	5.2397	50/50	5.2397
961141	AF2-405	0.4680	Adder	1.04
961151	AF2-406	3.5098	Adder	7.79
961201	AF2-411 O1	14.7557	Adder	32.75
961211	AF2-412 O1	6.3549	Adder	14.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NEWTON	NEWTON	3.0150	Confirmed LTF	3.0150
FARMERCITY	FARMERCITY	0.1553	Confirmed LTF	0.1553
G-007A	G-007A	5.6989	Confirmed LTF	5.6989
VFT	VFT	15.6541	Confirmed LTF	15.6541
CALDERWOOD	CALDERWOOD	1.1108	Confirmed LTF	1.1108
PRAIRIE	PRAIRIE	7.0387	Confirmed LTF	7.0387
CHEOAH	CHEOAH	1.1116	Confirmed LTF	1.1116
EDWARDS	EDWARDS	1.0251	Confirmed LTF	1.0251
TILTON	TILTON	1.8232	Confirmed LTF	1.8232
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.5354	Confirmed LTF	1.5354
BLUEG	BLUEG	4.8157	Confirmed LTF	4.8157
TRIMBLE	TRIMBLE	1.5460	Confirmed LTF	1.5460
CATAWBA	CATAWBA	0.6395	Confirmed LTF	0.6395

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
98948921	147842	NIAGAR2W	NYISO	135415	PACKARD2	NYISO	2	T:61&64	breaker	717.0	101.22	102.34	DC	17.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
203910	26Z1-091	1.0969	Adder	1.29
920341	AA2-132 (Suspended)	1.2977	Adder	1.53
944411	AF1-106 O1	1.1126	Adder	1.31
946211	AF1-286 C O1	0.4506	Adder	0.53
946212	AF1-286 E O1	0.3060	Adder	0.36
959491	AF2-240 C	0.3184	Adder	0.71
959492	AF2-240 E	0.2713	Adder	0.6
959501	AF2-241 C	0.3332	Adder	0.74
959502	AF2-241 E	0.2565	Adder	0.57
960031	AF2-294 C	0.4147	Adder	0.92
960032	AF2-294 E	0.2765	Adder	0.61
961141	AF2-405	0.2949	Adder	0.65
961151	AF2-406	2.2114	Adder	4.91
961201	AF2-411 O1	7.9820	Adder	17.72
NEWTON	NEWTON	0.2504	Confirmed LTF	0.2504
FARMERCITY	FARMERCITY	0.0129	Confirmed LTF	0.0129
G-007A	G-007A	1.1292	Confirmed LTF	1.1292
VFT	VFT	3.1863	Confirmed LTF	3.1863
CALDERWOOD	CALDERWOOD	0.0959	Confirmed LTF	0.0959
PRAIRIE	PRAIRIE	0.5863	Confirmed LTF	0.5863
CHEOAH	CHEOAH	0.0961	Confirmed LTF	0.0961
EDWARDS	EDWARDS	0.0843	Confirmed LTF	0.0843
TILTON	TILTON	0.1506	Confirmed LTF	0.1506
MADISON	MADISON	0.0121	Confirmed LTF	0.0121
GIBSON	GIBSON	0.1278	Confirmed LTF	0.1278
BLUEG	BLUEG	0.4045	Confirmed LTF	0.4045
TRIMBLE	TRIMBLE	0.1297	Confirmed LTF	0.1297
CATAWBA	CATAWBA	0.0567	Confirmed LTF	0.0567

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
99743881	200593	26GLADE	PENELEC	200811	26WARREN	PENELEC	1	PN-P1-2-PN-345-003	single	621.0	131.57	134.19	DC	18.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	13.9036	80/20	13.9036
200643	26SENECA#2	13.1312	80/20	13.1312
200644	26SENECA#3	1.2929	80/20	1.2929
200649	26PENNTech	1.3209	80/20	1.3209
200665	26SHAWVL 3	3.6187	80/20	3.6187
200666	26SHAWVL 4	3.6000	80/20	3.6000
200715	26SHAWVL 1	2.4754	80/20	2.4754
200722	26SHAWVL 2	2.5363	80/20	2.5363
200887	26ARMNA MT	0.2402	80/20	0.2402
200898	26AA1-106	1.4742	80/20	1.4742
200905	26Q36	0.1383	80/20	0.1383
200913	26SHAW-D	0.1168	80/20	0.1168
203261	26BLOSSBCT	0.2515	80/20	0.2515
203349	26Z1-069 C	0.2604	80/20	0.2604
203350	26MILZ1-092	0.2124	80/20	0.2124
203351	26GROZ1-110	0.2543	80/20	0.2543
203352	26CANZ2-011	0.2543	80/20	0.2543
919201	AA1-144 OP	10.1125	80/20	10.1125
919491	AA2-000	48.7724	80/20	48.7724
922932	AB1-082 OP (Suspended)	2.9444	80/20	2.9444
923442	AB1-160 C	0.0744	80/20	0.0744
923821	AB2-019 FTWR	3.9150	80/20	3.9150
930511	AB1-092	1.7908	80/20	1.7908
934801	AD1-108	0.0192	80/20	0.0192
934811	AD1-109	0.0141	80/20	0.0141
935061	AD1-142	0.0117	80/20	0.0117
936421	AD2-055	3.6869	80/20	3.6869
936991	AD2-133 C	1.4429	80/20	1.4429
939171	AE1-147 C	1.1756	80/20	1.1756
939291	AE1-160 C	-1.0619	Adder	-1.25
940201	AE2-001 C	1.1724	80/20	1.1724
940681	AE2-055 C (Suspended)	1.1224	80/20	1.1224
940861	AE2-074 C	2.2357	80/20	2.2357
941191	AE2-113 C	11.0840	80/20	11.0840
941261	AE2-120 C	1.1706	80/20	1.1706
941271	AE2-121 C	0.6281	80/20	0.6281
941321	AE2-126 C	1.7636	80/20	1.7636
941331	AE2-129 C	1.1381	80/20	1.1381
941351	AE2-131 C	1.1381	80/20	1.1381
941421	AE2-139 C	4.1305	80/20	4.1305

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942351	AE2-248 C	0.9146	80/20	0.9146
942491	AE2-262 C	5.5900	80/20	5.5900
942501	AE2-263 C	5.2546	80/20	5.2546
942961	AE2-316 C	4.2073	80/20	4.2073
943751	AF1-043	11.0607	80/20	11.0607
944001	AF1-068 C O1	1.2127	80/20	1.2127
944311	AF1-099 C	8.4856	80/20	8.4856
944321	AF1-100 C	18.3150	80/20	18.3150
944411	AF1-106 O1	1.2374	80/20	1.2374
944471	AF1-112 C	1.2252	80/20	1.2252
944671	AF1-132 C O1	1.1334	80/20	1.1334
944691	AF1-134 C O1	0.9637	80/20	0.9637
944771	AF1-142 C	13.5770	80/20	13.5770
944841	AF1-149 C	1.1704	80/20	1.1704
944881	AF1-153 C O1	1.6268	80/20	1.6268
944901	AF1-155 C	1.6165	80/20	1.6165
945161	AF1-181	0.0976	80/20	0.0976
945171	AF1-182	0.4882	80/20	0.4882
945181	AF1-183	0.1176	80/20	0.1176
945331	AF1-198	0.1918	80/20	0.1918
945491	AF1-214 C	1.1707	80/20	1.1707
945551	AF1-220 C	15.5110	80/20	15.5110
946111	AF1-276 C	15.0589	80/20	15.0589
946121	AF1-277 C	15.0589	80/20	15.0589
946131	AF1-278 C	12.0022	80/20	12.0022
946211	AF1-286 C O1	0.5011	80/20	0.5011
946381	AF1-302 C	1.8373	80/20	1.8373
946421	AF1-306 C	8.0182	80/20	8.0182
957451	AF2-039 C	0.9143	80/20	0.9143
957581	AF2-052 C	6.5094	80/20	6.5094
957681	AF2-062 C	24.7824	80/20	24.7824
957941	AF2-088 C	0.4402	80/20	0.4402
958271	AF2-121 C	1.1381	80/20	1.1381
959471	AF2-238 C	0.8372	80/20	0.8372
959491	AF2-240 C	0.6682	80/20	0.6682
959501	AF2-241 C	0.6991	80/20	0.6991
959741	AF2-265 C	0.6000	80/20	0.6000
960041	AF2-295 C	1.6165	80/20	1.6165
960051	AF2-296 C	0.9637	80/20	0.9637
961141	AF2-405	0.6187	80/20	0.6187
961151	AF2-406	4.6403	80/20	4.6403
961201	AF2-411 O1	18.9720	80/20	18.9720
961211	AF2-412 O1	9.4796	80/20	9.4796
NEWTON	NEWTON	1.4355	Confirmed LTF	1.4355
FARMERCITY	FARMERCITY	0.0737	Confirmed LTF	0.0737
G-007A	G-007A	4.1405	Confirmed LTF	4.1405
VFT	VFT	11.3455	Confirmed LTF	11.3455
CALDERWOOD	CALDERWOOD	0.5089	Confirmed LTF	0.5089
PRAIRIE	PRAIRIE	3.3347	Confirmed LTF	3.3347
CHEOAH	CHEOAH	0.5090	Confirmed LTF	0.5090
EDWARDS	EDWARDS	0.4904	Confirmed LTF	0.4904
TILTON	TILTON	0.8713	Confirmed LTF	0.8713

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MADISON	MADISON	0.0544	Confirmed LTF	0.0544
GIBSON	GIBSON	0.7316	Confirmed LTF	0.7316
BLUEG	BLUEG	2.2915	Confirmed LTF	2.2915
TRIMBLE	TRIMBLE	0.7362	Confirmed LTF	0.7362
CATAWBA	CATAWBA	0.2796	Confirmed LTF	0.2796

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
98949081	200599	26ERIE W	PENELEC	238547	02AT	ATSI	1	Base Case	single	1560.0	111.55	113.03	DC	51.35

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944381	AF1-103 O1	7.1636	80/20	7.1636
944391	AF1-104 O1	11.2622	80/20	11.2622
944411	AF1-106 O1	2.7752	Adder	3.26
944691	AF1-134 C O1	1.5950	Adder	1.88
944771	AF1-142 C	16.5241	Adder	19.44
944881	AF1-153 C O1	2.0105	Adder	2.37
944901	AF1-155 C	2.0110	Adder	2.37
945021	AF1-167 C	1.2912	Adder	1.52
945051	AF1-170 C	24.9431	80/20	24.9431
945121	AF1-177	1.7909	80/20	1.7909
945161	AF1-181	0.1166	Adder	0.14
945171	AF1-182	0.5828	Adder	0.69
945181	AF1-183	0.1444	Adder	0.17
945331	AF1-198	0.3515	Adder	0.41
945451	AF1-210 C	1.4103	Adder	1.66
945551	AF1-220 C	18.9972	80/20	18.9972
945751	AF1-240 C O1	1.9586	Adder	2.3
946111	AF1-276 C	17.1024	80/20	17.1024
946121	AF1-277 C	17.1024	80/20	17.1024
946131	AF1-278 C	13.6309	80/20	13.6309
946211	AF1-286 C O1	1.1240	Adder	1.32
946221	AF1-287 C	6.0481	80/20	6.0481
946381	AF1-302 C	2.9552	Adder	3.48
946401	AF1-304 C	21.0714	80/20	21.0714
946421	AF1-306 C	8.5386	Adder	10.05
946771	AF1-217 C O2	6.0481	80/20	6.0481
957161	AF2-010 C	20.8242	80/20	20.8242
957451	AF2-039 C	0.6139	Adder	1.36
957571	AF2-051 C O1	15.0124	80/20	15.0124
957581	AF2-052 C	8.4634	80/20	8.4634
957681	AF2-062 C	29.7600	80/20	29.7600
957941	AF2-088 C	0.2956	Adder	0.66
957951	AF2-089 C	1.2197	80/20	1.2197
958031	AF2-097 C	1.5876	80/20	1.5876
958271	AF2-121 C	0.8313	Adder	1.85
958361	AF2-130 C	3.3265	80/20	3.3265
958731	AF2-164 C O1	17.5694	80/20	17.5694
958741	AF2-165 C	3.9576	80/20	3.9576
958751	AF2-166 C	3.3265	80/20	3.3265
958791	AF2-170 C	6.7573	80/20	6.7573
959441	AF2-235 C	2.2177	80/20	2.2177
959461	AF2-237 C	2.7412	80/20	2.7412
959471	AF2-238 C	0.8617	Adder	1.91
959491	AF2-240 C	0.7943	Adder	1.76
959501	AF2-241 C	0.8310	Adder	1.84
959521	AF2-243 C	2.9682	80/20	2.9682
959741	AF2-265 C	0.6175	Adder	1.37
960031	AF2-294 C	0.8406	Adder	1.87
960041	AF2-295 C	1.0658	Adder	2.37
960051	AF2-296 C	0.8453	Adder	1.88
960321	AF2-323 C O1	11.9547	80/20	11.9547
961141	AF2-405	0.7354	Adder	1.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961151	AF2-406	5.5158	Adder	12.24
961201	AF2-411 O1	23.1323	Adder	51.35
961211	AF2-412 O1	9.9660	Adder	22.12
NEWTON	NEWTON	3.6791	Confirmed LTF	3.6791
FARMERCITY	FARMERCITY	0.1889	Confirmed LTF	0.1889
G-007A	G-007A	10.4387	Confirmed LTF	10.4387
VFT	VFT	28.5670	Confirmed LTF	28.5670
CALDERWOOD	CALDERWOOD	1.2733	Confirmed LTF	1.2733
PRAIRIE	PRAIRIE	8.5291	Confirmed LTF	8.5291
CHEOAH	CHEOAH	1.2718	Confirmed LTF	1.2718
EDWARDS	EDWARDS	1.2638	Confirmed LTF	1.2638
TILTON	TILTON	2.2409	Confirmed LTF	2.2409
MADISON	MADISON	0.1230	Confirmed LTF	0.1230
GIBSON	GIBSON	1.8739	Confirmed LTF	1.8739
BLUEG	BLUEG	5.8573	Confirmed LTF	5.8573
TRIMBLE	TRIMBLE	1.8810	Confirmed LTF	1.8810
CATAWBA	CATAWBA	0.6818	Confirmed LTF	0.6818

11.6.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101443121	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	180.4	197.27	DC	34.07

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	6.4416	80/20	6.4416
959061	AF2-197 C O1	10.2256	80/20	10.2256
959471	AF2-238 C	2.1307	80/20	2.1307
959481	AF2-239 C	2.5693	80/20	2.5693
959491	AF2-240 C	1.8877	80/20	1.8877
959501	AF2-241 C	1.9751	80/20	1.9751
959741	AF2-265 C	1.5270	80/20	1.5270
960271	AF2-318 C	2.7776	80/20	2.7776
961141	AF2-405	1.7479	80/20	1.7479
961151	AF2-406	13.1092	80/20	13.1092
961201	AF2-411 O1	34.0710	80/20	34.0710
961211	AF2-412 O1	18.2585	80/20	18.2585
961451	AF2-436	0.0994	80/20	0.0994
WEC	WEC	0.1852	Confirmed LTF	0.1852
LGEE	LGEE	0.3240	Confirmed LTF	0.3240
CPL	CPL	0.2209	Confirmed LTF	0.2209
CBM-W2	CBM-W2	4.3898	Confirmed LTF	4.3898
CBM-W1	CBM-W1	7.6686	Confirmed LTF	7.6686
TVA	TVA	0.7014	Confirmed LTF	0.7014
CBM-S2	CBM-S2	2.2195	Confirmed LTF	2.2195
CBM-S1	CBM-S1	4.3793	Confirmed LTF	4.3793
MEC	MEC	0.9026	Confirmed LTF	0.9026

11.6.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743892	200675	26E.TWANDA	PENELEC	200924	26CANYON	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	145.86	156.17	DC	69.21

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

11.6.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743668	200767	26HOMER CT	PENELEC	200793	26SEWARD 2	PENELEC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	109.03	114.86	DC	47.58

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	2.4488	Adder	2.88
942812	AE2-299 E	9.7953	Adder	11.52
942961	AE2-316 C	2.9564	Adder	3.48
942962	AE2-316 E	4.2159	Adder	4.96
943151	AE2-344 C	5.1608	Adder	6.07
943152	AE2-344 E	3.4405	Adder	4.05
943351	AF1-006 C	0.8993	Adder	1.06
943352	AF1-006 E	0.5059	Adder	0.6
943751	AF1-043	5.5326	Adder	6.51
944261	AF1-094 C	0.8490	Adder	1.0
944262	AF1-094 E	0.5660	Adder	0.67
944281	AF1-096 C	0.8159	Adder	0.96
944282	AF1-096 E	0.5439	Adder	0.64
944301	AF1-098 C	3.6410	Adder	4.28
944302	AF1-098 E	2.4273	Adder	2.86
944381	AF1-103 O1	1.7609	Adder	2.07
944391	AF1-104 O1	1.3374	Adder	1.57
944411	AF1-106 O1	1.9885	Adder	2.34
944881	AF1-153 C O1	0.6980	Adder	0.82
944882	AF1-153 E O1	0.4653	Adder	0.55
944901	AF1-155 C	0.7001	Adder	0.82
944902	AF1-155 E	0.4668	Adder	0.55
945021	AF1-167 C	0.5239	Adder	0.62
945022	AF1-167 E	0.3499	Adder	0.41
945051	AF1-170 C	3.2683	Adder	3.85
945052	AF1-170 E	2.1789	Adder	2.56
945121	AF1-177	0.4402	Adder	0.52
945331	AF1-198	0.2611	Adder	0.31
945451	AF1-210 C	0.5905	Adder	0.69
945452	AF1-210 E	0.3937	Adder	0.46
945551	AF1-220 C	5.7533	Adder	6.77
945552	AF1-220 E	3.8376	Adder	4.51
945673	AF1-232 BAT	2.0274	Merchant Transmission	2.0274
946111	AF1-276 C	9.9193	50/50	9.9193
946112	AF1-276 E	4.8856	50/50	4.8856
946121	AF1-277 C	9.9193	50/50	9.9193
946122	AF1-277 E	4.8856	50/50	4.8856
946131	AF1-278 C	7.9059	50/50	7.9059
946132	AF1-278 E	3.9322	50/50	3.9322
946211	AF1-286 C O1	0.8053	Adder	0.95
946212	AF1-286 E O1	0.5468	Adder	0.64
946221	AF1-287 C	0.8900	Adder	1.05
946222	AF1-287 E	0.5933	Adder	0.7
946381	AF1-302 C	1.2910	Adder	1.52
946382	AF1-302 E	1.7214	Adder	2.03
946401	AF1-304 C	4.0443	Adder	4.76
946402	AF1-304 E	2.6962	Adder	3.17
946421	AF1-306 C	2.9044	Adder	3.42
946422	AF1-306 E	11.6177	Adder	13.67
946771	AF1-217 C O2	0.8900	Adder	1.05
946772	AF1-217 E O2	0.5933	Adder	0.7
957161	AF2-010 C	1.7219	Adder	3.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957162	AF2-010 E	1.1604	Adder	2.58
957513	AF2-045 BAT	0.9480	Merchant Transmission	0.9480
957571	AF2-051 C O1	1.4415	Adder	3.2
957572	AF2-051 E O1	0.7426	Adder	1.65
957581	AF2-052 C	5.1682	50/50	5.1682
957582	AF2-052 E	2.5142	50/50	2.5142
957681	AF2-062 C	18.4584	50/50	18.4584
957682	AF2-062 E	12.3056	50/50	12.3056
957951	AF2-089 C	0.1189	Adder	0.26
957952	AF2-089 E	0.0613	Adder	0.14
958031	AF2-097 C	0.1117	Adder	0.25
958032	AF2-097 E	0.0745	Adder	0.17
958361	AF2-130 C	0.3810	Adder	0.85
958362	AF2-130 E	0.2540	Adder	0.56
958472	AF2-141 BAT	0.9252	Merchant Transmission	0.9252
958731	AF2-164 C O1	2.9249	Adder	6.49
958732	AF2-164 E O1	1.9499	Adder	4.33
958741	AF2-165 C	0.4319	Adder	0.96
958742	AF2-165 E	0.2879	Adder	0.64
958751	AF2-166 C	0.3810	Adder	0.85
958752	AF2-166 E	0.2540	Adder	0.56
958791	AF2-170 C	0.4253	Adder	0.94
958792	AF2-170 E	0.2835	Adder	0.63
959061	AF2-197 C O1	1.7185	Adder	3.81
959062	AF2-197 E O1	2.5778	Adder	5.72
959441	AF2-235 C	0.2162	Adder	0.48
959442	AF2-235 E	0.1441	Adder	0.32
959461	AF2-237 C	0.2250	Adder	0.5
959462	AF2-237 E	0.1500	Adder	0.33
959471	AF2-238 C	0.6388	Adder	1.42
959472	AF2-238 E	0.4259	Adder	0.95
959481	AF2-239 C	0.4662	Adder	1.03
959482	AF2-239 E	0.3738	Adder	0.83
959491	AF2-240 C	0.5691	Adder	1.26
959492	AF2-240 E	0.4848	Adder	1.08
959501	AF2-241 C	0.5955	Adder	1.32
959502	AF2-241 E	0.4584	Adder	1.02
959521	AF2-243 C	0.3239	Adder	0.72
959522	AF2-243 E	0.2159	Adder	0.48
959741	AF2-265 C	0.4578	Adder	1.02
959742	AF2-265 E	0.3407	Adder	0.76
959793	AF2-270 BAT	0.0805	Merchant Transmission	0.0805
959822	AF2-273 E	0.1241	Adder	0.28
960031	AF2-294 C	0.5840	Adder	1.3
960032	AF2-294 E	0.3893	Adder	0.86
960041	AF2-295 C	0.3711	Adder	0.82
960042	AF2-295 E	0.2474	Adder	0.55
960271	AF2-318 C	0.5039	Adder	1.12
960272	AF2-318 E	0.3360	Adder	0.75
960321	AF2-323 C O1	1.1578	Adder	2.57
960322	AF2-323 E O1	0.7719	Adder	1.71
961141	AF2-405	0.5269	Adder	1.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961151	AF2-406	3.9521	Adder	8.77
961201	AF2-411 O1	47.5800	50/50	47.5800
961211	AF2-412 O1	18.4457	50/50	18.4457
961451	AF2-436	0.0560	Adder	0.12
WEC	WEC	0.0400	Confirmed LTF	0.0400
LGEE	LGEE	0.0377	Confirmed LTF	0.0377
CALDERWOOD	CALDERWOOD	0.0537	Confirmed LTF	0.0537
CBM-W2	CBM-W2	0.1310	Confirmed LTF	0.1310
CBM-W1	CBM-W1	2.6271	Confirmed LTF	2.6271
O-066	O-066	4.4621	Confirmed LTF	4.4621
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
G-007	G-007	0.7634	Confirmed LTF	0.7634
MEC	MEC	0.1351	Confirmed LTF	0.1351
CATAWBA	CATAWBA	0.0851	Confirmed LTF	0.0851

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
99743841	200767	26HOMER CT	PENELEC	200795	26SHELOCTA	PENELEC	1	PN-P1-2-PN-345-107T	single	917.0	153.74	160.76	DC	63.99

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935191	AD1-154	2.1961	Adder	2.58
936421	AD2-055	4.3444	Adder	5.11
936991	AD2-133 C	2.8213	Adder	3.32
938351	AE1-053	1.5925	Adder	1.87
938881	AE1-116	1.0012	80/20	1.0012
938951	AE1-123	2.2356	Adder	2.63
938991	AE1-128 C	16.8091	80/20	16.8091
939171	AE1-147 C	1.3204	Adder	1.55
939291	AE1-160 C	1.8792	Adder	2.21
940201	AE2-001 C	1.3184	Adder	1.55
940681	AE2-055 C (Suspended)	1.2873	Adder	1.51
940861	AE2-074 C	3.2677	80/20	3.2677
941191	AE2-113 C	12.6014	80/20	12.6014
941231	AE2-117 C	1.5908	Adder	1.87
941241	AE2-118 C	1.5908	Adder	1.87
941261	AE2-120 C	1.3172	Adder	1.55
941271	AE2-121 C	0.7039	Adder	0.83
941321	AE2-126 C	1.6846	Adder	1.98
941331	AE2-129 C	1.7421	Adder	2.05
941351	AE2-131 C	1.7421	Adder	2.05
941421	AE2-139 C	7.3172	Adder	8.61
942121	AE2-224 C	15.9210	80/20	15.9210
942351	AE2-248 C	1.0402	Adder	1.22
942491	AE2-262 C	5.9296	Adder	6.98
942501	AE2-263 C	5.5738	Adder	6.56
942511	AE2-264 C	7.4709	Adder	8.79
942811	AE2-299 C	5.3143	Adder	6.25
942961	AE2-316 C	5.5600	Adder	6.54
943151	AE2-344 C	11.5182	Adder	13.55
943351	AF1-006 C	2.1004	Adder	2.47
943711	AF1-039 C O1	1.0988	Adder	1.29
943751	AF1-043	13.0332	Adder	15.33
944001	AF1-068 C O1	1.3828	Adder	1.63
944181	AF1-086 C O1	2.1801	Adder	2.56
944261	AF1-094 C	1.8988	Adder	2.23
944281	AF1-096 C	1.7756	Adder	2.09
944301	AF1-098 C	7.9340	Adder	9.33
944311	AF1-099 C	9.0011	Adder	10.59
944321	AF1-100 C	18.8317	Adder	22.15
944381	AF1-103 O1	3.3667	Adder	3.96
944391	AF1-104 O1	3.2762	Adder	3.85
944411	AF1-106 O1	2.9167	Adder	3.43
944471	AF1-112 C	1.3906	Adder	1.64
944671	AF1-132 C O1	1.2942	Adder	1.52
944691	AF1-134 C O1	1.4014	Adder	1.65
944751	AF1-140 C	2.2196	80/20	2.2196
944771	AF1-142 C	14.4018	Adder	16.94
944781	AF1-143 C	9.5549	Adder	11.24
944841	AF1-149 C	1.3171	Adder	1.55
944881	AF1-153 C O1	1.6027	Adder	1.89
944901	AF1-155 C	1.6020	Adder	1.88
945021	AF1-167 C	0.9343	Adder	1.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945051	AF1-170 C	7.6414	Adder	8.99
945121	AF1-177	0.8417	Adder	0.99
945161	AF1-181	0.1005	Adder	0.12
945171	AF1-182	0.5025	Adder	0.59
945181	AF1-183	0.1282	Adder	0.15
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.0200	Adder	1.2
945491	AF1-214 C	1.3172	Adder	1.55
945551	AF1-220 C	13.3684	Adder	15.73
945671	AF1-232 C O2	23.4676	80/20	23.4676
945751	AF1-240 C O1	1.3176	Adder	1.55
946081	AF1-273 C O1	11.5357	80/20	11.5357
946111	AF1-276 C	15.0743	80/20	15.0743
946121	AF1-277 C	15.0743	80/20	15.0743
946131	AF1-278 C	12.0145	80/20	12.0145
946211	AF1-286 C O1	1.1813	Adder	1.39
946221	AF1-287 C	1.9781	Adder	2.33
946381	AF1-302 C	2.4280	Adder	2.86
946401	AF1-304 C	8.7475	Adder	10.29
946421	AF1-306 C	6.7886	Adder	7.99
946431	AF1-307 C	8.5410	80/20	8.5410
946571	AF1-321 C O1	3.0025	80/20	3.0025
946771	AF1-217 C O2	1.9781	Adder	2.33
957001	AF2-001 C O1	3.0025	80/20	3.0025
957011	AF2-002 C O1	1.5013	80/20	1.5013
957161	AF2-010 C	3.8458	Adder	8.54
957451	AF2-039 C	0.5621	Adder	1.25
957561	AF2-050 C	7.9605	80/20	7.9605
957571	AF2-051 C O1	2.9150	Adder	6.47
957581	AF2-052 C	8.0253	80/20	8.0253
957681	AF2-062 C	27.4632	80/20	27.4632
957931	AF2-087 C	0.6212	80/20	0.6212
957941	AF2-088 C	0.2707	Adder	0.6
957951	AF2-089 C	0.2588	Adder	0.57
957981	AF2-092 C	1.6705	80/20	1.6705
958031	AF2-097 C	0.2609	Adder	0.58
958101	AF2-104 C	0.5340	80/20	0.5340
958271	AF2-121 C	0.9233	Adder	2.05
958361	AF2-130 C	0.8471	Adder	1.88
958411	AF2-135 C	0.2532	Adder	0.56
958471	AF2-141	0.6752	Adder	1.5
958731	AF2-164 C O1	10.4098	80/20	10.4098
958741	AF2-165 C	0.9170	Adder	2.04
958751	AF2-166 C	0.8471	Adder	1.88
958791	AF2-170 C	1.0418	Adder	2.31
959061	AF2-197 C O1	2.6610	Adder	5.91
959301	AF2-221 C	1.5451	80/20	1.5451
959401	AF2-231 C	0.2108	Adder	0.47
959441	AF2-235 C	0.4705	Adder	1.04
959461	AF2-237 C	0.5032	Adder	1.12
959471	AF2-238 C	0.9410	Adder	2.09
959481	AF2-239 C	0.7234	Adder	1.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959491	AF2-240 C	0.8348	Adder	1.85
959501	AF2-241 C	0.8734	Adder	1.94
959521	AF2-243 C	0.6877	Adder	1.53
959741	AF2-265 C	0.6744	Adder	1.5
960031	AF2-294 C	0.8627	Adder	1.91
960041	AF2-295 C	0.8491	Adder	1.88
960051	AF2-296 C	0.7427	Adder	1.65
960211	AF2-312 C	0.8059	Adder	1.79
960271	AF2-318 C	0.7821	Adder	1.74
960321	AF2-323 C O1	2.3330	Adder	5.18
960391	AF2-330 C	10.7793	80/20	10.7793
960451	AF2-336 C O1	2.7841	80/20	2.7841
960461	AF2-337 C O1	2.7841	80/20	2.7841
960471	AF2-338 C O1	2.7841	80/20	2.7841
960481	AF2-339 C O1	2.7841	80/20	2.7841
960901	AF2-381 C	19.8673	80/20	19.8673
961141	AF2-405	0.7729	Adder	1.72
961151	AF2-406	5.7969	Adder	12.87
961201	AF2-411 O1	63.9870	80/20	63.9870
961211	AF2-412 O1	11.5924	Adder	25.73
961451	AF2-436	0.0885	Adder	0.2
NEWTON	NEWTON	1.5150	Confirmed LTF	1.5150
FARMERCITY	FARMERCITY	0.0783	Confirmed LTF	0.0783
G-007A	G-007A	2.6205	Confirmed LTF	2.6205
VFT	VFT	7.5078	Confirmed LTF	7.5078
CALDERWOOD	CALDERWOOD	0.6565	Confirmed LTF	0.6565
PRAIRIE	PRAIRIE	3.6033	Confirmed LTF	3.6033
CHEOAH	CHEOAH	0.6597	Confirmed LTF	0.6597
EDWARDS	EDWARDS	0.4963	Confirmed LTF	0.4963
TILTON	TILTON	0.8946	Confirmed LTF	0.8946
MADISON	MADISON	0.0706	Confirmed LTF	0.0706
GIBSON	GIBSON	0.7731	Confirmed LTF	0.7731
BLUEG	BLUEG	2.4651	Confirmed LTF	2.4651
TRIMBLE	TRIMBLE	0.7908	Confirmed LTF	0.7908
CATAWBA	CATAWBA	0.4323	Confirmed LTF	0.4323

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
99743509	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.07	157.67	DC	87.89

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

11.6.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743439	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.69	177.55	DC	88.12

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

11.6.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743640	200793	26SEWARD 2	PENELEC	200912	26CONEMAGH	PENELEC	1	PN- P2_3- PN- 230- 0252- A	breaker	1147.0	123.93	125.86	DC	50.97

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

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

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

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

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

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

11.6.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743409	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	199.22	202.37	DC	63.05

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

11.6.15 Index 15

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
99743539	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	151.4	154.25	DC	39.54

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

11.6.16 Index 16

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
99743716	200819	26ERIE SE	PENELEC	200600	26ERIE SO	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	103.49	105.12	DC	31.19

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

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

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

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

11.6.17 Index 17

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
98949038	200908	26CHAPMAN+	PENELEC	235220	01MOSHAN	AP	1	Base Case	single	520.0	125.21	130.23	DC	26.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O1	6.3282	80/20	6.3282
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126
960031	AF2-294 C	1.2774	80/20	1.2774

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O1	26.0910	80/20	26.0910
961211	AF2-412 O1	12.8895	80/20	12.8895
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

11.6.18 Index 18

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
99743590	200912	26CONEMAGH	PENELEC	200005	CONEM-GH	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	133.35	135.43	DC	50.97

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

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

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

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

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

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

11.6.19 Index 19

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
99743937	200924	26CANYON	PENELEC	200706	26N.MESHPN	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	133.82	143.34	DC	69.21

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

11.6.20 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
101442891	200927	26FOURMILE	PENELEC	200820	26ERIE SE	PENELEC	1	PN-P2-3-PN-230-6G	breaker	245.0	151.56	154.59	DC	16.38

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

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

11.6.21 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
99743643	208009	LACK	PPL	200074	LACKAW	PJM	3	PL_P42_001057	breaker	1167.0	120.21	122.06	DC	47.15

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	5.2686	Adder	6.2
200894	26K02	8.7984	Adder	10.35
200898	26AA1-106	3.4019	Adder	4.0
203907	26Y2-042	5.6777	Adder	6.68
203909	26Z1-038	5.2687	Adder	6.2
203910	26Z1-091	4.3538	Adder	5.12
203999	P-047 E	13.0678	Adder	15.37
208052	LAEN G2	27.4578	50/50	27.4578
208053	LAEN G3	27.4578	50/50	27.4578
208055	LAEN G1	27.4578	50/50	27.4578
209003	KSTN IPP (Deactivation : 31/05/2020)	1.9890	Adder	2.34
209009	PEIP 2	3.5998	50/50	3.5998
209010	PEIP 1	2.1994	50/50	2.1994
209029	WAYM IPP	0.7331	50/50	0.7331
294573	P-028 E	31.6118	Adder	37.19
914271	Y2-089	30.4785	50/50	30.4785
916202	Z1-069 E	6.4890	Adder	7.63
917662	Z2-107 E (Suspended)	4.0592	Adder	4.78
918601	AA1-077 C	2.8007	50/50	2.8007
918602	AA1-077 E	37.7264	50/50	37.7264
918682	AA1-082 E	12.1435	Adder	14.29
919201	AA1-144 OP	33.8976	Adder	39.88
919491	AA2-000	47.2181	Adder	55.55
920341	AA2-132 (Suspended)	3.9251	Adder	4.62
922932	AB1-082 OP (Suspended)	1.7593	Adder	2.07
923443	AB1-160 E	1.8540	Adder	2.18
923673	AB1-182 E	3.5931	Adder	4.23
930511	AB1-092	1.7337	Adder	2.04
936421	AD2-055	3.5694	Adder	4.2
938331	AE1-051	4.0592	Adder	4.78
938401	AE1-059 C O1	55.0800	Adder	64.8
940861	AE2-074 C	1.3359	Adder	1.57
940862	AE2-074 E	1.7584	Adder	2.07
941421	AE2-139 C	11.5729	Adder	13.62
941422	AE2-139 E	7.7152	Adder	9.08
943751	AF1-043	10.7082	Adder	12.6
944411	AF1-106 O1	3.5170	Adder	4.14
945331	AF1-198	0.3829	Adder	0.45
946211	AF1-286 C O1	1.4244	Adder	1.68
946212	AF1-286 E O1	0.9672	Adder	1.14
957121	AF2-006 C	5.7306	50/50	5.7306

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957122	AF2-006 E	1.7211	Adder	3.82
957131	AF2-007 C	5.7306	50/50	5.7306
957132	AF2-007 E	1.7211	Adder	3.82
959061	AF2-197 C O1	4.4390	Adder	9.85
959062	AF2-197 E O1	6.6584	Adder	14.78
959471	AF2-238 C	1.0698	Adder	2.37
959472	AF2-238 E	0.7132	Adder	1.58
959481	AF2-239 C	1.2407	Adder	2.75
959482	AF2-239 E	0.9948	Adder	2.21
959491	AF2-240 C	1.0066	Adder	2.23
959492	AF2-240 E	0.8574	Adder	1.9
959501	AF2-241 C	1.0532	Adder	2.34
959502	AF2-241 E	0.8108	Adder	1.8
959741	AF2-265 C	0.7667	Adder	1.7
959742	AF2-265 E	0.5706	Adder	1.27
959912	AF2-282 E	0.6454	Adder	1.43
959922	AF2-283 E	0.4303	Adder	0.96
960031	AF2-294 C	1.2545	Adder	2.78
960032	AF2-294 E	0.8363	Adder	1.86
960271	AF2-318 C	1.3413	Adder	2.98
960272	AF2-318 E	0.8942	Adder	1.98
961141	AF2-405	0.9320	Adder	2.07
961151	AF2-406	6.9900	Adder	15.52
961201	AF2-411 O1	21.2429	Adder	47.15
961211	AF2-412 O1	9.9812	Adder	22.16
961451	AF2-436	0.1865	Adder	0.41
961461	AF2-437	0.2467	Adder	0.55
WEC	WEC	0.0891	Confirmed LTF	0.0891
LGEE	LGEE	0.1438	Confirmed LTF	0.1438
CBM-W2	CBM-W2	1.6544	Confirmed LTF	1.6544
CBM-W1	CBM-W1	4.0282	Confirmed LTF	4.0282
TVA	TVA	0.2058	Confirmed LTF	0.2058
O-066	O-066	32.5584	Confirmed LTF	32.5584
CBM-S1	CBM-S1	1.4228	Confirmed LTF	1.4228
G-007	G-007	4.6634	Confirmed LTF	4.6634
MEC	MEC	0.4004	Confirmed LTF	0.4004
CATAWBA	CATAWBA	0.0073	Confirmed LTF	0.0073

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
99743701	208009	LACK	PPL	200074	LACKAW	PJM	4	PL_P42_001055	breaker	1145.0	107.03	108.72	DC	42.41

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	4.7537	Adder	5.59
200894	26K02	7.9202	Adder	9.32
200898	26AA1-106	3.0638	Adder	3.6
203907	26Y2-042	5.1254	Adder	6.03
203909	26Z1-038	4.7538	Adder	5.59
203910	26Z1-091	3.9256	Adder	4.62
203999	P-047 E	11.7664	Adder	13.84
208052	LAEN G2	24.8026	50/50	24.8026
208053	LAEN G3	24.8026	50/50	24.8026
208055	LAEN G1	24.8026	50/50	24.8026
209003	KSTN IPP (Deactivation : 31/05/2020)	1.7967	Adder	2.11
209009	PEIP 2	3.2517	50/50	3.2517
209010	PEIP 1	1.9867	50/50	1.9867
209029	WAYM IPP	0.6622	50/50	0.6622
294573	P-028 E	28.5223	Adder	33.56
914271	Y2-089	27.5312	50/50	27.5312
916202	Z1-069 E	5.8297	Adder	6.86
917662	22-107 E (Suspended)	3.6666	Adder	4.31
918601	AA1-077 C	2.5299	50/50	2.5299
918602	AA1-077 E	34.0782	50/50	34.0782
918682	AA1-082 E	10.9475	Adder	12.88
919201	AA1-144 OP	30.5572	Adder	35.95
919491	AA2-000	42.3696	Adder	49.85
920341	AA2-132 (Suspended)	3.5376	Adder	4.16
922932	AB1-082 OP (Suspended)	1.5770	Adder	1.86
923443	AB1-160 E	1.6656	Adder	1.96
923673	AB1-182 E	3.1299	Adder	3.68
925951	AC1-071 C (Suspended)	2.7815	Adder	3.27
925952	AC1-071 E (Suspended)	18.6207	Adder	21.91
930511	AB1-092	1.5557	Adder	1.83
936421	AD2-055	3.2029	Adder	3.77
938331	AE1-051	3.6666	Adder	4.31
938401	AE1-059 C O1	45.1639	Adder	53.13
940861	AE2-074 C	1.1974	Adder	1.41
940862	AE2-074 E	1.5762	Adder	1.85
941421	AE2-139 C	10.4283	Adder	12.27
941422	AE2-139 E	6.9522	Adder	8.18
943751	AF1-043	9.6087	Adder	11.3
944411	AF1-106 O1	3.1680	Adder	3.73
945331	AF1-198	0.3446	Adder	0.41
946211	AF1-286 C O1	1.2830	Adder	1.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946212	AF1-286 E O1	0.8712	Adder	1.02
957121	AF2-006 C	5.1764	50/50	5.1764
957122	AF2-006 E	1.5547	Adder	3.45
957131	AF2-007 C	5.1764	50/50	5.1764
957132	AF2-007 E	1.5547	Adder	3.45
959061	AF2-197 C O1	4.0016	Adder	8.88
959062	AF2-197 E O1	6.0023	Adder	13.32
959471	AF2-238 C	0.9634	Adder	2.14
959472	AF2-238 E	0.6423	Adder	1.43
959481	AF2-239 C	1.1185	Adder	2.48
959482	AF2-239 E	0.8968	Adder	1.99
959491	AF2-240 C	0.9067	Adder	2.01
959492	AF2-240 E	0.7723	Adder	1.71
959501	AF2-241 C	0.9486	Adder	2.11
959502	AF2-241 E	0.7304	Adder	1.62
959741	AF2-265 C	0.6904	Adder	1.53
959742	AF2-265 E	0.5138	Adder	1.14
959912	AF2-282 E	0.5830	Adder	1.29
959922	AF2-283 E	0.3887	Adder	0.86
959942	AF2-285 E	0.2425	Adder	0.54
960031	AF2-294 C	1.1306	Adder	2.51
960032	AF2-294 E	0.7537	Adder	1.67
960271	AF2-318 C	1.2092	Adder	2.68
960272	AF2-318 E	0.8061	Adder	1.79
961141	AF2-405	0.8395	Adder	1.86
961151	AF2-406	6.2963	Adder	13.98
961201	AF2-411 O1	19.1048	Adder	42.41
961211	AF2-412 O1	8.9809	Adder	19.94
961261	AF2-417 C O1	1.2734	Adder	2.83
961262	AF2-417 E O1	0.8489	Adder	1.88
961451	AF2-436	0.1682	Adder	0.37
961461	AF2-437	0.2227	Adder	0.49
WEC	WEC	0.0589	Confirmed LTF	0.0589
LGEE	LGEE	0.0907	Confirmed LTF	0.0907
CBM-W2	CBM-W2	0.9419	Confirmed LTF	0.9419
CBM-W1	CBM-W1	2.7772	Confirmed LTF	2.7772
TVA	TVA	0.0938	Confirmed LTF	0.0938
O-066	O-066	26.6582	Confirmed LTF	26.6582
CBM-S1	CBM-S1	0.7157	Confirmed LTF	0.7157
G-007	G-007	3.9489	Confirmed LTF	3.9489
MEC	MEC	0.2542	Confirmed LTF	0.2542
CATAWBA	CATAWBA	0.0283	Confirmed LTF	0.0283

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
100836889	235197	01KARNSC	AP	235152	01BUTLER	AP	1	ATSI-P1-2-CEI-345-700T	single	179.0	190.51	194.3	DC	15.04

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942961	AE2-316 C	4.4555	80/20	4.4555
943151	AE2-344 C	6.5510	80/20	6.5510
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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959441	AF2-235 C	0.7426	80/20	0.7426
959461	AF2-237 C	0.6166	80/20	0.6166
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

11.6.24 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
100836926	235203	01KISSNG	AP	235197	01KARNSC	AP	1	PN-P1-2-PN-345-107T	single	268.0	145.37	148.05	DC	15.92

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943151	AE2-344 C	6.9131	80/20	6.9131
943351	AF1-006 C	1.2268	80/20	1.2268
943751	AF1-043	5.4282	Adder	6.39
944001	AF1-068 C O1	0.5791	Adder	0.68
944181	AF1-086 C O1	1.2012	Adder	1.41
944261	AF1-094 C	1.3013	80/20	1.3013
944281	AF1-096 C	1.5670	80/20	1.5670
944301	AF1-098 C	4.4381	80/20	4.4381
944311	AF1-099 C	4.0006	Adder	4.71
944321	AF1-100 C	8.6190	Adder	10.14
944381	AF1-103 O1	1.6700	80/20	1.6700
944391	AF1-104 O1	1.9318	80/20	1.9318
944471	AF1-112 C	0.5846	Adder	0.69
944671	AF1-132 C O1	0.5414	Adder	0.64
944691	AF1-134 C O1	0.6922	Adder	0.81
944771	AF1-142 C	6.4009	Adder	7.53
944841	AF1-149 C	0.5575	Adder	0.66
944881	AF1-153 C O1	1.1507	80/20	1.1507
944901	AF1-155 C	1.1615	80/20	1.1615
945021	AF1-167 C	1.4654	80/20	1.4654
945051	AF1-170 C	4.5584	80/20	4.5584
945121	AF1-177	0.4175	80/20	0.4175
945161	AF1-181	0.0460	Adder	0.05
945171	AF1-182	0.2300	Adder	0.27
945181	AF1-183	0.0571	Adder	0.07
945331	AF1-198	0.1099	Adder	0.13
945451	AF1-210 C	1.3130	80/20	1.3130
945491	AF1-214 C	0.5577	Adder	0.66
945551	AF1-220 C	5.8245	Adder	6.85
945751	AF1-240 C O1	1.5150	80/20	1.5150
946111	AF1-276 C	4.1027	Adder	4.83
946121	AF1-277 C	4.1027	Adder	4.83
946131	AF1-278 C	3.2699	Adder	3.85
946221	AF1-287 C	1.1894	80/20	1.1894
946381	AF1-302 C	2.0515	80/20	2.0515
946401	AF1-304 C	8.1156	80/20	8.1156
946421	AF1-306 C	3.9889	80/20	3.9889
946771	AF1-217 C O2	1.1894	80/20	1.1894
957161	AF2-010 C	5.0365	80/20	5.0365
957451	AF2-039 C	0.2431	Adder	0.54
957571	AF2-051 C O1	3.5119	80/20	3.5119
957581	AF2-052 C	1.1710	Adder	2.6
957681	AF2-062 C	3.8318	Adder	8.51
957941	AF2-088 C	0.1170	Adder	0.26
957951	AF2-089 C	0.4309	80/20	0.4309
958031	AF2-097 C	0.2875	80/20	0.2875
958271	AF2-121 C	0.3244	Adder	0.72
958361	AF2-130 C	1.8707	80/20	1.8707
958731	AF2-164 C O1	5.0026	80/20	5.0026
958741	AF2-165 C	1.6831	80/20	1.6831
958751	AF2-166 C	1.8707	80/20	1.8707
958791	AF2-170 C	1.1591	80/20	1.1591

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959441	AF2-235 C	0.7835	80/20	0.7835
959461	AF2-237 C	0.6506	80/20	0.6506
959521	AF2-243 C	1.2623	80/20	1.2623
960041	AF2-295 C	1.1615	80/20	1.1615
960051	AF2-296 C	0.3669	Adder	0.81
960211	AF2-312 C	0.2747	Adder	0.61
960321	AF2-323 C O1	2.8166	80/20	2.8166
961201	AF2-411 O1	7.1711	Adder	15.92
961211	AF2-412 O1	3.0682	Adder	6.81
NEWTON	NEWTON	0.7307	Confirmed LTF	0.7307
FARMERCITY	FARMERCITY	0.0375	Confirmed LTF	0.0375
G-007A	G-007A	1.9683	Confirmed LTF	1.9683
VFT	VFT	5.4438	Confirmed LTF	5.4438
CALDERWOOD	CALDERWOOD	0.2858	Confirmed LTF	0.2858
PRAIRIE	PRAIRIE	1.7151	Confirmed LTF	1.7151
CHEOAH	CHEOAH	0.2863	Confirmed LTF	0.2863
EDWARDS	EDWARDS	0.2439	Confirmed LTF	0.2439
TILTON	TILTON	0.4378	Confirmed LTF	0.4378
MADISON	MADISON	0.0544	Confirmed LTF	0.0544
GIBSON	GIBSON	0.3740	Confirmed LTF	0.3740
BLUEG	BLUEG	1.1874	Confirmed LTF	1.1874
TRIMBLE	TRIMBLE	0.3812	Confirmed LTF	0.3812
CATAWBA	CATAWBA	0.1708	Confirmed LTF	0.1708

11.6.25 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
98949463	239036	02PERRY	ATSI	239334	02L.CENTER	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	138.85	139.78	DC	33.91

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944261	AF1-094 C	3.7304	50/50	3.7304
944262	AF1-094 E	2.4870	50/50	2.4870
944281	AF1-096 C	3.0055	50/50	3.0055
944282	AF1-096 E	2.0037	50/50	2.0037
944301	AF1-098 C	15.5957	50/50	15.5957
944302	AF1-098 E	10.3971	50/50	10.3971
944311	AF1-099 C	6.7967	Adder	8.0
944312	AF1-099 E	4.5311	Adder	5.33
944321	AF1-100 C	14.4470	Adder	17.0
944322	AF1-100 E	9.6314	Adder	11.33
944381	AF1-103 O1	4.1230	Adder	4.85
944391	AF1-104 O1	7.6890	50/50	7.6890
944411	AF1-106 O1	1.8280	Adder	2.15
944691	AF1-134 C O1	1.0484	Adder	1.23
944692	AF1-134 E O1	0.6989	Adder	0.82
944771	AF1-142 C	10.8746	Adder	12.79
944772	AF1-142 E	7.2498	Adder	8.53
944881	AF1-153 C O1	1.3361	Adder	1.57
944882	AF1-153 E O1	0.8907	Adder	1.05
944901	AF1-155 C	1.3364	Adder	1.57
944902	AF1-155 E	0.8909	Adder	1.05
945021	AF1-167 C	0.8563	Adder	1.01
945022	AF1-167 E	0.5719	Adder	0.67
945051	AF1-170 C	17.0171	50/50	17.0171
945052	AF1-170 E	11.3448	50/50	11.3448
945121	AF1-177	1.0308	Adder	1.21
945161	AF1-181	0.0770	Adder	0.09
945171	AF1-182	0.3849	Adder	0.45
945181	AF1-183	0.0953	Adder	0.11
945331	AF1-198	0.2317	Adder	0.27
945451	AF1-210 C	0.9320	Adder	1.1
945452	AF1-210 E	0.6214	Adder	0.73
945551	AF1-220 C	10.7563	Adder	12.65
945552	AF1-220 E	7.1748	Adder	8.44
945751	AF1-240 C O1	1.3002	Adder	1.53
945752	AF1-240 E O1	0.8668	Adder	1.02
946111	AF1-276 C	9.7533	Adder	11.47
946112	AF1-276 E	4.8038	Adder	5.65
946121	AF1-277 C	9.7533	Adder	11.47
946122	AF1-277 E	4.8038	Adder	5.65
946131	AF1-278 C	7.7735	Adder	9.15
946132	AF1-278 E	3.8664	Adder	4.55
946211	AF1-286 C O1	0.7403	Adder	0.87
946212	AF1-286 E O1	0.5027	Adder	0.59
946221	AF1-287 C	4.1222	50/50	4.1222
946222	AF1-287 E	2.7482	50/50	2.7482
946381	AF1-302 C	1.9622	Adder	2.31
946382	AF1-302 E	2.6163	Adder	3.08
946401	AF1-304 C	12.1222	Adder	14.26
946402	AF1-304 E	8.0815	Adder	9.51
946421	AF1-306 C	5.6819	Adder	6.68
946422	AF1-306 E	22.7276	Adder	26.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	4.1222	50/50	4.1222
946772	AF1-217 E O2	2.7482	50/50	2.7482
957161	AF2-010 C	14.1675	50/50	14.1675
957162	AF2-010 E	9.5477	50/50	9.5477
957451	AF2-039 C	0.4050	Adder	0.9
957452	AF2-039 E	0.2700	Adder	0.6
957571	AF2-051 C O1	10.2145	50/50	10.2145
957572	AF2-051 E O1	5.2620	50/50	5.2620
957581	AF2-052 C	2.5484	Adder	5.66
957582	AF2-052 E	1.2398	Adder	2.75
957681	AF2-062 C	8.9864	Adder	19.95
957682	AF2-062 E	5.9909	Adder	13.3
957941	AF2-088 C	0.1950	Adder	0.43
957942	AF2-088 E	0.1300	Adder	0.29
957951	AF2-089 C	0.8265	50/50	0.8265
957952	AF2-089 E	0.4258	50/50	0.4258
958031	AF2-097 C	1.0829	50/50	1.0829
958032	AF2-097 E	0.7219	50/50	0.7219
958361	AF2-130 C	1.0081	Adder	2.24
958362	AF2-130 E	0.6720	Adder	1.49
958731	AF2-164 C O1	11.9026	50/50	11.9026
958732	AF2-164 E O1	7.9350	50/50	7.9350
958741	AF2-165 C	1.2049	Adder	2.67
958742	AF2-165 E	0.8033	Adder	1.78
958751	AF2-166 C	1.0081	Adder	2.24
958752	AF2-166 E	0.6720	Adder	1.49
958791	AF2-170 C	4.6134	50/50	4.6134
958792	AF2-170 E	3.0756	50/50	3.0756
959441	AF2-235 C	1.5028	50/50	1.5028
959442	AF2-235 E	1.0018	50/50	1.0018
959461	AF2-237 C	1.8652	50/50	1.8652
959462	AF2-237 E	1.2435	50/50	1.2435
959471	AF2-238 C	0.5669	Adder	1.26
959472	AF2-238 E	0.3779	Adder	0.84
959491	AF2-240 C	0.5232	Adder	1.16
959492	AF2-240 E	0.4457	Adder	0.99
959501	AF2-241 C	0.5474	Adder	1.22
959502	AF2-241 E	0.4214	Adder	0.94
959521	AF2-243 C	0.9037	Adder	2.01
959522	AF2-243 E	0.6024	Adder	1.34
959741	AF2-265 C	0.4063	Adder	0.9
959742	AF2-265 E	0.3023	Adder	0.67
959822	AF2-273 E	0.1985	Adder	0.44
960041	AF2-295 C	0.7083	Adder	1.57
960042	AF2-295 E	0.4722	Adder	1.05
960051	AF2-296 C	0.5556	Adder	1.23
960052	AF2-296 E	0.3704	Adder	0.82
960321	AF2-323 C O1	8.1333	50/50	8.1333
960322	AF2-323 E O1	5.4222	50/50	5.4222
961141	AF2-405	0.4844	Adder	1.08
961151	AF2-406	3.6332	Adder	8.06
961201	AF2-411 O1	15.2747	Adder	33.91

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961211	AF2-412 O1	6.5786	Adder	14.6
NEWTON	NEWTON	3.1547	Confirmed LTF	3.1547
FARMERCITY	FARMERCITY	0.1625	Confirmed LTF	0.1625
G-007A	G-007A	5.9050	Confirmed LTF	5.9050
VFT	VFT	16.2217	Confirmed LTF	16.2217
CALDERWOOD	CALDERWOOD	1.1610	Confirmed LTF	1.1610
PRAIRIE	PRAIRIE	7.3641	Confirmed LTF	7.3641
CHEOAH	CHEOAH	1.1617	Confirmed LTF	1.1617
EDWARDS	EDWARDS	1.0731	Confirmed LTF	1.0731
TILTON	TILTON	1.9076	Confirmed LTF	1.9076
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.6058	Confirmed LTF	1.6058
BLUEG	BLUEG	5.0344	Confirmed LTF	5.0344
TRIMBLE	TRIMBLE	1.6166	Confirmed LTF	1.6166
CATAWBA	CATAWBA	0.6682	Confirmed LTF	0.6682

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
99744102	919490	AA2-000 TAP	PENELEC	200908	26CHAPMAN+	PENELEC	1	Base Case	single	546.0	119.25	124.03	DC	26.09

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O1	6.3282	80/20	6.3282
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	1.2774	80/20	1.2774
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O1	26.0910	80/20	26.0910
961211	AF2-412 O1	12.8895	80/20	12.8895
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

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
99743514	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.06	157.66	DC	87.89

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

11.6.28 Index 28

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743444	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.68	177.54	DC	88.12

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

11.6.29 Index 29

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743544	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	150.9	153.75	DC	39.54

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
AB1-182	Bear Creek	Engineering and Procurement
AB2-019	Erie West 345kV	Engineering and Procurement
AC1-025	Dale Summit	In Service
AC1-071	Paupack-Lackawanna 230kV	Suspended
AD1-108	Grover 34 kV	In Service
AD1-109	Canton 34.5 kV	In Service
AD1-110	North Meshoppen 34.5 kV	In Service
AD1-142	Milan 34.5 kV	In Service
AD1-154	Timblin 34.5 kV	Active
AD2-055	Moshannon-East Towanda 230 kV	Active
AD2-133	Eagle Valley 115kV	Active
AE1-051	East Carbondale-Lackawanna 69kV	Active
AE1-053	Meyersdale North	Active
AE1-059	Stanton-Summit 230 kV	Active
AE1-116	Somerset Windpower 23 kV	Active
AE1-123	Emlenton 34.5 kV	Engineering and Procurement
AE1-128	Bedford North-Wills Mounain 115 kV	Active
AE1-147	Bellefonte 46 kV	Engineering and Procurement
AE1-160	Venango 34.5 kV	Engineering and Procurement
AE2-001	Nittany-Zion 46 kV	Active
AE2-055	Shingletown-Boalsburg 46 kV	Suspended
AE2-074	Potter 46 kV	Active
AE2-113	Farmers Valley-Ridgeway 115 kV	Active
AE2-117	ABW Tap-Alexandria 46 kV	Active
AE2-118	ABW Tap-Williamsburg 46 kV	Active
AE2-120	Graymont-Zion 46 kV	Active
AE2-121	Milesburg-Tanney Junction 46 kV	Active
AE2-126	Dubois-Curwensville 34.5 kV	Active
AE2-129	Philipsburg-Clarence 34.5 kV	Active

Queue Number	Project Name	Status
AE2-131	Philipsburg-Karthaus 34.5	Active
AE2-139	East Towanda-Grover 230 kV	Active
AE2-224	Bearrock-Johnstown 230 kV	Active
AE2-248	Fillmore-Thompson Farm 46 kV	Active
AE2-262	Moshannon-Milesburg 230 kV	Active
AE2-263	Moshannon-Milesburg 230 kV	Active
AE2-264	Altoona-Raystown 230 kV	Active
AE2-299	Erie East 230 kV	Active
AE2-316	Brookville-Squab Hollow 138 kV	Active
AE2-344	Edinboro South-Venango Junction 115 kV	Active
AF1-006	Fairview East 34.5 kV	Active
AF1-039	Listonburg-Highpoint 24.9 kV	Active
AF1-043	Moshannon-East Towanda 230 kV	Active
AF1-068	Boalsburg-Centre Hall 46 kV	Active
AF1-086	Madera-Westover South 115 kV	Active
AF1-094	Union City-Cambridge Springs 34.5 kV	Active
AF1-096	Titusville-Oil Creek 34.5 kV	Active
AF1-098	Four Mile Jct-Corry East 115 kV	Active
AF1-099	Moshannon-Milesburg 230 kV	Active
AF1-100	Shawville-Moshannon 230 kV	Active
AF1-103	Warren 34.5 kV	Active
AF1-104	Erie West 34.5 kV	Active
AF1-106	East Sayre 34.5 kV	Active
AF1-112	Centre Hall-Boalsburg 46 kV	Active
AF1-132	Shingletown-Boalsburg 46 kV	Active
AF1-134	Philipsburg-Madera 34.5 kV	Active
AF1-140	Claysburg 23 kV	Engineering and Procurement
AF1-142	Moshannon-Milesburg 230 kV	Active
AF1-143	Lick Run 115 kV	Active
AF1-149	Graymont-Zion 46 kV	Active
AF1-153	Motion-Ridgeway 46 kV	Active
AF1-155	Paper City-Wilcox 46 kV	Engineering and Procurement
AF1-167	West Freedom-C&K Coal 25 kV	Active
AF1-170	Springboro-Venango Junction 115 kV	Active
AF1-177	Warren 115 kV	Partially in Service - Under Construction
AF1-181	Shawville 3 230 kV	Partially in Service - Under Construction
AF1-182	Shawville 4 230 kV	Partially in Service - Under Construction
AF1-183	Shawville 1 230 kV	Partially in Service - Under Construction
AF1-198	Blossburg #1 CT 34.5 kV	Partially in Service - Under Construction
AF1-210	Burma 23 kV	Engineering and Procurement
AF1-214	Nittany-Zion 46 kV	Active
AF1-217	Edinboro -Cambridge Springs 34.5 kV	Active
AF1-220	Ridgway-Whetstone 115 kV	Active
AF1-232	Allegheny-Somerset 115 kV	Active
AF1-240	Timblin 34.5 kV	Active
AF1-272	Lucerne 115 kV	Active
AF1-273	Allegheny 115 kV	Active
AF1-276	Lewis Run-Pierce Brook 230 kV	Active
AF1-277	Lewis Run-Pierce Brook 2 230 kV	Active
AF1-278	Lewis Run-Pierce Brook 3 230 kV	Active
AF1-286	East Sayre 34.5 kV II	Active
AF1-287	Edinboro South 34.5 kV II	Active

Queue Number	Project Name	Status
AF1-302	Brookville-Squab Hollow 138 kV	Active
AF1-304	Titusville-Grandview 115 kV	Active
AF1-306	Squab Hollow 230 kV	Active
AF1-307	Seward-Jackson Rd 115 kV	Active
AF1-321	Hooversville 115 kV I	Active
AF2-001	Hooversville 115 kV II	Active
AF2-002	Hooversville 115 kV III	Active
AF2-006	Jermyn Tap-Brownell 69 kV	Active
AF2-007	Tinker Tap-East Carbondale 69 kV	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
AF2-164	Handsome Lake 345 kV	Active
AF2-165	Clark Summit-Emlenton 34.5 kV	Active
AF2-166	Clark Summit-Emlenton 34 kV	Active
AF2-170	Erie West-Springboro 34.5 kV	Active
AF2-197	East Towanda 115 kV	Active
AF2-221	Scalp Level 22.9 kV	Active
AF2-231	Belleville 12.47 kV	Active
AF2-235	Titusville-Oil Creek 34.5 kV	Active
AF2-237	Union City-Cambridge Springs 34.5 kV	Active
AF2-238	Mansfield-South Troy 34.5 kV	Active
AF2-239	Wyalusing-Hollenback WRC 34.5 kV	Active
AF2-240	North Orwell 12.47 kV	Active
AF2-241	Athens-Milan 34.5 kV	Active
AF2-243	Clark Summit 34.5 kV	Active
AF2-265	South Troy-Athens 34.5 kV	Active
AF2-270	Bedford South RCB-Bedford Area 23 kV	Active
AF2-271	Pemberton-Sinking Valley 12.47 kV	Active
AF2-273	Sligo 25 kV	Active
AF2-282	Edelle 12.47 kV	Active
AF2-283	Greenfield 12.47 kV	Active
AF2-285	W. Damascus 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

Queue Number	Project Name	Status
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
AF2-336	Snake Spring 115 kV I	Active
AF2-337	Snake Spring 115 kV II	Active
AF2-338	Snake Spring 115 kV III	Active
AF2-339	Snake Spring 115 kV IV	Active
AF2-380	Karns City-Bear Creek 25 kV	Active
AF2-381	Bedford North-Central City West 115 kV	Active
AF2-405	East Sayre 34.5 kV III	Active
AF2-406	Sayre 115 kV	Active
AF2-411	Mainesburg 345 kV	Active
AF2-412	Mainesburg 115 kV	Active
AF2-417	West Damascus Tap-West Damascus 69 kV	Active
AF2-436	Wyalusing 34.5 kV II	Active
AF2-437	Oxbow 34.5 kV III	Active
V3-030	St. Benedict-Patton 46kV	In Service
X1-109	E. Towanda 230kV	In Service
X3-003	Mehoopany II 115 kV	In Service
Y1-033	Penn Mar-Rock Wood 115kV	In Service
Y1-047	North Meshoppen 34.5kV	In Service
Y2-042	Oxbow 25kV	In Service
Y2-055	Elm Street 34.5kV	Withdrawn
Y2-089	Lackawanna 230kV	In Service
Y3-092	Erie West 345kV	Engineering and Procurement
Z1-038	Florey Knob 34.5kV	Withdrawn
Z1-069	Gold-Sabinsville 115kV	In Service
Z1-091	Lenox 34kV	Withdrawn
Z1-092	Milan 34kV	In Service
Z1-110	Grover 34kV	In Service
Z2-011	Canton 34.5kV	In Service
Z2-104	Oxbow 25kV II	In Service
Z2-107	East Carbondale-Lackawanna 69kV	Suspended
Z2-108	Meyersdale North 115kV	In Service

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
PN-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PN-P2_3-PN-230-0252-C	CONTINGENCY 'PN-P2_3-PN-230-0252-C' /* SHELOCTA 230 KV STUCK BREAKER (HOMER CITY/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PN-P2_3-PN-230-0252-A	CONTINGENCY 'PN-P2_3-PN-230-0252-A' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PL_P42_001057	CONTINGENCY 'PL_P42_001057' /* LACK-PAUP 230KV STUCK BREAKER CONNECTED TO LACK TR2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 925950 CKT 1 /* LACK-AC1-071 TAP 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* LACK-LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 4 /* LACK-LACKAW 500/230KV T4 END
PL_P42_001056	CONTINGENCY 'PL_P42_001056' /* LACK-SUMT 2 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 2 /* LACK-SUMT 2 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 END

Contingency Name	Contingency Definition
PL_P42_001055	CONTINGENCY 'PL_P42_001055' /* LACK-SUMT 1 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500-230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 1 /* LACK-SUMT 1 230 END
AP-P1-2-WP-230-324T_FSA_A-B	CONTINGENCY 'AP-P1-2-WP-230-324T_FSA_A-B' /* MOSHANNON-MARSHALL 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235220 TO BUS 200908 CKT 1 /* 01MOSHAN 230 26CHAPMAN+ 230 DISCONNECT BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 /* 26CHAPMAN+ 230 AA2-000 TAP 230 END
PL_P12_000193	CONTINGENCY 'PL_P12_000193' /* NMES-LACK 230KV LINE DISCONNECT BRANCH FROM BUS 200677 TO BUS 200706 CKT 3 /* NO MESHO-N.MESHPN 115-230 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 END
PN-P1-2-PN-230-102T	CONTINGENCY 'PN-P1-2-PN-230-102T' /* NORTH MESHOPPEN - LACKAWANNA 230KV RTEP B2952 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* 26N.MESHPN 230 26OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* 26OXBOW 230 LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* 26OXBOW 230 26OXBOW 35 END
PN-P2_3-PN-230-0252-B	CONTINGENCY 'PN-P2_3-PN-230-0252-B' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/HOMER CITY) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 END

Contingency Name	Contingency Definition
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
PL_P13_100348	CONTINGENCY 'PL_P13_100348' /* LACK 500/230KV T4 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK-LACKAW 500- 230 T3 END
ATSI-P7-1-CEI-345-016	CONTINGENCY 'ATSI-P7-1-CEI-345-016' /* PERRY-NORTHFEILD AND PERRY- LC 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 239036 TO BUS 239358 CKT 1 /* 02PERRY 345 02NFIELD 345 DISCONNECT BRANCH FROM BUS 239036 TO BUS 239334 CKT 1 /* 02PERRY 345 02L.CENTER 345 END
AP-P2-2-WP-230-005T	CONTINGENCY 'AP-P2-2-WP-230-005T' /* SHINGLETOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
T:61&64	
ATSI-P7-1-CEI-345-017	CONTINGENCY 'ATSI-P7-1-CEI-345-017' /* PERRY-NORTHFEILD AND LC- HARDING 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 239036 TO BUS 239358 CKT 1 /* 02PERRY 345 02NFIELD 345 DISCONNECT BRANCH FROM BUS 239334 TO BUS 238783 CKT 1 /* 02L.CENTER 345 02HARDIN 345 END

Contingency Name	Contingency Definition
PL_P12_001029	CONTINGENCY 'PL_P12_001029' /* LACK-LAEN 230KV LINE DISCONNECT BRANCH FROM BUS 208009 TO BUS 208054 CKT 1 /* LACK-LAEN 230 DISCONNECT BUS 208054 /* LACKAWANNA ENERGY GEN BUS END
PL_P13_100347	CONTINGENCY 'PL_P13_100347' /* LACK 500/230KV T3 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 END
PN-P2-3-PN-230-9I	CONTINGENCY 'PN-P2-3-PN-230-9I' /* 579 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 DISCONNECT BRANCH FROM BUS 200807 TO BUS 200808 CKT 1 /* 26PIERC230 230 26PIERC138 138 DISCONNECT BRANCH FROM BUS 200808 TO BUS 200809 CKT 1 /* 26PIERC138 138 26SITHE 138 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202640 CKT N/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYN 23.00 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 END
PN-P2-3-PN-115-23D	CONTINGENCY 'PN-P2-3-PN-115-23D' /* 622 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200568 CKT 6 /* 26ERIE SO. 115 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200600 CKT 5 /* 26ERIE SO. 230 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200571 CKT 1 /* 26ERIE SO. 115 26UNION CY 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200572 CKT 1 /* 26ERIE SO. 115 26EDINB S. 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200850 CKT 1 /* 26ERIE SO. 115 26GESG TAP 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200589 CKT 1 /* 26ERIE SO. 115 26FR RD. W 115 DISCONNECT BRANCH FROM BUS 200589 TO BUS 200635 CKT 5 /* 26FR RD. W 115 26FR RD W. 35 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 END
PN-P1-2-PN-230-013A	CONTINGENCY 'PN-P1-2-PN-230-013A' /* EAST TOWANDA - NORTH MESHOPPEN 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 200924 CKT 1 /* 26E.TWANDA 230 26CANYON 230 DISCONNECT BRANCH FROM BUS 200924 TO BUS 200706 CKT 1 /* 26CANYON 230 26N.MESHPN 230 END

Contingency Name	Contingency Definition
PL_P13_100329	CONTINGENCY 'PL_P13_100329' /* LACK 230/69KV LACK T1 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500-230 T3 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P13_100328	CONTINGENCY 'PL_P13_100328' /* LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 2 /* LACK T2 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK T4 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
ATSI-P1-3-SYS-345-722	CONTINGENCY 'ATSI-P1-3-SYS-345-722' /* TRAN 02S8-ATT 345 TO 02ASH_3 138 CK 8 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 END
PN-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

Contingency Name	Contingency Definition
PN-P1-3-PN-230-008	CONTINGENCY 'PN-P1-3-PN-230-008' /* ERIE SOUTH #6 230/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200568 TO BUS 200567 CKT 6 /* 26ERIE SO. 230 26ERIE SO. 115 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200918 CKT ZB /* 26ERIE SO. 230 26ERIE S TIE230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200600 TO BUS 200568 CKT 5 /* 26ERIE SO 345 26ERIE SO. 230 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
PN-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
Base Case	
200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 END
PN-P1-2-PN-230-025	CONTINGENCY 'PN-P1-2-PN-230-025' /* CONEMAUGH - SEWARD 230KV DISCONNECT BRANCH FROM BUS 200912 TO BUS 200793 CKT 1 /* 26CONEMAGH 230 26SEWARD 2 230 END
PJM500_PN_P4-500-001A	CONTINGENCY 'PJM500_PN_P4-500-001A' /* KEYSTONE 500KV BKR 1 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200033 /* KEYS G2 20 REMOVE MACHINE L FROM BUS 200033 /* KEYS G2 20 DISCONNECT BUS 200033 /* KEYS G2 20 END

Contingency Name	Contingency Definition
PN-P1-2-PN-345-003	CONTINGENCY 'PN-P1-2-PN-345-003' /* HANDSOME LAKE - WAYNE 345KV DISCONNECT BRANCH FROM BUS 200826 TO BUS 200595 CKT 1 /* 26HANDSMLK 345 26WAYNE 345 END
PN-P1-2-PN-345-001	CONTINGENCY 'PN-P1-2-PN-345-001' /* ERIE WEST - WAYNE 345KV DISCONNECT BRANCH FROM BUS 200599 TO BUS 200595 CKT 1 /* 26ERIE W 345 26WAYNE 345 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
200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 235220 CKT 1 END
PN-P2-3-PN-230-9G-A	CONTINGENCY 'PN-P2-3-PN-230-9G-A' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERSVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200743 TO BUS 200796 CKT 3 /* 26HOOVERSV 115 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END

Contingency Name	Contingency Definition
PN-P1_2-PN-230-0103	CONTINGENCY 'PN-P1_2-PN-230-0103' /* SHELOCTA - KEYSTONE 230 KV LINE OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 END
ATSI-P7-1-CEI-345-012	CONTINGENCY 'ATSI-P7-1-CEI-345-012' /* PERRY-EASTLAKE AND PERRY- NORTHFIELD 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 238684 TO BUS 239036 CKT 1 /* 02EASTLK 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 239358 TO BUS 239036 CKT 1 /* 02NFIELD 345 02PERRY 345 END
PN-P1-2-PN-230-101T	CONTINGENCY 'PN-P1-2-PN-230-101T' /* EAST TOWANDA - HILLSIDE 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 130763 CKT 1 /* 26E.TWANDA 230 HILSD230 230 END
PN-P1-3-PN-230-027	CONTINGENCY 'PN-P1-3-PN-230-027' /* ERIE SOUTH #7 XFMR FAULT DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
ATSI-P1-1-CEI-345-711	CONTINGENCY 'ATSI-P1-1-CEI-345-711' /* GEN 02PERRG1 22.0 UNIT 1 REMOVE MACHINE 1 FROM BUS 239035 /* 02PERRG1 22 END
PN-P1-3-PN-230-001T	CONTINGENCY 'PN-P1-3-PN-230-001T' /* CONEMAUGH #1 500/230KV XFMR DISCONNECT BRANCH FROM BUS 200005 TO BUS 200912 CKT 3 /* CONEM-GH 500 26CONEMAGH 230 END

12 Short Circuit Analysis - Primary POI

To be performed in System Impact phase.

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AF2-411 was evaluated as a 300.0 MW (Capacity 300.0 MW) injection at the Mainesburg 115 kV substation in the PENELEC area. Project AF2-411 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-411 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

13.1 Generation Deliverability

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

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
99744158	200706	26N.MESH P N	230.0	PENELE C	200708	26OXBO W	230.0	PENELE C	1	Base Case	singl e	855.0	99.19	109.62	DC	93.48
99744178	200708	26OXBOW	230.0	PENELE C	208009	LACK	230.0	PPL	1	Base Case	singl e	855.0	97.65	106.76	DC	94.82

13.2 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	CON T NAME	Type	Rating MVA	PRE PROJE T LOADIN G %	POST PROJE T LOADIN G %	AC D C	MW IMPAC T
151335485	200663	26TWO MILE	115.0	PENELE C	235234	01POTTER	115.0	AP	1	PN-P2-3-PN-115-84D1	break er	245.0	25.23	129.81	DC	256.22
152448761	200663	26TWO MILE	115.0	PENELE C	200944	26PIERCEBRK	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	245.0	21.96	126.54	DC	256.22
111749212	200669	26GOLD	115.0	PENELE C	203348	26Z1-069 TAP	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	21.34	171.78	DC	256.22
152448836	200669	26GOLD	115.0	PENELE C	200923	26TENGASV M	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	245.0	14.12	118.7	DC	256.22
111749174	200670	26SABINSVI	115.0	PENELE C	200671	26NILES VA	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	30.02	179.0	DC	256.25
152448780	200670	26SABINSVI	115.0	PENELE C	203348	26Z1-069 TAP	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	-25.01	123.97	DC	256.25
152448629	200671	26NILES VA	115.0	PENELE C	203345	26WELLSBOR O+	115.0	PENELE C	ZL	PN-P2-3-PN-115-84D1	break er	185.0	21.47	159.99	DC	256.25
152448759	200671	26NILES VA	115.0	PENELE C	200670	26SABINSVI	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	-20.59	128.39	DC	256.25
152448640	200672	26MANSFIEL	115.0	PENELE C	200929	26MAINESBU RG	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	191.0	0.0	157.07	DC	300.0

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CON T NAME	Type	Rating MVA	PRE PROJE C T LOADIN G %	POST PROJE C T LOADIN G %	AC D C	MW IMPAC T
152448715	200672	26MANSFIEL	115.0	PENELE C	203345	26WELLSBOR O+	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	breaker	185.0	-2.82	135.69	DC	256.25
152448842	200673	26SOUTH TR	115.0	PENELE C	200885	26EVERT DR	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	242.0	-6.62	117.34	DC	299.97
152448863	200673	26SOUTH TR	115.0	PENELE C	200817	26TENNGAS	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	344.0	35.0	114.92	DC	274.95
152448886	200817	26TENNGAS	115.0	PENELE C	200674	26TOWANDA	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	344.0	32.41	112.34	DC	274.95
101443118	200885	26EVERT DR	115.0	PENELE C	200673	26SOUTH TR	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	242.0	41.5	165.46	DC	299.97
152448798	200885	26EVERT DR	115.0	PENELE C	200929	26MAINESBURG	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	245.0	0.0	122.45	DC	300.0
151335519	200923	26TENGASV M	115.0	PENELE C	235234	01POTTER	115.0	AP	1	PN-P2-3-PN-115-84D1	breaker	245.0	12.36	116.94	DC	256.22
152448797	200923	26TENGASV M	115.0	PENELE C	200669	26GOLD	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	breaker	245.0	16.94	122.56	DC	256.22
152448637	200929	26MAINESBURG	115.0	PENELE C	200672	26MANSFIEL	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	breaker	191.0	0.0	157.07	DC	300.0
152448803	200929	26MAINESBURG	115.0	PENELE C	200885	26EVERT DR	115.0	PENELE C	1	PN-P2-3-PN-115-84A1	breaker	245.0	0.0	122.45	DC	300.0
152448716	200944	26PIERCEBRK	115.0	PENELE C	200663	26TOWMILE	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	breaker	245.0	30.29	134.87	DC	256.22
152448647	203345	26WELLSBOR O+	115.0	PENELE C	200672	26MANSFIEL	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	breaker	185.0	11.58	150.1	DC	256.25
152448773	203345	26WELLSBOR O+	115.0	PENELE C	200671	26NILES VA	115.0	PENELE C	ZL	PN-P2-3-PN-115-84D1	breaker	185.0	-12.71	125.8	DC	256.25

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CON T NAME	Type	Ratin g MVA	PRE PROJEC T LOADIN G %	POST PROJEC T LOADIN G %	AC D C	MW IMPAC T
101443096	203348	26Z1-069 TAP	115.0	PENELE C	200670	26SABINSVI	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	34.44	183.42	DC	256.25
111749211	203348	26Z1-069 TAP	115.0	PENELE C	200669	26GOLD	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	172.0	22.9	171.86	DC	256.22
151335484	235234	01POTTER	115.0	AP	200663	26TWO MILE	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	245.0	27.02	131.61	DC	256.22
151335496	235234	01POTTER	115.0	AP	200923	26TENGASV M	115.0	PENELE C	1	PN-P2-3-PN-115-84D1	break er	245.0	18.7	124.31	DC	256.22
98949466	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-017	tower	1667.0	99.67	100.44	DC	28.18

13.3 Contribution to Previously Identified Overloads

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Ratin g MVA	PRE PROJEC T LOADIN G %	POST PROJEC T LOADIN G %	AC D C	MW IMPAC T
99743880	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	Base Case	single	520.0	137.09	140.83	DC	19.81
155951004	200593	26GLADE	230.0	PENEL EC	200811	26WARREN	230.0	PENEL EC	1	PN-P1-2-PN-345-003-A	single	621.0	131.64	134.68	DC	21.88
98948842	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-4-PN-230-14GT	break er	1900.0	119.91	121.2	DC	54.72
98948843	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-3-PN-230-14CT	break er	1900.0	119.62	120.92	DC	54.72
98948844	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	PN-P2-3-PN-230-14FT	break er	1900.0	119.62	120.92	DC	54.72
98949081	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	single	1560.0	111.56	113.04	DC	51.05
101443121	200674	26TOWAND A	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202.0	179.31	200.16	DC	42.14
99743892	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	146.55	157.83	DC	75.42
99743893	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	single	515.0	143.31	155.17	DC	64.44
99743212	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P2-2-WP-230-005T	bus	984.0	129.04	133.48	DC	96.57
99744157	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	107.87	118.06	DC	105.06
99743227	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	128.68	133.18	DC	97.95

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
99744176	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	106.16	115.13	DC	106.52
98948999	200726	26SHAWVL2	230.0	PENEL EC	235248	01SHINGL	230.0	AP	1	AP-P1-2-WP-230-006	single	554.0	105.8	107.06	DC	15.53
99743668	200767	26HOMER CT	230.0	PENEL EC	200793	26SEWARD2	230.0	PENEL EC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	109.0	114.21	DC	42.57
99743840	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	153.77	156.71	DC	59.38
99743841	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	153.77	156.71	DC	59.38
99743843	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	single	731.0	132.13	138.74	DC	49.83
99743195	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	147.0	156.51	DC	78.8
99743439	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.63	176.36	DC	78.99
99743509	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.0	156.51	DC	78.8
99743975	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	122.9	132.6	DC	79.26
99743979	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	ATSI-P1-2-CEI-345-700T	single	807.0	105.71	112.19	DC	53.46
99743980	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-2-PN-345-107T	single	807.0	105.71	112.19	DC	53.46
99744010	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	119.68	129.13	DC	78.82
99744014	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-2-PN-345-107T	single	824.0	101.2	107.4	DC	52.25
99744015	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	ATSI-P1-2-CEI-345-700T	single	824.0	101.2	107.4	DC	52.25
99743638	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-C	breaker	1147.0	123.5	125.28	DC	47.1
99743639	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-B	breaker	1147.0	123.48	125.26	DC	47.1
99743640	200793	26SEWARD2	230.0	PENEL EC	200912	26CONEMA GH	230.0	PENEL EC	1	PN-P2_3-PN-230-0252-A	breaker	1147.0	123.46	125.24	DC	47.1
99743409	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	199.19	202.12	DC	58.82
99743855	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	single	917.0	149.44	152.24	DC	59.28
99743856	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	single	917.0	149.44	152.24	DC	59.28
99743857	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-230-025	single	917.0	125.23	131.92	DC	62.02
99743858	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-3-PN-230-001T	single	917.0	125.23	131.92	DC	62.02
99743859	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	single	731.0	123.61	130.19	DC	49.25
99743538	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001A	breaker	635.0	151.36	153.99	DC	36.47
99743539	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	151.36	153.99	DC	36.47
99744072	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	single	635.0	101.1	106.72	DC	36.55
99744073	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-2-PN-345-107T	single	635.0	104.19	106.2	DC	29.44
99744074	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	ATSI-P1-2-CEI-345-700T	single	635.0	104.19	106.2	DC	29.44
99743573	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P2-3-PN-345-003A	breaker	621.0	140.04	141.32	DC	17.58
99744091	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	Base Case	single	520.0	101.46	104.48	DC	15.72

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECTIONS T LOADING %	POST PROJECTIONS T LOADING %	AC/D C	MW IMPACT
99744092	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P1-2-PN-115-100-A	single	621.0	101.9	104.7	DC	17.92
99743716	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P2-3-PN-115-23D	breaker	866.0	103.48	105.18	DC	32.44
98949038	200908	26CHAPMAN+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	single	520.0	125.36	131.08	DC	29.75
99743588	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-C	breaker	1066.0	132.89	134.8	DC	47.1
99743589	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-B	breaker	1066.0	132.86	134.77	DC	47.1
99743590	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	132.84	134.76	DC	47.1
99743936	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP	230.0	PENEL EC	1	Base Case	single	546.0	134.11	145.3	DC	64.44
99743937	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	134.45	144.87	DC	75.42
101442891	200927	26FOURMILE	115.0	PENEL EC	200820	26ERIE SE	115.0	PENEL EC	1	PN-P2-3-PN-230-6G	breaker	245.0	151.56	154.6	DC	16.43
99743643	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P42_001057	breaker	1167.0	120.22	122.23	DC	51.13
99743700	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001056	breaker	1145.0	107.04	108.88	DC	46.0
99743701	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001055	breaker	1145.0	107.04	108.88	DC	46.0
100836925	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	single	268.0	145.36	148.01	DC	15.72
100836926	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	single	268.0	145.36	148.01	DC	15.72
98949005	235219	01MILES B	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-2-WP-230-322T	single	554.0	122.33	123.83	DC	18.29
98949006	235219	01MILES B	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-3-WP-230-325T	single	554.0	121.76	123.27	DC	18.42
98948976	235248	01SHINGL	230.0	AP	200513	26LEWISTWN	230.0	PENEL EC	1	PN-P1-2-PN-230-004	single	570.0	152.09	156.62	DC	26.19
98949463	239036	02PERRY	345.0	ATSI	239334	02L.CENTER	345.0	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	138.87	139.79	DC	33.7
98949465	239036	02PERRY	345.0	ATSI	238684	02EASTLK	345.0	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	130.75	131.65	DC	32.55
99744102	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMAN+	230.0	PENEL EC	1	Base Case	single	546.0	119.39	124.84	DC	29.75
99743198	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	146.99	156.5	DC	78.8
99743514	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	146.99	156.5	DC	78.8
99744018	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	single	824.0	119.68	129.13	DC	78.82
99744022	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-2-PN-345-107T	single	824.0	101.19	107.38	DC	52.25
99744023	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	ATSI-P1-2-CEI-345-700T	single	824.0	101.19	107.38	DC	52.25
99743444	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.61	176.34	DC	78.99
99743985	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	single	807.0	122.89	132.59	DC	79.26
99743989	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-2-PN-345-107T	single	807.0	105.7	112.18	DC	53.46
99743990	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	ATSI-P1-2-CEI-345-700T	single	807.0	105.7	112.18	DC	53.46
99743543	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	breaker	634.0	150.86	153.49	DC	36.47
99743544	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	150.86	153.49	DC	36.47
99744081	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	single	634.0	100.53	106.16	DC	36.55

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 DC	MW IMPACT
99744082	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-2-PN-345-107T	single	634.0	103.61	105.63	DC	29.44
99744083	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	ATSI-P1-2-CEI-345-700T	single	634.0	103.61	105.63	DC	29.44

13.4 Potential Congestion due to Local Energy Deliverability

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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPACT
99744224	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	776.0	111.34	113.07	DC	29.75
98949076	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	Base Case	operation	1560.0	131.77	133.24	DC	51.05
98949077	200599	26ERIE W	345.0	PENEL EC	238547	02AT	345.0	ATSI	1	ATSI-P1-1-CEI-345-711	operation	1900.0	119.7	120.92	DC	51.05
101443120	200674	26TOWAN DA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operation	202.0	218.42	227.5	DC	42.14
99743885	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operation	515.0	174.36	179.1	DC	64.44
99743886	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	615.0	166.75	171.94	DC	75.42
99743887	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN2302301	operation	615.0	166.75	171.94	DC	75.42
99743888	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP 2301	operation	615.0	166.75	171.94	DC	75.42
99744150	200706	26N.MESH PN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	Base Case	operation	855.0	122.99	127.94	DC	93.48
99744151	200706	26N.MESH PN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP 2301	operation	984.0	124.19	129.03	DC	105.06

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 DC	MW IMPA CT
99744152	200706	26N.MESH PN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	20090826CHAPMAN+ 23023522001MOSHAN2302301	operation	984.0	124.19	129.03	DC	105.06
99744153	200706	26N.MESH PN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	984.0	124.19	129.03	DC	105.06
99744170	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	984.0	123.36	128.26	DC	106.52
99744171	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	20090826CHAPMAN+ 230919490AA2-000TAP 2301	operation	984.0	123.36	128.26	DC	106.52
99744172	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	20090826CHAPMAN+ 23023522001MOSHAN2302301	operation	984.0	123.36	128.26	DC	106.52
99744173	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	Base Case	operation	855.0	117.31	122.33	DC	94.82
99743835	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	208.24	211.16	DC	59.38
99743836	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	208.24	211.16	DC	59.38
99743837	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	Base Case	operation	731.0	187.93	190.95	DC	49.83
99743974	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	150.36	160.12	DC	79.26
99743978	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	Base Case	operation	653.0	106.6	113.52	DC	45.47
99744009	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	146.43	155.93	DC	78.82
99744013	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	Base Case	operation	647.0	105.15	111.98	DC	44.44
99744208	200793	26SEWARD 2	230.0	PENEL EC	200912	26CONEMAGH	230.0	PENEL EC	1	PN-P1_2-PN-230-0103	operation	1147.0	120.68	122.52	DC	46.36
99743850	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	198.25	201.21	DC	59.28
99743851	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	198.25	201.21	DC	59.28
99743854	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	Base Case	operation	731.0	175.07	178.16	DC	49.25
99744067	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operation	635.0	145.07	147.71	DC	36.55
99744070	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	Base Case	operation	494.0	124.24	126.51	DC	24.45
99744086	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	Base Case	operation	520.0	142.16	143.53	DC	15.72
155951235	200811	26WARREN	230.0	PENEL EC	200918	26ERIE S TIE	230.0	PENEL EC	1	PN-P1-2-PN-345-003-A	operation	621.0	139.28	140.54	DC	17.36
99744269	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-008	operation	866.0	102.56	104.13	DC	30.09
99744270	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-027	operation	866.0	102.56	104.13	DC	30.09
152698491	200885	26EVERT DR	115.0	PENEL EC	200673	26SOUTH TR	115.0	PENEL EC	1	PN-P1-3-PN-345-001	operation	242.0	41.54	125.32	DC	202.75

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 DC	MW IMPA CT
152698571	200885	26EVERT DR	115.0	PENEL EC	200929	26MAINESB URG	115.0	PENEL EC	1	PN-P1-3-PN-345-001	operati on	245.0	30.99	113.75	DC	202.78
98949029	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	PL_P12_000193	operati on	621.0	146.81	150.38	DC	49.44
98949033	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	operati on	520.0	143.91	146.48	DC	29.75
99744165	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P1_2-PN-230-0103	operati on	1066.0	129.85	131.83	DC	46.36
99744169	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	Base Case	operati on	861.0	101.37	102.7	DC	29.58
99743931	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	163.39	167.86	DC	64.44
99743932	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN 230 230 1	operati on	666.0	153.11	157.9	DC	75.42
99743933	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	666.0	153.11	157.9	DC	75.42
99743934	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP 230 1	operati on	666.0	153.11	157.9	DC	75.42
111987352	203348	26Z1-069 TAP	115.0	PENEL EC	200670	26SABINSVI	115.0	PENEL EC	1	PN-P1-3-PN-230-033	operati on	172.0	80.31	101.41	DC	36.28
99744250	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100329	operati on	1145.0	105.03	106.81	DC	44.49
99744251	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100347	operati on	1145.0	105.03	106.81	DC	44.49
99744263	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100348	operati on	1167.0	103.08	104.83	DC	44.51
99744264	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100328	operati on	1167.0	103.08	104.83	DC	44.51
100836923	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	ATSI-P1-2-CEI-345-700T	operati on	268.0	188.08	190.73	DC	15.72
100836924	235203	01KISSNG	138.0	AP	235197	01KARNSC	138.0	AP	1	PN-P1-2-PN-345-107T	operati on	268.0	188.08	190.73	DC	15.72
98949000	235219	01MILES	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-2-WP-230-322T	operati on	554.0	160.18	161.68	DC	18.29
98949170	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	ATSI-P1-3-SYS-345-722	operati on	1891.0	103.99	105.17	DC	49.62
98949171	238547	02AT	345.0	ATSI	239036	02PERRY	345.0	ATSI	1	Base Case	operati on	1534.0	99.59	100.84	DC	42.43
99744096	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	PL_P12_000193	operati on	666.0	136.89	140.22	DC	49.44
99744097	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	Base Case	operati on	546.0	137.06	139.5	DC	29.75
98949097	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-3-WP-230-005	operati on	600.0	123.96	125.51	DC	20.54
98949098	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-2-WP-230-005B	operati on	600.0	123.96	125.51	DC	20.54
99744017	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operati on	824.0	146.43	155.93	DC	78.82
99744021	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	Base Case	operati on	647.0	105.15	111.98	DC	44.44
99743984	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operati on	807.0	150.35	160.11	DC	79.26

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 LOADING %	POST PROJE CT LOADING %	AC DC	MW IMPACT
99743988	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	Base Case	operation	653.0	106.58	113.5	DC	45.47
99744075	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	144.58	147.22	DC	36.55
99744080	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	Base Case	operation	493.0	123.54	125.81	DC	24.45

13.5 Flow Gate Details - Secondary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

13.5.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743212	200706	26N.MESHPN	PENELEC	200708	26OXBOW	PENELEC	1	AP-P2-2-WP-230-005T	bus	984.0	129.04	133.48	DC	96.57

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5899	Adder	0.69
941321	AE2-126 C	1.4861	Adder	1.75
941322	AE2-126 E	0.9908	Adder	1.17
941421	AE2-139 C	21.8690	Adder	25.73
941422	AE2-139 E	14.5793	Adder	17.15
942351	AE2-248 C	1.3016	Adder	1.53
942352	AE2-248 E	0.8677	Adder	1.02
942491	AE2-262 C	7.2633	Adder	8.55
942492	AE2-262 E	4.8809	Adder	5.74
942501	AE2-263 C	6.8275	Adder	8.03
942502	AE2-263 E	4.5584	Adder	5.36
943751	AF1-043	22.8185	Adder	26.85
944001	AF1-068 C O1	1.7269	Adder	2.03
944002	AF1-068 E O1	0.9714	Adder	1.14
944311	AF1-099 C	11.0256	Adder	12.97
944312	AF1-099 E	7.3504	Adder	8.65
944321	AF1-100 C	21.1268	Adder	24.86
944322	AF1-100 E	14.0845	Adder	16.57
944411	AF1-106 O1	6.5739	Adder	7.73
944471	AF1-112 C	1.7404	Adder	2.05
944472	AF1-112 E	0.9790	Adder	1.15
944671	AF1-132 C O1	1.6151	Adder	1.9
944672	AF1-132 E O1	1.0767	Adder	1.27
944771	AF1-142 C	17.6410	Adder	20.75
944772	AF1-142 E	11.7607	Adder	13.84
944841	AF1-149 C	1.6530	Adder	1.94
944842	AF1-149 E	1.1020	Adder	1.3
944881	AF1-153 C O1	1.4524	Adder	1.71
944882	AF1-153 E O1	0.9683	Adder	1.14
944901	AF1-155 C	1.4455	Adder	1.7
944902	AF1-155 E	0.9637	Adder	1.13
945161	AF1-181	0.1102	Adder	0.13
945171	AF1-182	0.5491	Adder	0.65
945181	AF1-183	0.1292	Adder	0.15
945331	AF1-198	0.7271	Adder	0.86
945491	AF1-214 C	1.6532	Adder	1.94
945492	AF1-214 E	1.1021	Adder	1.3
945551	AF1-220 C	11.5236	Adder	13.56
945552	AF1-220 E	7.6866	Adder	9.04
946111	AF1-276 C	8.5009	Adder	10.0
946112	AF1-276 E	4.1870	Adder	4.93
946121	AF1-277 C	8.5009	Adder	10.0
946122	AF1-277 E	4.1870	Adder	4.93
946131	AF1-278 C	6.7754	Adder	7.97
946132	AF1-278 E	3.3699	Adder	3.96
946211	AF1-286 C O1	2.6624	Adder	3.13
946212	AF1-286 E O1	1.8078	Adder	2.13
946421	AF1-306 C	6.3561	Adder	7.48
946422	AF1-306 E	25.4246	Adder	29.91
957451	AF2-039 C	0.5142	Adder	1.14
957452	AF2-039 E	0.3428	Adder	0.76
957581	AF2-052 C	2.7165	Adder	6.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3215	Adder	2.93
957681	AF2-062 C	8.1917	Adder	18.18
957682	AF2-062 E	5.4611	Adder	12.12
957941	AF2-088 C	0.2476	Adder	0.55
957942	AF2-088 E	0.1651	Adder	0.37
959061	AF2-197 C O2	18.6883	50/50	18.6883
959062	AF2-197 E O2	28.0325	50/50	28.0325
959471	AF2-238 C	2.0124	Adder	4.47
959472	AF2-238 E	1.3416	Adder	2.98
959481	AF2-239 C	5.0215	50/50	5.0215
959482	AF2-239 E	4.0263	50/50	4.0263
959491	AF2-240 C	1.8815	Adder	4.18
959492	AF2-240 E	1.6027	Adder	3.56
959501	AF2-241 C	1.9686	Adder	4.37
959502	AF2-241 E	1.5156	Adder	3.36
959741	AF2-265 C	1.4422	Adder	3.2
959742	AF2-265 E	1.0733	Adder	2.38
959913	AF2-282 BAT	0.1007	Merchant Transmission	0.1007
959923	AF2-283 BAT	0.1007	Merchant Transmission	0.1007
960022	AF2-293 E	0.0854	Adder	0.19
960031	AF2-294 C	2.3176	Adder	5.14
960032	AF2-294 E	1.5451	Adder	3.43
960041	AF2-295 C	0.7661	Adder	1.7
960042	AF2-295 E	0.5108	Adder	1.13
960271	AF2-318 C	5.4287	50/50	5.4287
960272	AF2-318 E	3.6191	50/50	3.6191
961141	AF2-405	1.7421	Adder	3.87
961151	AF2-406	13.0656	Adder	29.0
961201	AF2-411 O2	43.5034	Adder	96.57
961211	AF2-412 O2	17.4155	Adder	38.66
961451	AF2-436	0.6673	50/50	0.6673
WEC	WEC	0.4804	Confirmed LTF	0.4804
LGEE	LGEE	0.8369	Confirmed LTF	0.8369
CPL	CPL	0.5365	Confirmed LTF	0.5365
CBM-W2	CBM-W2	11.2858	Confirmed LTF	11.2858
CBM-W1	CBM-W1	19.9785	Confirmed LTF	19.9785
TVA	TVA	1.7934	Confirmed LTF	1.7934
O-066	O-066	35.7840	Confirmed LTF	35.7840
CBM-S2	CBM-S2	5.5083	Confirmed LTF	5.5083
CBM-S1	CBM-S1	11.2038	Confirmed LTF	11.2038
G-007	G-007	5.1574	Confirmed LTF	5.1574
MEC	MEC	2.3342	Confirmed LTF	2.3342

13.5.2 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
99743227	200708	26OXBOW	PENELEC	208009	LACK	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	128.68	133.18	DC	97.95

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

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	8.3004	Adder	18.42
957682	AF2-062 E	5.5336	Adder	12.28
957941	AF2-088 C	0.2506	Adder	0.56
957942	AF2-088 E	0.1670	Adder	0.37
959061	AF2-197 C O2	8.5126	Adder	18.9
959062	AF2-197 E O2	28.3440	50/50	28.3440
959471	AF2-238 C	2.0414	Adder	4.53
959472	AF2-238 E	1.3609	Adder	3.02
959481	AF2-239 C	2.3363	Adder	5.19
959482	AF2-239 E	1.8733	Adder	4.16
959491	AF2-240 C	1.9092	Adder	4.24
959492	AF2-240 E	1.6263	Adder	3.61
959501	AF2-241 C	1.9976	Adder	4.43
959502	AF2-241 E	1.5380	Adder	3.41
959741	AF2-265 C	1.4630	Adder	3.25
959742	AF2-265 E	1.0887	Adder	2.42
960022	AF2-293 E	0.0864	Adder	0.19
960031	AF2-294 C	2.3602	Adder	5.24
960032	AF2-294 E	1.5735	Adder	3.49
960041	AF2-295 C	0.7754	Adder	1.72
960042	AF2-295 E	0.5169	Adder	1.15
960271	AF2-318 C	2.5257	Adder	5.61
960272	AF2-318 E	1.6838	Adder	3.74
961141	AF2-405	1.7678	Adder	3.92
961151	AF2-406	13.2582	Adder	29.43
961201	AF2-411 O2	44.1265	Adder	97.95
961211	AF2-412 O2	17.6550	Adder	39.19
961451	AF2-436	0.7745	50/50	0.7745
961461	AF2-437	1.0101	50/50	1.0101
WEC	WEC	0.4864	Confirmed LTF	0.4864
LGEE	LGEE	0.8472	Confirmed LTF	0.8472
CPL	CPL	0.5431	Confirmed LTF	0.5431
CBM-W2	CBM-W2	11.4250	Confirmed LTF	11.4250
CBM-W1	CBM-W1	20.2287	Confirmed LTF	20.2287
TVA	TVA	1.8158	Confirmed LTF	1.8158
O-066	O-066	36.2611	Confirmed LTF	36.2611
CBM-S2	CBM-S2	5.5777	Confirmed LTF	5.5777
CBM-S1	CBM-S1	11.3486	Confirmed LTF	11.3486
G-007	G-007	5.2260	Confirmed LTF	5.2260
MEC	MEC	2.3644	Confirmed LTF	2.3644

13.5.3 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
151335485	200663	26TWOMILE	PENELEC	235234	01POTTER	AP	1	PN-P2-3-PN-115-84D1	breaker	245.0	25.23	129.81	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961202	AF2-411 BAT	256.2240	50/50	256.2240
WEC	WEC	0.0145	Confirmed LTF	0.0145
LGEE	LGEE	0.0257	Confirmed LTF	0.0257
CPL	CPL	0.0225	Confirmed LTF	0.0225
CBM-W2	CBM-W2	0.3604	Confirmed LTF	0.3604
NY	NY	0.0487	Confirmed LTF	0.0487
CBM-W1	CBM-W1	0.6005	Confirmed LTF	0.6005
TVA	TVA	0.0588	Confirmed LTF	0.0588
O-066	O-066	0.3763	Confirmed LTF	0.3763
CBM-S2	CBM-S2	0.2139	Confirmed LTF	0.2139
CBM-S1	CBM-S1	0.3664	Confirmed LTF	0.3664
G-007	G-007	0.0530	Confirmed LTF	0.0530
MEC	MEC	0.0715	Confirmed LTF	0.0715

13.5.4 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
152448761	200663	26TWO MILE	PENELEC	200944	26PIERCEBRK	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	21.96	126.54	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5621	Adder	1.84
203261	26BLOSSBCT	1.7784	50/50	1.7784
203349	26Z1-069 C	2.0653	50/50	2.0653
916202	Z1-069 E	51.0447	50/50	51.0447
922932	AB1-082 OP (Suspended)	18.8224	50/50	18.8224
923442	AB1-160 C	0.5901	50/50	0.5901
923443	AB1-160 E	14.5842	50/50	14.5842
940861	AE2-074 C	14.2918	50/50	14.2918
940862	AE2-074 E	18.8130	50/50	18.8130
945331	AF1-198	1.3566	50/50	1.3566
961201	AF2-411 O2	256.2240	50/50	256.2240
NEWTON	NEWTON	0.0484	Confirmed LTF	0.0484
FARMERCITY	FARMERCITY	0.0025	Confirmed LTF	0.0025
G-007A	G-007A	0.1223	Confirmed LTF	0.1223
VFT	VFT	0.3547	Confirmed LTF	0.3547
CALDERWOOD	CALDERWOOD	0.0204	Confirmed LTF	0.0204
PRAIRIE	PRAIRIE	0.1162	Confirmed LTF	0.1162
CHEOAH	CHEOAH	0.0205	Confirmed LTF	0.0205
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
TILTON	TILTON	0.0290	Confirmed LTF	0.0290
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0251	Confirmed LTF	0.0251
BLUEG	BLUEG	0.0781	Confirmed LTF	0.0781
TRIMBLE	TRIMBLE	0.0250	Confirmed LTF	0.0250
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.5 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
111749212	200669	26GOLD	PENELEC	203348	26Z1-069 TAP	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	21.34	171.78	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
922932	AB1-082 OP (Suspended)	0.9159	Adder	1.08
940861	AE2-074 C	0.6955	Adder	0.82
940862	AE2-074 E	0.9155	Adder	1.08
961202	AF2-411 BAT	256.2240	50/50	256.2240
WEC	WEC	0.0145	Confirmed LTF	0.0145
LGEE	LGEE	0.0257	Confirmed LTF	0.0257
CPL	CPL	0.0225	Confirmed LTF	0.0225
CBM-W2	CBM-W2	0.3604	Confirmed LTF	0.3604
NY	NY	0.0487	Confirmed LTF	0.0487
CBM-W1	CBM-W1	0.6005	Confirmed LTF	0.6005
TVA	TVA	0.0588	Confirmed LTF	0.0588
O-066	O-066	0.3763	Confirmed LTF	0.3763
CBM-S2	CBM-S2	0.2139	Confirmed LTF	0.2139
CBM-S1	CBM-S1	0.3664	Confirmed LTF	0.3664
G-007	G-007	0.0530	Confirmed LTF	0.0530
MEC	MEC	0.0715	Confirmed LTF	0.0715

13.5.6 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
152448836	200669	26GOLD	PENELEC	200923	26TENGASVM	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	14.12	118.7	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5621	Adder	1.84
203261	26BLOSSBCT	1.7784	50/50	1.7784
203349	26Z1-069 C	2.0653	50/50	2.0653
916202	Z1-069 E	51.0447	50/50	51.0447
923442	AB1-160 C	0.5901	50/50	0.5901
923443	AB1-160 E	14.5842	50/50	14.5842
945331	AF1-198	1.3566	50/50	1.3566
961201	AF2-411 O2	256.2240	50/50	256.2240
NEWTON	NEWTON	0.0484	Confirmed LTF	0.0484
FARMERCITY	FARMERCITY	0.0025	Confirmed LTF	0.0025
G-007A	G-007A	0.1223	Confirmed LTF	0.1223
VFT	VFT	0.3547	Confirmed LTF	0.3547
CALDERWOOD	CALDERWOOD	0.0204	Confirmed LTF	0.0204
PRAIRIE	PRAIRIE	0.1162	Confirmed LTF	0.1162
CHEOAH	CHEOAH	0.0205	Confirmed LTF	0.0205
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
TILTON	TILTON	0.0290	Confirmed LTF	0.0290
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0251	Confirmed LTF	0.0251
BLUEG	BLUEG	0.0781	Confirmed LTF	0.0781
TRIMBLE	TRIMBLE	0.0250	Confirmed LTF	0.0250
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.7 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
111749174	200670	26SABINSVI	PENELEC	200671	26NILES VA	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	30.02	179.0	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
916202	Z1-069 E	4.8026	Adder	5.65
922932	AB1-082 OP (Suspended)	0.9144	Adder	1.08
923443	AB1-160 E	1.3722	Adder	1.61
940861	AE2-074 C	0.6943	Adder	0.82
940862	AE2-074 E	0.9140	Adder	1.08
961202	AF2-411 BAT	256.2510	50/50	256.2510
WEC	WEC	0.0117	Confirmed LTF	0.0117
LGEE	LGEE	0.0205	Confirmed LTF	0.0205
CPL	CPL	0.0165	Confirmed LTF	0.0165
CBM-W2	CBM-W2	0.2866	Confirmed LTF	0.2866
NY	NY	0.0536	Confirmed LTF	0.0536
CBM-W1	CBM-W1	0.4879	Confirmed LTF	0.4879
TVA	TVA	0.0462	Confirmed LTF	0.0462
O-066	O-066	0.4368	Confirmed LTF	0.4368
CBM-S2	CBM-S2	0.1618	Confirmed LTF	0.1618
CBM-S1	CBM-S1	0.2897	Confirmed LTF	0.2897
G-007	G-007	0.0624	Confirmed LTF	0.0624
MEC	MEC	0.0572	Confirmed LTF	0.0572

13.5.8 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
152448780	200670	26SABINSVI	PENELEC	203348	26Z1-069 TAP	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	-25.01	123.97	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5635	Adder	1.84
203261	26BLOSSBCT	1.7787	50/50	1.7787
945331	AF1-198	1.3568	50/50	1.3568
961201	AF2-411 O2	256.2510	50/50	256.2510
NEWTON	NEWTON	0.0387	Confirmed LTF	0.0387
FARMERCITY	FARMERCITY	0.0020	Confirmed LTF	0.0020
G-007A	G-007A	0.1439	Confirmed LTF	0.1439
VFT	VFT	0.4128	Confirmed LTF	0.4128
CALDERWOOD	CALDERWOOD	0.0159	Confirmed LTF	0.0159
PRAIRIE	PRAIRIE	0.0930	Confirmed LTF	0.0930
CHEOAH	CHEOAH	0.0160	Confirmed LTF	0.0160
EDWARDS	EDWARDS	0.0129	Confirmed LTF	0.0129
TILTON	TILTON	0.0233	Confirmed LTF	0.0233
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0625	Confirmed LTF	0.0625
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
CATAWBA	CATAWBA	0.0098	Confirmed LTF	0.0098

13.5.9 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
152448629	200671	26NILES VA	PENELEC	203345	26WELLSBORO+	PENELEC	ZL	PN-P2-3-PN-115-84D1	breaker	185.0	21.47	159.99	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
916202	Z1-069 E	4.8026	Adder	5.65
922932	AB1-082 OP (Suspended)	0.9144	Adder	1.08
923443	AB1-160 E	1.3722	Adder	1.61
940861	AE2-074 C	0.6943	Adder	0.82
940862	AE2-074 E	0.9140	Adder	1.08
961202	AF2-411 BAT	256.2510	50/50	256.2510
WEC	WEC	0.0117	Confirmed LTF	0.0117
LGEE	LGEE	0.0205	Confirmed LTF	0.0205
CPL	CPL	0.0165	Confirmed LTF	0.0165
CBM-W2	CBM-W2	0.2866	Confirmed LTF	0.2866
NY	NY	0.0536	Confirmed LTF	0.0536
CBM-W1	CBM-W1	0.4879	Confirmed LTF	0.4879
TVA	TVA	0.0462	Confirmed LTF	0.0462
O-066	O-066	0.4368	Confirmed LTF	0.4368
CBM-S2	CBM-S2	0.1618	Confirmed LTF	0.1618
CBM-S1	CBM-S1	0.2897	Confirmed LTF	0.2897
G-007	G-007	0.0624	Confirmed LTF	0.0624
MEC	MEC	0.0572	Confirmed LTF	0.0572

13.5.10 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
152448759	200671	26NILES VA	PENELEC	200670	26SABINSVI	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	-20.59	128.39	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5635	Adder	1.84
203261	26BLOSSBCT	1.7787	50/50	1.7787
945331	AF1-198	1.3568	50/50	1.3568
961201	AF2-411 O2	256.2510	50/50	256.2510
NEWTON	NEWTON	0.0387	Confirmed LTF	0.0387
FARMERCITY	FARMERCITY	0.0020	Confirmed LTF	0.0020
G-007A	G-007A	0.1439	Confirmed LTF	0.1439
VFT	VFT	0.4128	Confirmed LTF	0.4128
CALDERWOOD	CALDERWOOD	0.0159	Confirmed LTF	0.0159
PRAIRIE	PRAIRIE	0.0930	Confirmed LTF	0.0930
CHEOAH	CHEOAH	0.0160	Confirmed LTF	0.0160
EDWARDS	EDWARDS	0.0129	Confirmed LTF	0.0129
TILTON	TILTON	0.0233	Confirmed LTF	0.0233
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0625	Confirmed LTF	0.0625
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
CATAWBA	CATAWBA	0.0098	Confirmed LTF	0.0098

13.5.11 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
152448640	200672	26MANSFIEL	PENELEC	200929	26MAINESBURG	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	191.0	0.0	157.07	DC	300.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961202	AF2-411 BAT	300.0000	50/50	300.0000

13.5.12 Index 12

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
152448715	200672	26MANSFIEL	PENELEC	203345	26WELLSBORO+	PENELEC	1	PN-P2-3- PN-115- 84D1	breaker	185.0	-2.82	135.69	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5635	Adder	1.84
203261	26BLOSSBCT	1.7787	50/50	1.7787
945331	AF1-198	1.3568	50/50	1.3568
961201	AF2-411 O2	256.2510	50/50	256.2510
NEWTON	NEWTON	0.0387	Confirmed LTF	0.0387
FARMERCITY	FARMERCITY	0.0020	Confirmed LTF	0.0020
G-007A	G-007A	0.1439	Confirmed LTF	0.1439
VFT	VFT	0.4128	Confirmed LTF	0.4128
CALDERWOOD	CALDERWOOD	0.0159	Confirmed LTF	0.0159
PRAIRIE	PRAIRIE	0.0930	Confirmed LTF	0.0930
CHEOAH	CHEOAH	0.0160	Confirmed LTF	0.0160
EDWARDS	EDWARDS	0.0129	Confirmed LTF	0.0129
TILTON	TILTON	0.0233	Confirmed LTF	0.0233
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0625	Confirmed LTF	0.0625
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
CATAWBA	CATAWBA	0.0098	Confirmed LTF	0.0098

13.5.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
152448842	200673	26SOUTH TR	PENELEC	200885	26EVERT DR	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	242.0	-6.62	117.34	DC	299.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961202	AF2-411 BAT	299.9700	50/50	299.9700
WEC	WEC	0.0031	Confirmed LTF	0.0031
LGEE	LGEE	0.0057	Confirmed LTF	0.0057
CPLE	CPLE	0.0066	Confirmed LTF	0.0066
G-007A	G-007A	0.0240	Confirmed LTF	0.0240
VFT	VFT	0.0645	Confirmed LTF	0.0645
CBM-W2	CBM-W2	0.0819	Confirmed LTF	0.0819
CBM-W1	CBM-W1	0.1251	Confirmed LTF	0.1251
TVA	TVA	0.0140	Confirmed LTF	0.0140
CBM-S2	CBM-S2	0.0578	Confirmed LTF	0.0578
CBM-S1	CBM-S1	0.0852	Confirmed LTF	0.0852
MEC	MEC	0.0159	Confirmed LTF	0.0159

13.5.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
152448863	200673	26SOUTH TR	PENELEC	200817	26TENNGAS	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	344.0	35.0	114.92	DC	274.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200887	26ARMNA MT	3.1619	50/50	3.1619
200898	26AA1-106	3.7726	50/50	3.7726
203351	26GROZ1-110	0.6508	50/50	0.6508
203352	26CANZ2-011	0.6508	50/50	0.6508
203999	P-047 E	73.7815	50/50	73.7815
934801	AD1-108	0.0491	50/50	0.0491
934811	AD1-109	0.0360	50/50	0.0360
945331	AF1-198	0.2029	Adder	0.24
959471	AF2-238 C	9.2267	50/50	9.2267
959472	AF2-238 E	6.1511	50/50	6.1511
959741	AF2-265 C	6.6125	50/50	6.6125
959742	AF2-265 E	4.9209	50/50	4.9209
961201	AF2-411 O2	274.9530	50/50	274.9530
WEC	WEC	0.0003	Confirmed LTF	0.0003
CALDERWOOD	CALDERWOOD	0.0005	Confirmed LTF	0.0005
NY	NY	0.0719	Confirmed LTF	0.0719
CBM-W1	CBM-W1	0.0125	Confirmed LTF	0.0125
O-066	O-066	0.3830	Confirmed LTF	0.3830
CHEOAH	CHEOAH	0.0010	Confirmed LTF	0.0010
G-007	G-007	0.0551	Confirmed LTF	0.0551
CATAWBA	CATAWBA	0.0010	Confirmed LTF	0.0010

13.5.15 Index 15

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
152448886	200817	26TENNGAS	PENELEC	200674	26TOWANDA	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	344.0	32.41	112.34	DC	274.95

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200887	26ARMNA MT	3.1619	50/50	3.1619
200898	26AA1-106	3.7726	50/50	3.7726
203351	26GROZ1-110	0.6508	50/50	0.6508
203352	26CANZ2-011	0.6508	50/50	0.6508
203999	P-047 E	73.7815	50/50	73.7815
934801	AD1-108	0.0491	50/50	0.0491
934811	AD1-109	0.0360	50/50	0.0360
945331	AF1-198	0.2029	Adder	0.24
959471	AF2-238 C	9.2267	50/50	9.2267
959472	AF2-238 E	6.1511	50/50	6.1511
959741	AF2-265 C	6.6125	50/50	6.6125
959742	AF2-265 E	4.9209	50/50	4.9209
961201	AF2-411 O2	274.9530	50/50	274.9530
WEC	WEC	0.0003	Confirmed LTF	0.0003
CALDERWOOD	CALDERWOOD	0.0005	Confirmed LTF	0.0005
NY	NY	0.0719	Confirmed LTF	0.0719
CBM-W1	CBM-W1	0.0125	Confirmed LTF	0.0125
O-066	O-066	0.3830	Confirmed LTF	0.3830
CHEOAH	CHEOAH	0.0010	Confirmed LTF	0.0010
G-007	G-007	0.0551	Confirmed LTF	0.0551
CATAWBA	CATAWBA	0.0010	Confirmed LTF	0.0010

13.5.16 Index 16

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
101443118	200885	26EVERT DR	PENELEC	200673	26SOUTH TR	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	242.0	41.5	165.46	DC	299.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200887	26ARMNA MT	3.4495	50/50	3.4495
203999	P-047 E	80.4919	50/50	80.4919
961201	AF2-411 O2	299.9700	50/50	299.9700
NEWTON	NEWTON	0.0107	Confirmed LTF	0.0107
FARMERCITY	FARMERCITY	0.0006	Confirmed LTF	0.0006
CALDERWOOD	CALDERWOOD	0.0050	Confirmed LTF	0.0050
NY	NY	0.0055	Confirmed LTF	0.0055
PRAIRIE	PRAIRIE	0.0258	Confirmed LTF	0.0258
O-066	O-066	0.0672	Confirmed LTF	0.0672
CHEOAH	CHEOAH	0.0050	Confirmed LTF	0.0050
EDWARDS	EDWARDS	0.0035	Confirmed LTF	0.0035
TILTON	TILTON	0.0063	Confirmed LTF	0.0063
G-007	G-007	0.0104	Confirmed LTF	0.0104
GIBSON	GIBSON	0.0055	Confirmed LTF	0.0055
BLUEG	BLUEG	0.0174	Confirmed LTF	0.0174
TRIMBLE	TRIMBLE	0.0056	Confirmed LTF	0.0056
CATAWBA	CATAWBA	0.0035	Confirmed LTF	0.0035

13.5.17 Index 17

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
152448798	200885	26EVERT DR	PENELEC	200929	26MAINESBURG	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	245.0	0.0	122.45	DC	300.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961202	AF2-411 BAT	300.0000	50/50	300.0000

13.5.18 Index 18

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
151335519	200923	26TENGASVM	PENELEC	235234	01POTTER	AP	1	PN-P2-3-PN-115-84D1	breaker	245.0	12.36	116.94	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5621	Adder	1.84
203261	26BLOSSBCT	1.7784	50/50	1.7784
203349	26Z1-069 C	2.0653	50/50	2.0653
916202	Z1-069 E	51.0447	50/50	51.0447
923442	AB1-160 C	0.5901	50/50	0.5901
923443	AB1-160 E	14.5842	50/50	14.5842
945331	AF1-198	1.3566	50/50	1.3566
961201	AF2-411 O2	256.2240	50/50	256.2240
NEWTON	NEWTON	0.0484	Confirmed LTF	0.0484
FARMERCITY	FARMERCITY	0.0025	Confirmed LTF	0.0025
G-007A	G-007A	0.1223	Confirmed LTF	0.1223
VFT	VFT	0.3547	Confirmed LTF	0.3547
CALDERWOOD	CALDERWOOD	0.0204	Confirmed LTF	0.0204
PRAIRIE	PRAIRIE	0.1162	Confirmed LTF	0.1162
CHEOAH	CHEOAH	0.0205	Confirmed LTF	0.0205
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
TILTON	TILTON	0.0290	Confirmed LTF	0.0290
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0251	Confirmed LTF	0.0251
BLUEG	BLUEG	0.0781	Confirmed LTF	0.0781
TRIMBLE	TRIMBLE	0.0250	Confirmed LTF	0.0250
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.19 Index 19

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
152448797	200923	26TENGASVM	PENELEC	200669	26GOLD	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	16.94	122.56	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
922932	AB1-082 OP (Suspended)	0.9159	Adder	1.08
940861	AE2-074 C	0.6955	Adder	0.82
940862	AE2-074 E	0.9155	Adder	1.08
961202	AF2-411 BAT	256.2240	50/50	256.2240
WEC	WEC	0.0145	Confirmed LTF	0.0145
LGEE	LGEE	0.0257	Confirmed LTF	0.0257
CPL	CPL	0.0225	Confirmed LTF	0.0225
CBM-W2	CBM-W2	0.3604	Confirmed LTF	0.3604
NY	NY	0.0487	Confirmed LTF	0.0487
CBM-W1	CBM-W1	0.6005	Confirmed LTF	0.6005
TVA	TVA	0.0588	Confirmed LTF	0.0588
O-066	O-066	0.3763	Confirmed LTF	0.3763
CBM-S2	CBM-S2	0.2139	Confirmed LTF	0.2139
CBM-S1	CBM-S1	0.3664	Confirmed LTF	0.3664
G-007	G-007	0.0530	Confirmed LTF	0.0530
MEC	MEC	0.0715	Confirmed LTF	0.0715

13.5.20 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
152448637	200929	26MAINESBURG	PENELEC	200672	26MANSFIEL	PENELEC	1	PN-P2-3- PN-115-84D1	breaker	191.0	0.0	157.07	DC	300.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961201	AF2-411 O2	300.0000	50/50	300.0000

13.5.21 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
152448803	200929	26MAINESBURG	PENELEC	200885	26EVERT DR	PENELEC	1	PN-P2-3-PN-115-84A1	breaker	245.0	0.0	122.45	DC	300.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961201	AF2-411 O2	300.0000	50/50	300.0000

13.5.22 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
152448716	200944	26PIERCEBRK	PENELEC	200663	26TWO MILE	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	30.29	134.87	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961202	AF2-411 BAT	256.2240	50/50	256.2240
WEC	WEC	0.0145	Confirmed LTF	0.0145
LGEE	LGEE	0.0257	Confirmed LTF	0.0257
CPL	CPL	0.0225	Confirmed LTF	0.0225
CBM-W2	CBM-W2	0.3604	Confirmed LTF	0.3604
NY	NY	0.0487	Confirmed LTF	0.0487
CBM-W1	CBM-W1	0.6005	Confirmed LTF	0.6005
TVA	TVA	0.0588	Confirmed LTF	0.0588
O-066	O-066	0.3763	Confirmed LTF	0.3763
CBM-S2	CBM-S2	0.2139	Confirmed LTF	0.2139
CBM-S1	CBM-S1	0.3664	Confirmed LTF	0.3664
G-007	G-007	0.0530	Confirmed LTF	0.0530
MEC	MEC	0.0715	Confirmed LTF	0.0715

13.5.23 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
152448647	203345	26WELLSBORO+	PENELEC	200672	26MANSFIEL	PENELEC	1	PN-P2-3- PN-115-84D1	breaker	185.0	11.58	150.1	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
916202	Z1-069 E	4.8026	Adder	5.65
922932	AB1-082 OP (Suspended)	0.9144	Adder	1.08
923443	AB1-160 E	1.3722	Adder	1.61
940861	AE2-074 C	0.6943	Adder	0.82
940862	AE2-074 E	0.9140	Adder	1.08
961202	AF2-411 BAT	256.2510	50/50	256.2510
WEC	WEC	0.0117	Confirmed LTF	0.0117
LGEE	LGEE	0.0205	Confirmed LTF	0.0205
CPLE	CPLE	0.0165	Confirmed LTF	0.0165
CBM-W2	CBM-W2	0.2866	Confirmed LTF	0.2866
NY	NY	0.0536	Confirmed LTF	0.0536
CBM-W1	CBM-W1	0.4879	Confirmed LTF	0.4879
TVA	TVA	0.0462	Confirmed LTF	0.0462
O-066	O-066	0.4368	Confirmed LTF	0.4368
CBM-S2	CBM-S2	0.1618	Confirmed LTF	0.1618
CBM-S1	CBM-S1	0.2897	Confirmed LTF	0.2897
G-007	G-007	0.0624	Confirmed LTF	0.0624
MEC	MEC	0.0572	Confirmed LTF	0.0572

13.5.24 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
152448773	203345	26WELLSBORO+	PENELEC	200671	26NILES VA	PENELEC	ZL	PN-P2-3-PN-115-84D1	breaker	185.0	-12.71	125.8	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5635	Adder	1.84
203261	26BLOSSBCT	1.7787	50/50	1.7787
945331	AF1-198	1.3568	50/50	1.3568
961201	AF2-411 O2	256.2510	50/50	256.2510
NEWTON	NEWTON	0.0387	Confirmed LTF	0.0387
FARMERCITY	FARMERCITY	0.0020	Confirmed LTF	0.0020
G-007A	G-007A	0.1439	Confirmed LTF	0.1439
VFT	VFT	0.4128	Confirmed LTF	0.4128
CALDERWOOD	CALDERWOOD	0.0159	Confirmed LTF	0.0159
PRAIRIE	PRAIRIE	0.0930	Confirmed LTF	0.0930
CHEOAH	CHEOAH	0.0160	Confirmed LTF	0.0160
EDWARDS	EDWARDS	0.0129	Confirmed LTF	0.0129
TILTON	TILTON	0.0233	Confirmed LTF	0.0233
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0202	Confirmed LTF	0.0202
BLUEG	BLUEG	0.0625	Confirmed LTF	0.0625
TRIMBLE	TRIMBLE	0.0200	Confirmed LTF	0.0200
CATAWBA	CATAWBA	0.0098	Confirmed LTF	0.0098

13.5.25 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
101443096	203348	26Z1-069 TAP	PENELEC	200670	26SABINSVI	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	34.44	183.42	DC	256.25

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
916202	Z1-069 E	4.8026	Adder	5.65
922932	AB1-082 OP (Suspended)	0.9144	Adder	1.08
923443	AB1-160 E	1.3722	Adder	1.61
940861	AE2-074 C	0.6943	Adder	0.82
940862	AE2-074 E	0.9140	Adder	1.08
961202	AF2-411 BAT	256.2510	50/50	256.2510
WEC	WEC	0.0117	Confirmed LTF	0.0117
LGEE	LGEE	0.0205	Confirmed LTF	0.0205
CPL	CPL	0.0165	Confirmed LTF	0.0165
CBM-W2	CBM-W2	0.2866	Confirmed LTF	0.2866
NY	NY	0.0536	Confirmed LTF	0.0536
CBM-W1	CBM-W1	0.4879	Confirmed LTF	0.4879
TVA	TVA	0.0462	Confirmed LTF	0.0462
O-066	O-066	0.4368	Confirmed LTF	0.4368
CBM-S2	CBM-S2	0.1618	Confirmed LTF	0.1618
CBM-S1	CBM-S1	0.2897	Confirmed LTF	0.2897
G-007	G-007	0.0624	Confirmed LTF	0.0624
MEC	MEC	0.0572	Confirmed LTF	0.0572

13.5.26 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
111749211	203348	26Z1-069 TAP	PENELEC	200669	26GOLD	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	172.0	22.9	171.86	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5621	Adder	1.84
203261	26BLOSSBCT	1.7784	50/50	1.7784
203349	26Z1-069 C	2.0653	50/50	2.0653
916202	Z1-069 E	51.0447	50/50	51.0447
923442	AB1-160 C	0.5901	50/50	0.5901
923443	AB1-160 E	14.5842	50/50	14.5842
945331	AF1-198	1.3566	50/50	1.3566
961201	AF2-411 O2	256.2240	50/50	256.2240
NEWTON	NEWTON	0.0484	Confirmed LTF	0.0484
FARMERCITY	FARMERCITY	0.0025	Confirmed LTF	0.0025
G-007A	G-007A	0.1223	Confirmed LTF	0.1223
VFT	VFT	0.3547	Confirmed LTF	0.3547
CALDERWOOD	CALDERWOOD	0.0204	Confirmed LTF	0.0204
PRAIRIE	PRAIRIE	0.1162	Confirmed LTF	0.1162
CHEOAH	CHEOAH	0.0205	Confirmed LTF	0.0205
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
TILTON	TILTON	0.0290	Confirmed LTF	0.0290
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0251	Confirmed LTF	0.0251
BLUEG	BLUEG	0.0781	Confirmed LTF	0.0781
TRIMBLE	TRIMBLE	0.0250	Confirmed LTF	0.0250
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.27 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
151335484	235234	01POTTER	AP	200663	26TWO MILE	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	27.02	131.61	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200898	26AA1-106	1.5621	Adder	1.84
203261	26BLOSSBCT	1.7784	50/50	1.7784
203349	26Z1-069 C	2.0653	50/50	2.0653
916202	Z1-069 E	51.0447	50/50	51.0447
922932	AB1-082 OP (Suspended)	18.8224	50/50	18.8224
923442	AB1-160 C	0.5901	50/50	0.5901
923443	AB1-160 E	14.5842	50/50	14.5842
940861	AE2-074 C	14.2918	50/50	14.2918
940862	AE2-074 E	18.8130	50/50	18.8130
945331	AF1-198	1.3566	50/50	1.3566
961201	AF2-411 O2	256.2240	50/50	256.2240
NEWTON	NEWTON	0.0484	Confirmed LTF	0.0484
FARMERCITY	FARMERCITY	0.0025	Confirmed LTF	0.0025
G-007A	G-007A	0.1223	Confirmed LTF	0.1223
VFT	VFT	0.3547	Confirmed LTF	0.3547
CALDERWOOD	CALDERWOOD	0.0204	Confirmed LTF	0.0204
PRAIRIE	PRAIRIE	0.1162	Confirmed LTF	0.1162
CHEOAH	CHEOAH	0.0205	Confirmed LTF	0.0205
EDWARDS	EDWARDS	0.0161	Confirmed LTF	0.0161
TILTON	TILTON	0.0290	Confirmed LTF	0.0290
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.0251	Confirmed LTF	0.0251
BLUEG	BLUEG	0.0781	Confirmed LTF	0.0781
TRIMBLE	TRIMBLE	0.0250	Confirmed LTF	0.0250
CATAWBA	CATAWBA	0.0129	Confirmed LTF	0.0129

13.5.28 Index 28

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
151335496	235234	01POTTER	AP	200923	26TENGASVM	PENELEC	1	PN-P2-3-PN-115-84D1	breaker	245.0	18.7	124.31	DC	256.22

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
922932	AB1-082 OP (Suspended)	0.9159	Adder	1.08
940861	AE2-074 C	0.6955	Adder	0.82
940862	AE2-074 E	0.9155	Adder	1.08
961202	AF2-411 BAT	256.2240	50/50	256.2240
WEC	WEC	0.0145	Confirmed LTF	0.0145
LGEE	LGEE	0.0257	Confirmed LTF	0.0257
CPL	CPL	0.0225	Confirmed LTF	0.0225
CBM-W2	CBM-W2	0.3604	Confirmed LTF	0.3604
NY	NY	0.0487	Confirmed LTF	0.0487
CBM-W1	CBM-W1	0.6005	Confirmed LTF	0.6005
TVA	TVA	0.0588	Confirmed LTF	0.0588
O-066	O-066	0.3763	Confirmed LTF	0.3763
CBM-S2	CBM-S2	0.2139	Confirmed LTF	0.2139
CBM-S1	CBM-S1	0.3664	Confirmed LTF	0.3664
G-007	G-007	0.0530	Confirmed LTF	0.0530
MEC	MEC	0.0715	Confirmed LTF	0.0715

13.5.29 Index 29

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98949465	239036	02PERRY	ATSI	238684	02EASTLK	ATSI	1	ATSI-P7-1-CEI-345-016	tower	1667.0	130.75	131.65	DC	32.55

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944262	AF1-094 E	2.4032	50/50	2.4032
944281	AF1-096 C	2.9040	50/50	2.9040
944282	AF1-096 E	1.9360	50/50	1.9360
944301	AF1-098 C	15.0706	50/50	15.0706
944302	AF1-098 E	10.0470	50/50	10.0470
944311	AF1-099 C	6.5650	Adder	7.72
944312	AF1-099 E	4.3767	Adder	5.15
944321	AF1-100 C	13.9549	Adder	16.42
944322	AF1-100 E	9.3032	Adder	10.94
944381	AF1-103 O1	3.9839	Adder	4.69
944391	AF1-104 O1	7.4304	50/50	7.4304
944411	AF1-106 O1	1.7660	Adder	2.08
944691	AF1-134 C O1	1.0126	Adder	1.19
944692	AF1-134 E O1	0.6750	Adder	0.79
944771	AF1-142 C	10.5041	Adder	12.36
944772	AF1-142 E	7.0027	Adder	8.24
944881	AF1-153 C O1	1.2907	Adder	1.52
944882	AF1-153 E O1	0.8605	Adder	1.01
944901	AF1-155 C	1.2910	Adder	1.52
944902	AF1-155 E	0.8607	Adder	1.01
945021	AF1-167 C	0.8270	Adder	0.97
945022	AF1-167 E	0.5523	Adder	0.65
945051	AF1-170 C	16.4447	50/50	16.4447
945052	AF1-170 E	10.9632	50/50	10.9632
945121	AF1-177	0.9960	Adder	1.17
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0921	Adder	0.11
945331	AF1-198	0.2238	Adder	0.26
945451	AF1-210 C	0.9001	Adder	1.06
945452	AF1-210 E	0.6001	Adder	0.71
945551	AF1-220 C	10.3912	Adder	12.22
945552	AF1-220 E	6.9313	Adder	8.15
945751	AF1-240 C O1	1.2558	Adder	1.48
945752	AF1-240 E O1	0.8372	Adder	0.98
946111	AF1-276 C	9.4229	Adder	11.09
946112	AF1-276 E	4.6412	Adder	5.46
946121	AF1-277 C	9.4229	Adder	11.09
946122	AF1-277 E	4.6412	Adder	5.46
946131	AF1-278 C	7.5102	Adder	8.84
946132	AF1-278 E	3.7354	Adder	4.39
946211	AF1-286 C O1	0.7152	Adder	0.84
946212	AF1-286 E O1	0.4856	Adder	0.57
946221	AF1-287 C	3.9836	50/50	3.9836
946222	AF1-287 E	2.6558	50/50	2.6558
946381	AF1-302 C	1.8954	Adder	2.23
946382	AF1-302 E	2.5272	Adder	2.97
946401	AF1-304 C	11.7132	Adder	13.78
946402	AF1-304 E	7.8088	Adder	9.19
946421	AF1-306 C	5.4891	Adder	6.46
946422	AF1-306 E	21.9565	Adder	25.83
946771	AF1-217 C O2	3.9836	50/50	3.9836

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946772	AF1-217 E O2	2.6558	50/50	2.6558
957161	AF2-010 C	13.6905	50/50	13.6905
957162	AF2-010 E	9.2262	50/50	9.2262
957451	AF2-039 C	0.3912	Adder	0.87
957452	AF2-039 E	0.2608	Adder	0.58
957571	AF2-051 C O2	9.8667	50/50	9.8667
957572	AF2-051 E O2	5.0828	50/50	5.0828
957581	AF2-052 C	2.4621	Adder	5.47
957582	AF2-052 E	1.1978	Adder	2.66
957681	AF2-062 C	8.6820	Adder	19.27
957682	AF2-062 E	5.7880	Adder	12.85
957941	AF2-088 C	0.1884	Adder	0.42
957942	AF2-088 E	0.1256	Adder	0.28
957951	AF2-089 C	0.7986	50/50	0.7986
957952	AF2-089 E	0.4114	50/50	0.4114
958031	AF2-097 C	1.0465	50/50	1.0465
958032	AF2-097 E	0.6977	50/50	0.6977
958361	AF2-130 C	0.9739	Adder	2.16
958362	AF2-130 E	0.6493	Adder	1.44
958731	AF2-164 C O2	11.5589	50/50	11.5589
958732	AF2-164 E O2	7.7059	50/50	7.7059
958741	AF2-165 C	1.1642	Adder	2.58
958742	AF2-165 E	0.7761	Adder	1.72
958751	AF2-166 C	0.9739	Adder	2.16
958752	AF2-166 E	0.6493	Adder	1.44
958791	AF2-170 C	4.4582	50/50	4.4582
958792	AF2-170 E	2.9722	50/50	2.9722
959441	AF2-235 C	1.4520	50/50	1.4520
959442	AF2-235 E	0.9680	50/50	0.9680
959461	AF2-237 C	1.8024	50/50	1.8024
959462	AF2-237 E	1.2016	50/50	1.2016
959471	AF2-238 C	0.5476	Adder	1.22
959472	AF2-238 E	0.3651	Adder	0.81
959491	AF2-240 C	0.5054	Adder	1.12
959492	AF2-240 E	0.4305	Adder	0.96
959501	AF2-241 C	0.5288	Adder	1.17
959502	AF2-241 E	0.4071	Adder	0.9
959521	AF2-243 C	0.8731	Adder	1.94
959522	AF2-243 E	0.5821	Adder	1.29
959741	AF2-265 C	0.3925	Adder	0.87
959742	AF2-265 E	0.2921	Adder	0.65
959822	AF2-273 E	0.1917	Adder	0.43
960041	AF2-295 C	0.6842	Adder	1.52
960042	AF2-295 E	0.4562	Adder	1.01
960051	AF2-296 C	0.5367	Adder	1.19
960052	AF2-296 E	0.3578	Adder	0.79
960321	AF2-323 C O2	7.9469	50/50	7.9469
960322	AF2-323 E O2	5.2980	50/50	5.2980
961141	AF2-405	0.4680	Adder	1.04
961151	AF2-406	3.5098	Adder	7.79
961201	AF2-411 O2	14.6651	Adder	32.55
961211	AF2-412 O2	6.3941	Adder	14.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
NEWTON	NEWTON	3.0150	Confirmed LTF	3.0150
FARMERCITY	FARMERCITY	0.1553	Confirmed LTF	0.1553
G-007A	G-007A	5.6989	Confirmed LTF	5.6989
VFT	VFT	15.6541	Confirmed LTF	15.6541
CALDERWOOD	CALDERWOOD	1.1108	Confirmed LTF	1.1108
PRAIRIE	PRAIRIE	7.0387	Confirmed LTF	7.0387
CHEOAH	CHEOAH	1.1116	Confirmed LTF	1.1116
EDWARDS	EDWARDS	1.0251	Confirmed LTF	1.0251
TILTON	TILTON	1.8232	Confirmed LTF	1.8232
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.5354	Confirmed LTF	1.5354
BLUEG	BLUEG	4.8157	Confirmed LTF	4.8157
TRIMBLE	TRIMBLE	1.5460	Confirmed LTF	1.5460
CATAWBA	CATAWBA	0.6395	Confirmed LTF	0.6395

13.5.30 Index 30

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99743880	200593	26GLADE	PENELEC	200811	26WARREN	PENELEC	1	Base Case	single	520.0	137.09	140.83	DC	19.81

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942351	AE2-248 C	0.8732	80/20	0.8732
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
961201	AF2-411 O2	19.8060	80/20	19.8060
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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.5962	Confirmed LTF	0.5962
BLUEG	BLUEG	1.8697	Confirmed LTF	1.8697
TRIMBLE	TRIMBLE	0.6005	Confirmed LTF	0.6005
CATAWBA	CATAWBA	0.2342	Confirmed LTF	0.2342

13.5.31 Index 31

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98948842	200599	26ERIE W	PENELEC	238547	02AT	ATSI	1	PN-P2-4-PN-230-14GT	breaker	1900.0	119.91	121.2	DC	54.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200830	26HNSMLK 3	3.4563	50/50	3.4563
200831	26HNSMLK 4	3.4563	50/50	3.4563
200832	26HNSMLK 5	3.4563	50/50	3.4563
200849	26LAKVU GN	0.4529	50/50	0.4529
200894	26K02	8.4123	Adder	9.9
200898	26AA1-106	2.8992	Adder	3.41
201201	26WRREN CT	3.6957	50/50	3.6957
201477	26Y2-055	10.8930	50/50	10.8930
203999	P-047 E	11.9860	Adder	14.1
235003	AC1-025 E	0.2666	Adder	0.31
236828	01GRAYMONT	0.7137	Adder	0.84
290086	Q-036 E	5.6838	Adder	6.69
915951	Y3-092 FTIR	594.9200	50/50	594.9200
916202	Z1-069 E	10.0540	Adder	11.83
919491	AA2-000	78.4581	Adder	92.3
920341	AA2-132 (Suspended)	2.8025	Adder	3.3
922932	AB1-082 OP (Suspended)	3.9065	Adder	4.6
923443	AB1-160 E	2.8726	Adder	3.38
930511	AB1-092	2.8808	Adder	3.39
935191	AD1-154	3.4605	Adder	4.07
936421	AD2-055	5.9310	Adder	6.98
936991	AD2-133 C	2.5577	Adder	3.01
936992	AD2-133 E	11.6986	Adder	13.76
938951	AE1-123	3.7161	Adder	4.37
939171	AE1-147 C	2.1424	Adder	2.52
939172	AE1-147 E	1.4283	Adder	1.68
939291	AE1-160 C	4.8230	50/50	4.8230
939292	AE1-160 E	2.7722	50/50	2.7722
940201	AE2-001 C	2.1417	Adder	2.52
940202	AE2-001 E	1.4278	Adder	1.68
940681	AE2-055 C (Suspended)	2.1306	Adder	2.51
940682	AE2-055 E (Suspended)	1.4204	Adder	1.67
940861	AE2-074 C	2.9662	Adder	3.49
940862	AE2-074 E	3.9046	Adder	4.59
941191	AE2-113 C	13.1530	Adder	15.47
941192	AE2-113 E	14.1615	Adder	16.66
941261	AE2-120 C	2.1413	Adder	2.52
941262	AE2-120 E	1.4275	Adder	1.68
941271	AE2-121 C	1.1398	Adder	1.34
941272	AE2-121 E	0.7610	Adder	0.9

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941321	AE2-126 C	2.3030	Adder	2.71
941322	AE2-126 E	1.5353	Adder	1.81
941331	AE2-129 C	1.8780	Adder	2.21
941332	AE2-129 E	1.2520	Adder	1.47
941351	AE2-131 C	1.8780	Adder	2.21
941352	AE2-131 E	1.2520	Adder	1.47
941421	AE2-139 C	8.3248	Adder	9.79
941422	AE2-139 E	5.5499	Adder	6.53
942351	AE2-248 C	1.7081	Adder	2.01
942352	AE2-248 E	1.1388	Adder	1.34
942491	AE2-262 C	9.0806	Adder	10.68
942492	AE2-262 E	6.1021	Adder	7.18
942501	AE2-263 C	8.5357	Adder	10.04
942502	AE2-263 E	5.6990	Adder	6.7
942811	AE2-299 C	16.0387	50/50	16.0387
942812	AE2-299 E	64.1549	50/50	64.1549
942961	AE2-316 C	7.6181	Adder	8.96
942962	AE2-316 E	10.8635	Adder	12.78
943151	AE2-344 C	36.0362	50/50	36.0362
943152	AE2-344 E	24.0242	50/50	24.0242
943351	AF1-006 C	6.8928	50/50	6.8928
943352	AF1-006 E	3.8772	50/50	3.8772
943751	AF1-043	17.7929	Adder	20.93
944001	AF1-068 C O1	2.2761	Adder	2.68
944002	AF1-068 E O1	1.2803	Adder	1.51
944181	AF1-086 C O1	2.9036	Adder	3.42
944182	AF1-086 E O1	12.6322	Adder	14.86
944261	AF1-094 C	5.6024	50/50	5.6024
944262	AF1-094 E	3.7350	50/50	3.7350
944281	AF1-096 C	4.5571	50/50	4.5571
944282	AF1-096 E	3.0381	50/50	3.0381
944301	AF1-098 C	23.4566	50/50	23.4566
944302	AF1-098 E	15.6378	50/50	15.6378
944311	AF1-099 C	13.7843	Adder	16.22
944312	AF1-099 E	9.1895	Adder	10.81
944321	AF1-100 C	27.5795	Adder	32.45
944322	AF1-100 E	18.3863	Adder	21.63
944381	AF1-103 O1	7.5176	50/50	7.5176
944391	AF1-104 O1	11.4266	50/50	11.4266
944411	AF1-106 O1	2.9752	Adder	3.5
944471	AF1-112 C	2.2788	Adder	2.68
944472	AF1-112 E	1.2818	Adder	1.51
944671	AF1-132 C O1	2.1330	Adder	2.51
944672	AF1-132 E O1	1.4220	Adder	1.67
944691	AF1-134 C O1	1.8657	Adder	2.19
944692	AF1-134 E O1	1.2438	Adder	1.46
944771	AF1-142 C	22.0548	Adder	25.95
944772	AF1-142 E	14.7032	Adder	17.3
944841	AF1-149 C	2.1413	Adder	2.52
944842	AF1-149 E	1.4275	Adder	1.68
944881	AF1-153 C O1	2.3452	Adder	2.76
944882	AF1-153 E O1	1.5635	Adder	1.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944901	AF1-155 C	2.3435	Adder	2.76
944902	AF1-155 E	1.5623	Adder	1.84
945021	AF1-167 C	1.3694	Adder	1.61
945022	AF1-167 E	0.9146	Adder	1.08
945051	AF1-170 C	25.3434	50/50	25.3434
945052	AF1-170 E	16.8956	50/50	16.8956
945121	AF1-177	1.8794	50/50	1.8794
945161	AF1-181	0.1471	Adder	0.17
945171	AF1-182	0.7357	Adder	0.87
945181	AF1-183	0.1792	Adder	0.21
945331	AF1-198	0.3825	Adder	0.45
945451	AF1-210 C	1.4950	Adder	1.76
945452	AF1-210 E	0.9967	Adder	1.17
945491	AF1-214 C	2.1413	Adder	2.52
945492	AF1-214 E	1.4275	Adder	1.68
945551	AF1-220 C	18.5733	Adder	21.85
945552	AF1-220 E	12.3890	Adder	14.58
945751	AF1-240 C O1	2.0763	Adder	2.44
945752	AF1-240 E O1	1.3842	Adder	1.63
946111	AF1-276 C	15.5200	Adder	18.26
946112	AF1-276 E	7.6442	Adder	8.99
946121	AF1-277 C	15.5200	Adder	18.26
946122	AF1-277 E	7.6442	Adder	8.99
946131	AF1-278 C	12.3697	Adder	14.55
946132	AF1-278 E	6.1524	Adder	7.24
946211	AF1-286 C O1	1.2049	Adder	1.42
946212	AF1-286 E O1	0.8182	Adder	0.96
946221	AF1-287 C	6.1589	50/50	6.1589
946222	AF1-287 E	4.1059	50/50	4.1059
946381	AF1-302 C	3.3267	Adder	3.91
946382	AF1-302 E	4.4356	Adder	5.22
946401	AF1-304 C	18.4294	Adder	21.68
946402	AF1-304 E	12.2862	Adder	14.45
946421	AF1-306 C	10.0002	Adder	11.76
946422	AF1-306 E	40.0008	Adder	47.06
946771	AF1-217 C O2	6.1589	50/50	6.1589
946772	AF1-217 E O2	4.1059	50/50	4.1059
957161	AF2-010 C	21.2856	50/50	21.2856
957162	AF2-010 E	14.3446	50/50	14.3446
957451	AF2-039 C	0.7479	Adder	1.66
957452	AF2-039 E	0.4986	Adder	1.11
957571	AF2-051 C O2	15.2995	50/50	15.2995
957572	AF2-051 E O2	7.8815	50/50	7.8815
957581	AF2-052 C	4.1393	Adder	9.19
957582	AF2-052 E	2.0137	Adder	4.47
957681	AF2-062 C	14.3135	Adder	31.77
957682	AF2-062 E	9.5423	Adder	21.18
957941	AF2-088 C	0.3601	Adder	0.8
957942	AF2-088 E	0.2401	Adder	0.53
957951	AF2-089 C	1.2532	50/50	1.2532
957952	AF2-089 E	0.6456	50/50	0.6456
958031	AF2-097 C	1.6155	50/50	1.6155

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
958032	AF2-097 E	1.0770	50/50	1.0770
958271	AF2-121 C	0.9954	Adder	2.21
958272	AF2-121 E	0.6636	Adder	1.47
958361	AF2-130 C	1.5562	Adder	3.45
958362	AF2-130 E	1.0375	Adder	2.3
958731	AF2-164 C O2	18.0638	50/50	18.0638
958732	AF2-164 E O2	12.0426	50/50	12.0426
958741	AF2-165 C	1.8376	Adder	4.08
958742	AF2-165 E	1.2250	Adder	2.72
958751	AF2-166 C	1.5562	Adder	3.45
958752	AF2-166 E	1.0375	Adder	2.3
958791	AF2-170 C	6.8560	50/50	6.8560
958792	AF2-170 E	4.5706	50/50	4.5706
959441	AF2-235 C	2.2786	50/50	2.2786
959442	AF2-235 E	1.5190	50/50	1.5190
959461	AF2-237 C	2.8012	50/50	2.8012
959462	AF2-237 E	1.8675	50/50	1.8675
959471	AF2-238 C	0.9336	Adder	2.07
959472	AF2-238 E	0.6224	Adder	1.38
959491	AF2-240 C	0.8515	Adder	1.89
959492	AF2-240 E	0.7253	Adder	1.61
959501	AF2-241 C	0.8909	Adder	1.98
959502	AF2-241 E	0.6859	Adder	1.52
959521	AF2-243 C	1.3782	Adder	3.06
959522	AF2-243 E	0.9188	Adder	2.04
959741	AF2-265 C	0.6691	Adder	1.49
959742	AF2-265 E	0.4979	Adder	1.11
959802	AF2-271 E	0.2138	Adder	0.47
959822	AF2-273 E	0.3180	Adder	0.71
960022	AF2-293 E	0.1104	Adder	0.25
960031	AF2-294 C	0.8957	Adder	1.99
960032	AF2-294 E	0.5971	Adder	1.33
960041	AF2-295 C	1.2420	Adder	2.76
960042	AF2-295 E	0.8280	Adder	1.84
960051	AF2-296 C	0.9888	Adder	2.19
960052	AF2-296 E	0.6592	Adder	1.46
960321	AF2-323 C O2	12.3198	50/50	12.3198
960322	AF2-323 E O2	8.2132	50/50	8.2132
961141	AF2-405	0.7884	Adder	1.75
961151	AF2-406	5.9131	Adder	13.13
961201	AF2-411 O2	24.6527	Adder	54.72
961211	AF2-412 O2	10.6893	Adder	23.73
NEWTON	NEWTON	3.5544	Confirmed LTF	3.5544
FARMERCITY	FARMERCITY	0.1826	Confirmed LTF	0.1826
G-007A	G-007A	9.6356	Confirmed LTF	9.6356
VFT	VFT	26.4257	Confirmed LTF	26.4257
CALDERWOOD	CALDERWOOD	1.2336	Confirmed LTF	1.2336
PRAIRIE	PRAIRIE	8.2449	Confirmed LTF	8.2449
CHEOAH	CHEOAH	1.2322	Confirmed LTF	1.2322
EDWARDS	EDWARDS	1.2211	Confirmed LTF	1.2211
TILTON	TILTON	2.1647	Confirmed LTF	2.1647
MADISON	MADISON	0.1089	Confirmed LTF	0.1089

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	1.8100	Confirmed LTF	1.8100
BLUEG	BLUEG	5.6559	Confirmed LTF	5.6559
TRIMBLE	TRIMBLE	1.8164	Confirmed LTF	1.8164
CATAWBA	CATAWBA	0.6643	Confirmed LTF	0.6643

13.5.32 Index 32

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101443121	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	179.31	200.16	DC	42.14

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	6.4416	80/20	6.4416
959061	AF2-197 C O2	8.0156	80/20	8.0156
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 O2	42.1350	80/20	42.1350
961211	AF2-412 O2	14.7641	80/20	14.7641
961451	AF2-436	0.0994	80/20	0.0994
WEC	WEC	0.1852	Confirmed LTF	0.1852
LGEE	LGEE	0.3240	Confirmed LTF	0.3240
CPL	CPL	0.2209	Confirmed LTF	0.2209
CBM-W2	CBM-W2	4.3898	Confirmed LTF	4.3898
CBM-W1	CBM-W1	7.6686	Confirmed LTF	7.6686
TVA	TVA	0.7014	Confirmed LTF	0.7014
CBM-S2	CBM-S2	2.2195	Confirmed LTF	2.2195
CBM-S1	CBM-S1	4.3793	Confirmed LTF	4.3793
MEC	MEC	0.9026	Confirmed LTF	0.9026

13.5.33 Index 33

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
99743892	200675	26E.TWANDA	PENELEC	200924	26CANYON	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	146.55	157.83	DC	75.42

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O2	18.5976	80/20	18.5976

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O2	75.4200	80/20	75.4200
961211	AF2-412 O2	29.9923	80/20	29.9923
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

13.5.34 Index 34

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98948999	200726	26SHAWVL 2	PENELEC	235248	01SHINGL	AP	1	AP-P1-2-WP-230-006	single	554.0	105.8	107.06	DC	15.53

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	3.9233	80/20	3.9233
200643	26SENECA#2	3.7054	80/20	3.7054
200644	26SENECA#3	0.3648	80/20	0.3648
200649	26PENNTech	1.1338	80/20	1.1338
200665	26SHAWVL 3	7.6184	80/20	7.6184
200666	26SHAWVL 4	7.6897	80/20	7.6897
200715	26SHAWVL 1	4.8473	80/20	4.8473
200722	26SHAWVL 2	5.0066	80/20	5.0066
200887	26ARMNA MT	0.1805	80/20	0.1805
200898	26AA1-106	1.5367	80/20	1.5367
200905	26Q36	0.1973	80/20	0.1973
200913	26SHAW-D	0.2085	80/20	0.2085
200949	26X1-109	7.1653	80/20	7.1653
201201	26WRREN CT	0.8161	80/20	0.8161
201477	26Y2-055	2.4090	80/20	2.4090
203261	26BLOSSBCT	0.2074	80/20	0.2074
203349	26Z1-069 C	0.1468	80/20	0.1468
203351	26GROZ1-110	0.2651	80/20	0.2651
203352	26CANZ2-011	0.2651	80/20	0.2651
919201	AA1-144 OP	9.3399	80/20	9.3399
919491	AA2-000	73.6170	80/20	73.6170
922932	AB1-082 OP (Suspended)	1.4752	80/20	1.4752
923442	AB1-160 C	0.0419	80/20	0.0419
930511	AB1-092	2.7030	80/20	2.7030
934801	AD1-108	0.0200	80/20	0.0200
934811	AD1-109	0.0147	80/20	0.0147
936421	AD2-055	5.5650	80/20	5.5650
936991	AD2-133 C	2.0594	80/20	2.0594
940681	AE2-055 C (Suspended)	-2.2334	Adder	-2.63
940861	AE2-074 C	1.1201	80/20	1.1201
941191	AE2-113 C	7.1996	80/20	7.1996
941321	AE2-126 C	2.1210	80/20	2.1210
941331	AE2-129 C	1.8428	80/20	1.8428
941351	AE2-131 C	1.8428	80/20	1.8428
941421	AE2-139 C	4.3531	80/20	4.3531
942491	AE2-262 C	8.1055	80/20	8.1055
942501	AE2-263 C	7.6192	80/20	7.6192
942961	AE2-316 C	4.8376	80/20	4.8376
943751	AF1-043	16.6950	80/20	16.6950
944181	AF1-086 C O1	1.8256	80/20	1.8256

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944301	AF1-098 C	2.1004	Adder	2.47
944311	AF1-099 C	12.3041	80/20	12.3041
944321	AF1-100 C	36.3705	80/20	36.3705
944381	AF1-103 O1	1.6600	80/20	1.6600
944411	AF1-106 O1	0.8592	Adder	1.01
944691	AF1-134 C O1	1.6465	80/20	1.6465
944771	AF1-142 C	19.6866	80/20	19.6866
944881	AF1-153 C O1	1.9547	80/20	1.9547
944901	AF1-155 C	1.9408	80/20	1.9408
945121	AF1-177	0.4150	80/20	0.4150
945161	AF1-181	0.2054	80/20	0.2054
945171	AF1-182	1.0428	80/20	1.0428
945181	AF1-183	0.2303	80/20	0.2303
945331	AF1-198	0.1582	80/20	0.1582
945551	AF1-220 C	14.5345	80/20	14.5345
946111	AF1-276 C	5.2582	80/20	5.2582
946121	AF1-277 C	5.2582	80/20	5.2582
946131	AF1-278 C	4.1908	80/20	4.1908
946211	AF1-286 C O1	0.3480	Adder	0.41
946381	AF1-302 C	2.1125	80/20	2.1125
946421	AF1-306 C	8.5802	80/20	8.5802
957451	AF2-039 C	1.6317	80/20	1.6317
957581	AF2-052 C	3.3888	80/20	3.3888
957681	AF2-062 C	9.0756	80/20	9.0756
957941	AF2-088 C	0.7856	80/20	0.7856
958271	AF2-121 C	1.8428	80/20	1.8428
959061	AF2-197 C O2	2.1894	80/20	2.1894
959471	AF2-238 C	0.6901	80/20	0.6901
959481	AF2-239 C	0.2528	Adder	0.56
959491	AF2-240 C	0.2459	Adder	0.55
959501	AF2-241 C	0.2573	Adder	0.57
959741	AF2-265 C	0.4946	80/20	0.4946
960041	AF2-295 C	1.9408	80/20	1.9408
960051	AF2-296 C	1.6465	80/20	1.6465
960271	AF2-318 C	0.2733	Adder	0.61
961141	AF2-405	0.2277	Adder	0.51
961151	AF2-406	1.7076	Adder	3.79
961201	AF2-411 O2	6.9940	Adder	15.52
WEC	WEC	0.1292	Confirmed LTF	0.1292
LGEE	LGEE	0.2168	Confirmed LTF	0.2168
CPL	CPL	0.0390	Confirmed LTF	0.0390
CBM-W2	CBM-W2	2.7600	Confirmed LTF	2.7600
CBM-W1	CBM-W1	5.6045	Confirmed LTF	5.6045
TVA	TVA	0.4032	Confirmed LTF	0.4032
CBM-S2	CBM-S2	0.7398	Confirmed LTF	0.7398
CBM-S1	CBM-S1	2.5986	Confirmed LTF	2.5986
MEC	MEC	0.6070	Confirmed LTF	0.6070

13.5.35 Index 35

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
99743668	200767	26HOMER CT	PENELEC	200793	26SEWARD 2	PENELEC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	109.0	114.21	DC	42.57

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	2.4488	Adder	2.88
942812	AE2-299 E	9.7953	Adder	11.52
942961	AE2-316 C	2.9564	Adder	3.48
942962	AE2-316 E	4.2159	Adder	4.96
943151	AE2-344 C	5.1608	Adder	6.07
943152	AE2-344 E	3.4405	Adder	4.05
943351	AF1-006 C	0.8993	Adder	1.06
943352	AF1-006 E	0.5059	Adder	0.6
943751	AF1-043	5.5326	Adder	6.51
944261	AF1-094 C	0.8490	Adder	1.0
944262	AF1-094 E	0.5660	Adder	0.67
944281	AF1-096 C	0.8159	Adder	0.96
944282	AF1-096 E	0.5439	Adder	0.64
944301	AF1-098 C	3.6410	Adder	4.28
944302	AF1-098 E	2.4273	Adder	2.86
944381	AF1-103 O1	1.7609	Adder	2.07
944391	AF1-104 O1	1.3374	Adder	1.57
944411	AF1-106 O1	1.9885	Adder	2.34
944881	AF1-153 C O1	0.6980	Adder	0.82
944882	AF1-153 E O1	0.4653	Adder	0.55
944901	AF1-155 C	0.7001	Adder	0.82
944902	AF1-155 E	0.4668	Adder	0.55
945021	AF1-167 C	0.5239	Adder	0.62
945022	AF1-167 E	0.3499	Adder	0.41
945051	AF1-170 C	3.2683	Adder	3.85
945052	AF1-170 E	2.1789	Adder	2.56
945121	AF1-177	0.4402	Adder	0.52
945331	AF1-198	0.2611	Adder	0.31
945451	AF1-210 C	0.5905	Adder	0.69
945452	AF1-210 E	0.3937	Adder	0.46
945551	AF1-220 C	5.7533	Adder	6.77
945552	AF1-220 E	3.8376	Adder	4.51
945673	AF1-232 BAT	2.0274	Merchant Transmission	2.0274
946111	AF1-276 C	9.9193	50/50	9.9193
946112	AF1-276 E	4.8856	50/50	4.8856
946121	AF1-277 C	9.9193	50/50	9.9193
946122	AF1-277 E	4.8856	50/50	4.8856
946131	AF1-278 C	7.9059	50/50	7.9059
946132	AF1-278 E	3.9322	50/50	3.9322
946211	AF1-286 C O1	0.8053	Adder	0.95
946212	AF1-286 E O1	0.5468	Adder	0.64
946221	AF1-287 C	0.8900	Adder	1.05
946222	AF1-287 E	0.5933	Adder	0.7
946381	AF1-302 C	1.2910	Adder	1.52
946382	AF1-302 E	1.7214	Adder	2.03
946401	AF1-304 C	4.0443	Adder	4.76
946402	AF1-304 E	2.6962	Adder	3.17
946421	AF1-306 C	2.9044	Adder	3.42
946422	AF1-306 E	11.6177	Adder	13.67
946771	AF1-217 C O2	0.8900	Adder	1.05
946772	AF1-217 E O2	0.5933	Adder	0.7
957161	AF2-010 C	1.7219	Adder	3.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957162	AF2-010 E	1.1604	Adder	2.58
957513	AF2-045 BAT	0.9480	Merchant Transmission	0.9480
957571	AF2-051 C O2	1.4419	Adder	3.2
957572	AF2-051 E O2	0.7428	Adder	1.65
957581	AF2-052 C	5.1682	50/50	5.1682
957582	AF2-052 E	2.5142	50/50	2.5142
957681	AF2-062 C	18.4584	50/50	18.4584
957682	AF2-062 E	12.3056	50/50	12.3056
957951	AF2-089 C	0.1189	Adder	0.26
957952	AF2-089 E	0.0613	Adder	0.14
958031	AF2-097 C	0.1117	Adder	0.25
958032	AF2-097 E	0.0745	Adder	0.17
958361	AF2-130 C	0.3810	Adder	0.85
958362	AF2-130 E	0.2540	Adder	0.56
958472	AF2-141 BAT	0.9252	Merchant Transmission	0.9252
958731	AF2-164 C O2	2.9121	Adder	6.46
958732	AF2-164 E O2	1.9414	Adder	4.31
958741	AF2-165 C	0.4319	Adder	0.96
958742	AF2-165 E	0.2879	Adder	0.64
958751	AF2-166 C	0.3810	Adder	0.85
958752	AF2-166 E	0.2540	Adder	0.56
958791	AF2-170 C	0.4253	Adder	0.94
958792	AF2-170 E	0.2835	Adder	0.63
959061	AF2-197 C O2	1.6204	Adder	3.6
959062	AF2-197 E O2	2.4306	Adder	5.4
959441	AF2-235 C	0.2162	Adder	0.48
959442	AF2-235 E	0.1441	Adder	0.32
959461	AF2-237 C	0.2250	Adder	0.5
959462	AF2-237 E	0.1500	Adder	0.33
959471	AF2-238 C	0.6388	Adder	1.42
959472	AF2-238 E	0.4259	Adder	0.95
959481	AF2-239 C	0.4662	Adder	1.03
959482	AF2-239 E	0.3738	Adder	0.83
959491	AF2-240 C	0.5691	Adder	1.26
959492	AF2-240 E	0.4848	Adder	1.08
959501	AF2-241 C	0.5955	Adder	1.32
959502	AF2-241 E	0.4584	Adder	1.02
959521	AF2-243 C	0.3239	Adder	0.72
959522	AF2-243 E	0.2159	Adder	0.48
959741	AF2-265 C	0.4578	Adder	1.02
959742	AF2-265 E	0.3407	Adder	0.76
959793	AF2-270 BAT	0.0805	Merchant Transmission	0.0805
959822	AF2-273 E	0.1241	Adder	0.28
960031	AF2-294 C	0.5840	Adder	1.3
960032	AF2-294 E	0.3893	Adder	0.86
960041	AF2-295 C	0.3711	Adder	0.82
960042	AF2-295 E	0.2474	Adder	0.55
960271	AF2-318 C	0.5039	Adder	1.12
960272	AF2-318 E	0.3360	Adder	0.75
960321	AF2-323 C O2	1.1466	Adder	2.55
960322	AF2-323 E O2	0.7644	Adder	1.7
961141	AF2-405	0.5269	Adder	1.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961151	AF2-406	3.9521	Adder	8.77
961201	AF2-411 O2	42.5670	50/50	42.5670
961211	AF2-412 O2	20.6180	50/50	20.6180
961451	AF2-436	0.0560	Adder	0.12
WEC	WEC	0.0400	Confirmed LTF	0.0400
LGEE	LGEE	0.0377	Confirmed LTF	0.0377
CALDERWOOD	CALDERWOOD	0.0537	Confirmed LTF	0.0537
CBM-W2	CBM-W2	0.1310	Confirmed LTF	0.1310
CBM-W1	CBM-W1	2.6271	Confirmed LTF	2.6271
O-066	O-066	4.4621	Confirmed LTF	4.4621
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
G-007	G-007	0.7634	Confirmed LTF	0.7634
MEC	MEC	0.1351	Confirmed LTF	0.1351
CATAWBA	CATAWBA	0.0851	Confirmed LTF	0.0851

13.5.36 Index 36

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
99743841	200767	26HOMER CT	PENELEC	200795	26SHELOCTA	PENELEC	1	PN-P1-2-PN-345-107T	single	917.0	153.77	156.71	DC	59.38

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
935191	AD1-154	2.1961	Adder	2.58
936421	AD2-055	4.3444	Adder	5.11
936991	AD2-133 C	2.8213	Adder	3.32
938351	AE1-053	1.5925	Adder	1.87
938881	AE1-116	1.0012	80/20	1.0012
938951	AE1-123	2.2356	Adder	2.63
938991	AE1-128 C	16.8091	80/20	16.8091
939171	AE1-147 C	1.3204	Adder	1.55
939291	AE1-160 C	1.8792	Adder	2.21
940201	AE2-001 C	1.3184	Adder	1.55
940681	AE2-055 C (Suspended)	1.2873	Adder	1.51
940861	AE2-074 C	3.2677	80/20	3.2677
941191	AE2-113 C	12.6014	80/20	12.6014
941231	AE2-117 C	1.5908	Adder	1.87
941241	AE2-118 C	1.5908	Adder	1.87
941261	AE2-120 C	1.3172	Adder	1.55
941271	AE2-121 C	0.7039	Adder	0.83
941321	AE2-126 C	1.6846	Adder	1.98
941331	AE2-129 C	1.7421	Adder	2.05
941351	AE2-131 C	1.7421	Adder	2.05
941421	AE2-139 C	7.3172	Adder	8.61
942121	AE2-224 C	15.9210	80/20	15.9210
942351	AE2-248 C	1.0402	Adder	1.22
942491	AE2-262 C	5.9296	Adder	6.98
942501	AE2-263 C	5.5738	Adder	6.56
942511	AE2-264 C	7.4709	Adder	8.79
942811	AE2-299 C	5.3143	Adder	6.25
942961	AE2-316 C	5.5600	Adder	6.54
943151	AE2-344 C	11.5182	Adder	13.55
943351	AF1-006 C	2.1004	Adder	2.47
943711	AF1-039 C O1	1.0988	Adder	1.29
943751	AF1-043	13.0332	Adder	15.33
944001	AF1-068 C O1	1.3828	Adder	1.63
944181	AF1-086 C O1	2.1801	Adder	2.56
944261	AF1-094 C	1.8988	Adder	2.23
944281	AF1-096 C	1.7756	Adder	2.09
944301	AF1-098 C	7.9340	Adder	9.33
944311	AF1-099 C	9.0011	Adder	10.59
944321	AF1-100 C	18.8317	Adder	22.15
944381	AF1-103 O1	3.3667	Adder	3.96
944391	AF1-104 O1	3.2762	Adder	3.85
944411	AF1-106 O1	2.9167	Adder	3.43
944471	AF1-112 C	1.3906	Adder	1.64
944671	AF1-132 C O1	1.2942	Adder	1.52
944691	AF1-134 C O1	1.4014	Adder	1.65
944751	AF1-140 C	2.2196	80/20	2.2196
944771	AF1-142 C	14.4018	Adder	16.94
944781	AF1-143 C	9.5549	Adder	11.24
944841	AF1-149 C	1.3171	Adder	1.55
944881	AF1-153 C O1	1.6027	Adder	1.89
944901	AF1-155 C	1.6020	Adder	1.88
945021	AF1-167 C	0.9343	Adder	1.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945051	AF1-170 C	7.6414	Adder	8.99
945121	AF1-177	0.8417	Adder	0.99
945161	AF1-181	0.1005	Adder	0.12
945171	AF1-182	0.5025	Adder	0.59
945181	AF1-183	0.1282	Adder	0.15
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.0200	Adder	1.2
945491	AF1-214 C	1.3172	Adder	1.55
945551	AF1-220 C	13.3684	Adder	15.73
945671	AF1-232 C O2	23.4676	80/20	23.4676
945751	AF1-240 C O1	1.3176	Adder	1.55
946081	AF1-273 C O1	11.5357	80/20	11.5357
946111	AF1-276 C	15.0743	80/20	15.0743
946121	AF1-277 C	15.0743	80/20	15.0743
946131	AF1-278 C	12.0145	80/20	12.0145
946211	AF1-286 C O1	1.1813	Adder	1.39
946221	AF1-287 C	1.9781	Adder	2.33
946381	AF1-302 C	2.4280	Adder	2.86
946401	AF1-304 C	8.7475	Adder	10.29
946421	AF1-306 C	6.7886	Adder	7.99
946431	AF1-307 C	8.5410	80/20	8.5410
946571	AF1-321 C O1	3.0025	80/20	3.0025
946771	AF1-217 C O2	1.9781	Adder	2.33
957001	AF2-001 C O2	2.9647	80/20	2.9647
957011	AF2-002 C O2	1.4824	80/20	1.4824
957161	AF2-010 C	3.8458	Adder	8.54
957451	AF2-039 C	0.5621	Adder	1.25
957561	AF2-050 C	7.9605	80/20	7.9605
957571	AF2-051 C O2	2.9152	Adder	6.47
957581	AF2-052 C	8.0253	80/20	8.0253
957681	AF2-062 C	27.4632	80/20	27.4632
957931	AF2-087 C	0.6212	80/20	0.6212
957941	AF2-088 C	0.2707	Adder	0.6
957951	AF2-089 C	0.2588	Adder	0.57
957981	AF2-092 C	1.6705	80/20	1.6705
958031	AF2-097 C	0.2609	Adder	0.58
958101	AF2-104 C	0.5340	80/20	0.5340
958271	AF2-121 C	0.9233	Adder	2.05
958361	AF2-130 C	0.8471	Adder	1.88
958411	AF2-135 C	0.2532	Adder	0.56
958471	AF2-141	0.6752	Adder	1.5
958731	AF2-164 C O2	10.3958	80/20	10.3958
958741	AF2-165 C	0.9170	Adder	2.04
958751	AF2-166 C	0.8471	Adder	1.88
958791	AF2-170 C	1.0418	Adder	2.31
959061	AF2-197 C O2	2.5697	Adder	5.7
959301	AF2-221 C	1.5451	80/20	1.5451
959401	AF2-231 C	0.2108	Adder	0.47
959441	AF2-235 C	0.4705	Adder	1.04
959461	AF2-237 C	0.5032	Adder	1.12
959471	AF2-238 C	0.9410	Adder	2.09
959481	AF2-239 C	0.7234	Adder	1.61

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959491	AF2-240 C	0.8348	Adder	1.85
959501	AF2-241 C	0.8734	Adder	1.94
959521	AF2-243 C	0.6877	Adder	1.53
959741	AF2-265 C	0.6744	Adder	1.5
960031	AF2-294 C	0.8627	Adder	1.91
960041	AF2-295 C	0.8491	Adder	1.88
960051	AF2-296 C	0.7427	Adder	1.65
960211	AF2-312 C	0.8059	Adder	1.79
960271	AF2-318 C	0.7821	Adder	1.74
960321	AF2-323 C O2	2.3307	Adder	5.17
960391	AF2-330 C	10.7793	80/20	10.7793
960451	AF2-336 C O2	2.7856	80/20	2.7856
960461	AF2-337 C O2	2.7856	80/20	2.7856
960471	AF2-338 C O2	2.7856	80/20	2.7856
960481	AF2-339 C O2	2.7856	80/20	2.7856
960901	AF2-381 C	19.8673	80/20	19.8673
961141	AF2-405	0.7729	Adder	1.72
961151	AF2-406	5.7969	Adder	12.87
961201	AF2-411 O2	26.7516	Adder	59.38
961211	AF2-412 O2	27.7277	80/20	27.7277
961451	AF2-436	0.0885	Adder	0.2
NEWTON	NEWTON	1.5150	Confirmed LTF	1.5150
FARMERCITY	FARMERCITY	0.0783	Confirmed LTF	0.0783
G-007A	G-007A	2.6205	Confirmed LTF	2.6205
VFT	VFT	7.5078	Confirmed LTF	7.5078
CALDERWOOD	CALDERWOOD	0.6565	Confirmed LTF	0.6565
PRAIRIE	PRAIRIE	3.6033	Confirmed LTF	3.6033
CHEOAH	CHEOAH	0.6597	Confirmed LTF	0.6597
EDWARDS	EDWARDS	0.4963	Confirmed LTF	0.4963
TILTON	TILTON	0.8946	Confirmed LTF	0.8946
MADISON	MADISON	0.0706	Confirmed LTF	0.0706
GIBSON	GIBSON	0.7731	Confirmed LTF	0.7731
BLUEG	BLUEG	2.4651	Confirmed LTF	2.4651
TRIMBLE	TRIMBLE	0.7908	Confirmed LTF	0.7908
CATAWBA	CATAWBA	0.4323	Confirmed LTF	0.4323

13.5.37 Index 37

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
99743509	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	147.0	156.51	DC	78.8

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 O2	2.6853	Adder	5.96
957572	AF2-051 E O2	1.3834	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 O2	5.3805	Adder	11.94
958732	AF2-164 E O2	3.5870	Adder	7.96
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 O2	3.0354	Adder	6.74
959062	AF2-197 E O2	4.5531	Adder	10.11
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 O2	2.1354	Adder	4.74
960322	AF2-323 E O2	1.4236	Adder	3.16
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 O2	78.8040	50/50	78.8040
961211	AF2-412 O2	38.0835	50/50	38.0835
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

13.5.38 Index 38

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
99743439	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.63	176.36	DC	78.99

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 O2	2.6879	Adder	5.97
957572	AF2-051 E O2	1.3847	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 O2	5.3922	Adder	11.97
958732	AF2-164 E O2	3.5948	Adder	7.98
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 O2	3.0369	Adder	6.74
959062	AF2-197 E O2	4.5553	Adder	10.11
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 O2	2.1372	Adder	4.74
960322	AF2-323 E O2	1.4248	Adder	3.16
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 O2	78.9900	50/50	78.9900
961211	AF2-412 O2	38.1862	50/50	38.1862
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

13.5.39 Index 39

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
99743640	200793	26SEWARD 2	PENELEC	200912	26CONEMAGH	PENELEC	1	PN-P2_3- PN-230-0252-A	breaker	1147.0	123.46	125.24	DC	47.1

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

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

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.4925	Adder	0.58
945181	AF1-183	0.1340	Adder	0.16
945331	AF1-198	0.3071	Adder	0.36
945451	AF1-210 C	0.9958	Adder	1.17
945452	AF1-210 E	0.6639	Adder	0.78
945491	AF1-214 C	1.2869	Adder	1.51
945492	AF1-214 E	0.8580	Adder	1.01
945551	AF1-220 C	12.2600	Adder	14.42
945552	AF1-220 E	8.1778	Adder	9.62
945671	AF1-232 C O2	29.9790	50/50	29.9790
945672	AF1-232 E O2	16.1426	50/50	16.1426
945751	AF1-240 C O1	1.9761	Adder	2.32
945752	AF1-240 E O1	1.3174	Adder	1.55
946071	AF1-272 C O1	12.9445	Adder	15.23
946072	AF1-272 E O1	8.6297	Adder	10.15
946081	AF1-273 C O1	14.7579	50/50	14.7579
946082	AF1-273 E O1	9.8386	50/50	9.8386
946111	AF1-276 C	10.1126	Adder	11.9
946112	AF1-276 E	4.9808	Adder	5.86
946121	AF1-277 C	10.1126	Adder	11.9
946122	AF1-277 E	4.9808	Adder	5.86
946131	AF1-278 C	8.0599	Adder	9.48
946132	AF1-278 E	4.0088	Adder	4.72
946211	AF1-286 C O1	0.9165	Adder	1.08
946212	AF1-286 E O1	0.6223	Adder	0.73
946221	AF1-287 C	1.1296	Adder	1.33
946222	AF1-287 E	0.7531	Adder	0.89
946381	AF1-302 C	2.1902	Adder	2.58
946382	AF1-302 E	2.9203	Adder	3.44
946401	AF1-304 C	6.8962	Adder	8.11
946402	AF1-304 E	4.5975	Adder	5.41
946421	AF1-306 C	6.1273	Adder	7.21
946422	AF1-306 E	24.5094	Adder	28.83
946431	AF1-307 C	13.6494	50/50	13.6494
946432	AF1-307 E	9.0996	50/50	9.0996
946571	AF1-321 C O1	3.7594	50/50	3.7594
946572	AF1-321 E O1	2.5062	50/50	2.5062
946771	AF1-217 C O2	1.1296	Adder	1.33
946772	AF1-217 E O2	0.7531	Adder	0.89
957001	AF2-001 C O2	3.7164	50/50	3.7164
957002	AF2-001 E O2	2.4776	50/50	2.4776
957011	AF2-002 C O2	1.8582	50/50	1.8582
957012	AF2-002 E O2	1.2388	50/50	1.2388
957161	AF2-010 C	2.4478	Adder	5.43
957162	AF2-010 E	1.6496	Adder	3.66
957451	AF2-039 C	0.6259	Adder	1.39
957452	AF2-039 E	0.4173	Adder	0.93
957512	AF2-045 E	5.8171	50/50	5.8171
957561	AF2-050 C	10.5564	50/50	10.5564
957562	AF2-050 E	7.0376	50/50	7.0376
957571	AF2-051 C O2	1.8338	Adder	4.07
957572	AF2-051 E O2	0.9447	Adder	2.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	2.9522	Adder	6.55
957582	AF2-052 E	1.4362	Adder	3.19
957681	AF2-062 C	9.8097	Adder	21.78
957682	AF2-062 E	6.5398	Adder	14.52
957931	AF2-087 C	0.8194	50/50	0.8194
957932	AF2-087 E	1.1283	50/50	1.1283
957941	AF2-088 C	0.3014	Adder	0.67
957942	AF2-088 E	0.2009	Adder	0.45
957951	AF2-089 C	0.1964	Adder	0.44
957952	AF2-089 E	0.1012	Adder	0.22
957981	AF2-092 C	2.1966	50/50	2.1966
957982	AF2-092 E	1.4644	50/50	1.4644
958101	AF2-104 C	0.6761	50/50	0.6761
958102	AF2-104 E	0.4507	50/50	0.4507
958271	AF2-121 C	1.1070	Adder	2.46
958272	AF2-121 E	0.7380	Adder	1.64
958361	AF2-130 C	0.7857	Adder	1.74
958362	AF2-130 E	0.5238	Adder	1.16
958411	AF2-135 C	0.3232	Adder	0.72
958412	AF2-135 E	0.2155	Adder	0.48
958471	AF2-141	0.8619	Adder	1.91
958731	AF2-164 C O2	3.2974	Adder	7.32
958732	AF2-164 E O2	2.1983	Adder	4.88
958741	AF2-165 C	0.7534	Adder	1.67
958742	AF2-165 E	0.5023	Adder	1.11
958751	AF2-166 C	0.7857	Adder	1.74
958752	AF2-166 E	0.5238	Adder	1.16
959301	AF2-221 C	2.0266	50/50	2.0266
959302	AF2-221 E	2.7987	50/50	2.7987
959401	AF2-231 C	0.2561	Adder	0.57
959402	AF2-231 E	0.1708	Adder	0.38
959441	AF2-235 C	0.3571	Adder	0.79
959442	AF2-235 E	0.2381	Adder	0.53
959461	AF2-237 C	0.3174	Adder	0.7
959462	AF2-237 E	0.2116	Adder	0.47
959471	AF2-238 C	0.7426	Adder	1.65
959472	AF2-238 E	0.4950	Adder	1.1
959481	AF2-239 C	0.5535	Adder	1.23
959482	AF2-239 E	0.4438	Adder	0.99
959491	AF2-240 C	0.6476	Adder	1.44
959492	AF2-240 E	0.5517	Adder	1.22
959501	AF2-241 C	0.6776	Adder	1.5
959502	AF2-241 E	0.5217	Adder	1.16
959521	AF2-243 C	0.5651	Adder	1.25
959522	AF2-243 E	0.3767	Adder	0.84
959741	AF2-265 C	0.5322	Adder	1.18
959742	AF2-265 E	0.3960	Adder	0.88
959792	AF2-270 E	1.1330	50/50	1.1330
959802	AF2-271 E	0.3327	Adder	0.74
959822	AF2-273 E	0.2111	Adder	0.47
960022	AF2-293 E	0.0664	Adder	0.15
960031	AF2-294 C	0.6575	Adder	1.46

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960032	AF2-294 E	0.4383	Adder	0.97
960041	AF2-295 C	0.7788	Adder	1.73
960042	AF2-295 E	0.5192	Adder	1.15
960051	AF2-296 C	1.1082	Adder	2.46
960052	AF2-296 E	0.7388	Adder	1.64
960211	AF2-312 C	2.9816	50/50	2.9816
960212	AF2-312 E	1.9877	50/50	1.9877
960271	AF2-318 C	0.5983	Adder	1.33
960272	AF2-318 E	0.3989	Adder	0.89
960321	AF2-323 C O2	1.4580	Adder	3.24
960322	AF2-323 E O2	0.9720	Adder	2.16
960391	AF2-330 C	14.8326	50/50	14.8326
960392	AF2-330 E	6.4873	50/50	6.4873
960451	AF2-336 C O2	3.6605	50/50	3.6605
960452	AF2-336 E O2	2.4403	50/50	2.4403
960461	AF2-337 C O2	3.6605	50/50	3.6605
960462	AF2-337 E O2	2.4403	50/50	2.4403
960471	AF2-338 C O2	3.6605	50/50	3.6605
960472	AF2-338 E O2	2.4403	50/50	2.4403
960481	AF2-339 C O2	3.6605	50/50	3.6605
960482	AF2-339 E O2	2.4403	50/50	2.4403
960901	AF2-381 C	25.3292	50/50	25.3292
960902	AF2-381 E	13.3295	50/50	13.3295
961141	AF2-405	0.5997	Adder	1.33
961151	AF2-406	4.4975	Adder	9.98
961201	AF2-411 O2	21.2199	Adder	47.1
961211	AF2-412 O2	9.9508	Adder	22.09
WEC	WEC	0.0652	Confirmed LTF	0.0652
LGEE	LGEE	0.0764	Confirmed LTF	0.0764
CALDERWOOD	CALDERWOOD	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.5569	Confirmed LTF	0.5569
CBM-W1	CBM-W1	3.8281	Confirmed LTF	3.8281
O-066	O-066	8.3866	Confirmed LTF	8.3866
CHEOAH	CHEOAH	0.0485	Confirmed LTF	0.0485
CBM-S1	CBM-S1	0.0596	Confirmed LTF	0.0596
G-007	G-007	1.3936	Confirmed LTF	1.3936
MEC	MEC	0.2447	Confirmed LTF	0.2447
CATAWBA	CATAWBA	0.0952	Confirmed LTF	0.0952

13.5.40 Index 40

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
99743409	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	199.19	202.12	DC	58.82

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 O2	3.2400	50/50	3.2400
957002	AF2-001 E O2	2.1600	50/50	2.1600
957011	AF2-002 C O2	1.6200	50/50	1.6200
957012	AF2-002 E O2	1.0800	50/50	1.0800
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 O2	3.1694	Adder	7.04
957572	AF2-051 E O2	1.6327	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 O2	4.9910	Adder	11.08
958732	AF2-164 E O2	3.3274	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 O2	2.5762	Adder	5.72
959062	AF2-197 E O2	3.8643	Adder	8.58
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 O2	2.5303	Adder	5.62
960322	AF2-323 E O2	1.6869	Adder	3.74
960391	AF2-330 C	5.5322	Adder	12.28
960392	AF2-330 E	2.4196	Adder	5.37
960451	AF2-336 C O2	1.3962	Adder	3.1
960452	AF2-336 E O2	0.9308	Adder	2.07
960461	AF2-337 C O2	1.3962	Adder	3.1
960462	AF2-337 E O2	0.9308	Adder	2.07
960471	AF2-338 C O2	1.3962	Adder	3.1
960472	AF2-338 E O2	0.9308	Adder	2.07
960481	AF2-339 C O2	1.3962	Adder	3.1
960482	AF2-339 E O2	0.9308	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 O2	26.4962	Adder	58.82
961211	AF2-412 O2	12.3074	Adder	27.32
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

13.5.41 Index 41

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
99743539	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	151.36	153.99	DC	36.47

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 O2	2.2151	50/50	2.2151
957002	AF2-001 E O2	1.4767	50/50	1.4767
957011	AF2-002 C O2	1.1075	50/50	1.1075
957012	AF2-002 E O2	0.7384	50/50	0.7384
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 O2	1.3234	Adder	2.94
957572	AF2-051 E O2	0.6818	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 O2	2.4418	Adder	5.42
958732	AF2-164 E O2	1.6279	Adder	3.61
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 O2	1.5489	Adder	3.44
959062	AF2-197 E O2	2.3233	Adder	5.16
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 O2	1.0517	Adder	2.33
960322	AF2-323 E O2	0.7011	Adder	1.56
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O2	0.9492	Adder	2.11
960452	AF2-336 E O2	0.6328	Adder	1.4
960461	AF2-337 C O2	0.9492	Adder	2.11
960462	AF2-337 E O2	0.6328	Adder	1.4
960471	AF2-338 C O2	0.9492	Adder	2.11
960472	AF2-338 E O2	0.6328	Adder	1.4
960481	AF2-339 C O2	0.9492	Adder	2.11
960482	AF2-339 E O2	0.6328	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 O2	16.4302	Adder	36.47
961211	AF2-412 O2	7.7183	Adder	17.13
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

13.5.42 Index 42

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
99743573	200811	26WARREN	PENELEC	200918	26ERIE S TIE	PENELEC	1	PN-P2-3-PN-345-003A	breaker	621.0	140.04	141.32	DC	17.58

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941332	AE2-129 E	0.5203	Adder	0.61
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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946381	AF1-302 C	1.2697	Adder	1.49
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
961201	AF2-411 O2	7.9198	Adder	17.58
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

13.5.43 Index 43

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
99743716	200819	26ERIE SE	PENELEC	200600	26ERIE SO	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	103.48	105.18	DC	32.44

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

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945551	AF1-220 C	13.7619	50/50	13.7619
945552	AF1-220 E	9.1797	50/50	9.1797
946111	AF1-276 C	14.2094	50/50	14.2094
946112	AF1-276 E	6.9986	50/50	6.9986
946121	AF1-277 C	14.2094	50/50	14.2094
946122	AF1-277 E	6.9986	50/50	6.9986
946131	AF1-278 C	11.3251	50/50	11.3251
946132	AF1-278 E	5.6328	50/50	5.6328
946211	AF1-286 C O1	0.7586	Adder	0.89
946212	AF1-286 E O1	0.5151	Adder	0.61
946381	AF1-302 C	1.2526	Adder	1.47
946382	AF1-302 E	1.6701	Adder	1.96
946421	AF1-306 C	6.9690	50/50	6.9690
946422	AF1-306 E	27.8762	50/50	27.8762
957451	AF2-039 C	0.3683	Adder	0.82
957452	AF2-039 E	0.2455	Adder	0.54
957581	AF2-052 C	6.4628	50/50	6.4628
957582	AF2-052 E	3.1441	50/50	3.1441
957681	AF2-062 C	24.0768	50/50	24.0768
957682	AF2-062 E	16.0512	50/50	16.0512
957941	AF2-088 C	0.1773	Adder	0.39
957942	AF2-088 E	0.1182	Adder	0.26
958031	AF2-097 C	0.6152	50/50	0.6152
958032	AF2-097 E	0.4102	50/50	0.4102
958271	AF2-121 C	0.4562	Adder	1.01
958272	AF2-121 E	0.3041	Adder	0.68
959061	AF2-197 C O2	1.6755	Adder	3.72
959062	AF2-197 E O2	2.5132	Adder	5.58
959471	AF2-238 C	0.5528	Adder	1.23
959472	AF2-238 E	0.3685	Adder	0.82
959481	AF2-239 C	0.4656	Adder	1.03
959482	AF2-239 E	0.3733	Adder	0.83
959491	AF2-240 C	0.5361	Adder	1.19
959492	AF2-240 E	0.4567	Adder	1.01
959501	AF2-241 C	0.5609	Adder	1.25
959502	AF2-241 E	0.4318	Adder	0.96
959741	AF2-265 C	0.3961	Adder	0.88
959742	AF2-265 E	0.2948	Adder	0.65
960022	AF2-293 E	0.0466	Adder	0.1
960031	AF2-294 C	0.5690	Adder	1.26
960032	AF2-294 E	0.3793	Adder	0.84
960041	AF2-295 C	1.4022	50/50	1.4022
960042	AF2-295 E	0.9348	50/50	0.9348
960271	AF2-318 C	0.5033	Adder	1.12
960272	AF2-318 E	0.3355	Adder	0.74
961141	AF2-405	0.4964	Adder	1.1
961151	AF2-406	3.7227	Adder	8.26
961201	AF2-411 O2	14.6151	Adder	32.44
961211	AF2-412 O2	6.0890	Adder	13.52
961451	AF2-436	0.0581	Adder	0.13
NEWTON	NEWTON	1.4946	Confirmed LTF	1.4946
FARMERCITY	FARMERCITY	0.0768	Confirmed LTF	0.0768

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

13.5.44 Index 44

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
98949038	200908	26CHAPMAN+	PENELEC	235220	01MOSHAN	AP	1	Base Case	single	520.0	125.36	131.08	DC	29.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O2	7.0975	80/20	7.0975
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126
960031	AF2-294 C	1.2774	80/20	1.2774

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O2	29.7450	80/20	29.7450
961211	AF2-412 O2	11.3061	80/20	11.3061
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

13.5.45 Index 45

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
99743590	200912	26CONEMAGH	PENELEC	200005	CONEM-GH	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	132.84	134.76	DC	47.1

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

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

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.4925	Adder	0.58
945181	AF1-183	0.1340	Adder	0.16
945331	AF1-198	0.3071	Adder	0.36
945451	AF1-210 C	0.9958	Adder	1.17
945452	AF1-210 E	0.6639	Adder	0.78
945491	AF1-214 C	1.2869	Adder	1.51
945492	AF1-214 E	0.8580	Adder	1.01
945551	AF1-220 C	12.2600	Adder	14.42
945552	AF1-220 E	8.1778	Adder	9.62
945671	AF1-232 C O2	29.9790	50/50	29.9790
945672	AF1-232 E O2	16.1426	50/50	16.1426
945751	AF1-240 C O1	1.9761	Adder	2.32
945752	AF1-240 E O1	1.3174	Adder	1.55
946071	AF1-272 C O1	12.9445	Adder	15.23
946072	AF1-272 E O1	8.6297	Adder	10.15
946081	AF1-273 C O1	14.7579	50/50	14.7579
946082	AF1-273 E O1	9.8386	50/50	9.8386
946111	AF1-276 C	10.1126	Adder	11.9
946112	AF1-276 E	4.9808	Adder	5.86
946121	AF1-277 C	10.1126	Adder	11.9
946122	AF1-277 E	4.9808	Adder	5.86
946131	AF1-278 C	8.0599	Adder	9.48
946132	AF1-278 E	4.0088	Adder	4.72
946211	AF1-286 C O1	0.9165	Adder	1.08
946212	AF1-286 E O1	0.6223	Adder	0.73
946221	AF1-287 C	1.1296	Adder	1.33
946222	AF1-287 E	0.7531	Adder	0.89
946381	AF1-302 C	2.1902	Adder	2.58
946382	AF1-302 E	2.9203	Adder	3.44
946401	AF1-304 C	6.8962	Adder	8.11
946402	AF1-304 E	4.5975	Adder	5.41
946421	AF1-306 C	6.1273	Adder	7.21
946422	AF1-306 E	24.5094	Adder	28.83
946431	AF1-307 C	13.6494	50/50	13.6494
946432	AF1-307 E	9.0996	50/50	9.0996
946571	AF1-321 C O1	3.7594	50/50	3.7594
946572	AF1-321 E O1	2.5062	50/50	2.5062
946771	AF1-217 C O2	1.1296	Adder	1.33
946772	AF1-217 E O2	0.7531	Adder	0.89
957001	AF2-001 C O2	3.7164	50/50	3.7164
957002	AF2-001 E O2	2.4776	50/50	2.4776
957011	AF2-002 C O2	1.8582	50/50	1.8582
957012	AF2-002 E O2	1.2388	50/50	1.2388
957161	AF2-010 C	2.4478	Adder	5.43
957162	AF2-010 E	1.6496	Adder	3.66
957451	AF2-039 C	0.6259	Adder	1.39
957452	AF2-039 E	0.4173	Adder	0.93
957512	AF2-045 E	5.8171	50/50	5.8171
957561	AF2-050 C	10.5564	50/50	10.5564
957562	AF2-050 E	7.0376	50/50	7.0376
957571	AF2-051 C O2	1.8338	Adder	4.07
957572	AF2-051 E O2	0.9447	Adder	2.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	2.9522	Adder	6.55
957582	AF2-052 E	1.4362	Adder	3.19
957681	AF2-062 C	9.8097	Adder	21.78
957682	AF2-062 E	6.5398	Adder	14.52
957931	AF2-087 C	0.8194	50/50	0.8194
957932	AF2-087 E	1.1283	50/50	1.1283
957941	AF2-088 C	0.3014	Adder	0.67
957942	AF2-088 E	0.2009	Adder	0.45
957951	AF2-089 C	0.1964	Adder	0.44
957952	AF2-089 E	0.1012	Adder	0.22
957981	AF2-092 C	2.1966	50/50	2.1966
957982	AF2-092 E	1.4644	50/50	1.4644
958101	AF2-104 C	0.6761	50/50	0.6761
958102	AF2-104 E	0.4507	50/50	0.4507
958271	AF2-121 C	1.1070	Adder	2.46
958272	AF2-121 E	0.7380	Adder	1.64
958361	AF2-130 C	0.7857	Adder	1.74
958362	AF2-130 E	0.5238	Adder	1.16
958411	AF2-135 C	0.3232	Adder	0.72
958412	AF2-135 E	0.2155	Adder	0.48
958471	AF2-141	0.8619	Adder	1.91
958731	AF2-164 C O2	3.2974	Adder	7.32
958732	AF2-164 E O2	2.1983	Adder	4.88
958741	AF2-165 C	0.7534	Adder	1.67
958742	AF2-165 E	0.5023	Adder	1.11
958751	AF2-166 C	0.7857	Adder	1.74
958752	AF2-166 E	0.5238	Adder	1.16
959301	AF2-221 C	2.0266	50/50	2.0266
959302	AF2-221 E	2.7987	50/50	2.7987
959401	AF2-231 C	0.2561	Adder	0.57
959402	AF2-231 E	0.1708	Adder	0.38
959441	AF2-235 C	0.3571	Adder	0.79
959442	AF2-235 E	0.2381	Adder	0.53
959461	AF2-237 C	0.3174	Adder	0.7
959462	AF2-237 E	0.2116	Adder	0.47
959471	AF2-238 C	0.7426	Adder	1.65
959472	AF2-238 E	0.4950	Adder	1.1
959481	AF2-239 C	0.5535	Adder	1.23
959482	AF2-239 E	0.4438	Adder	0.99
959491	AF2-240 C	0.6476	Adder	1.44
959492	AF2-240 E	0.5517	Adder	1.22
959501	AF2-241 C	0.6776	Adder	1.5
959502	AF2-241 E	0.5217	Adder	1.16
959521	AF2-243 C	0.5651	Adder	1.25
959522	AF2-243 E	0.3767	Adder	0.84
959741	AF2-265 C	0.5322	Adder	1.18
959742	AF2-265 E	0.3960	Adder	0.88
959792	AF2-270 E	1.1330	50/50	1.1330
959802	AF2-271 E	0.3327	Adder	0.74
959822	AF2-273 E	0.2111	Adder	0.47
960022	AF2-293 E	0.0664	Adder	0.15
960031	AF2-294 C	0.6575	Adder	1.46

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960032	AF2-294 E	0.4383	Adder	0.97
960041	AF2-295 C	0.7788	Adder	1.73
960042	AF2-295 E	0.5192	Adder	1.15
960051	AF2-296 C	1.1082	Adder	2.46
960052	AF2-296 E	0.7388	Adder	1.64
960211	AF2-312 C	2.9816	50/50	2.9816
960212	AF2-312 E	1.9877	50/50	1.9877
960271	AF2-318 C	0.5983	Adder	1.33
960272	AF2-318 E	0.3989	Adder	0.89
960321	AF2-323 C O2	1.4580	Adder	3.24
960322	AF2-323 E O2	0.9720	Adder	2.16
960391	AF2-330 C	14.8326	50/50	14.8326
960392	AF2-330 E	6.4873	50/50	6.4873
960451	AF2-336 C O2	3.6605	50/50	3.6605
960452	AF2-336 E O2	2.4403	50/50	2.4403
960461	AF2-337 C O2	3.6605	50/50	3.6605
960462	AF2-337 E O2	2.4403	50/50	2.4403
960471	AF2-338 C O2	3.6605	50/50	3.6605
960472	AF2-338 E O2	2.4403	50/50	2.4403
960481	AF2-339 C O2	3.6605	50/50	3.6605
960482	AF2-339 E O2	2.4403	50/50	2.4403
960901	AF2-381 C	25.3292	50/50	25.3292
960902	AF2-381 E	13.3295	50/50	13.3295
961141	AF2-405	0.5997	Adder	1.33
961151	AF2-406	4.4975	Adder	9.98
961201	AF2-411 O2	21.2199	Adder	47.1
961211	AF2-412 O2	9.9508	Adder	22.09
WEC	WEC	0.0652	Confirmed LTF	0.0652
LGEE	LGEE	0.0764	Confirmed LTF	0.0764
CALDERWOOD	CALDERWOOD	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.5569	Confirmed LTF	0.5569
CBM-W1	CBM-W1	3.8281	Confirmed LTF	3.8281
O-066	O-066	8.3866	Confirmed LTF	8.3866
CHEOAH	CHEOAH	0.0485	Confirmed LTF	0.0485
CBM-S1	CBM-S1	0.0596	Confirmed LTF	0.0596
G-007	G-007	1.3936	Confirmed LTF	1.3936
MEC	MEC	0.2447	Confirmed LTF	0.2447
CATAWBA	CATAWBA	0.0952	Confirmed LTF	0.0952

13.5.46 Index 46

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
99743936	200924	26CANYON	PENELEC	200706	26N.MESHPN	PENELEC	1	Base Case	single	546.0	134.11	145.3	DC	64.44

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	0.6910	80/20	0.6910
200665	26SHAWVL 3	2.8806	80/20	2.8806
200666	26SHAWVL 4	2.8470	80/20	2.8470
200715	26SHAWVL 1	1.9298	80/20	1.9298
200722	26SHAWVL 2	1.9699	80/20	1.9699
200887	26ARMNA MT	0.8237	80/20	0.8237
200898	26AA1-106	5.9839	80/20	5.9839
200913	26SHAW-D	0.0888	80/20	0.0888
200949	26X1-109	52.2948	80/20	52.2948
203261	26BLOSSBCT	0.8091	80/20	0.8091
203283	26MANOR_T86	0.0616	80/20	0.0616
203349	26Z1-069 C	0.3952	80/20	0.3952
203350	26MILZ1-092	0.8692	80/20	0.8692
203351	26GROZ1-110	1.0322	80/20	1.0322
203352	26CANZ2-011	1.0322	80/20	1.0322
919201	AA1-144 OP	63.5733	80/20	63.5733
919491	AA2-000	87.1273	80/20	87.1273
920351	AA2-133	0.3885	80/20	0.3885
922932	AB1-082 OP (Suspended)	2.6951	80/20	2.6951
923442	AB1-160 C	0.1129	80/20	0.1129
930511	AB1-092	3.1991	80/20	3.1991
934801	AD1-108	0.0778	80/20	0.0778
934811	AD1-109	0.0571	80/20	0.0571
935061	AD1-142	0.0480	80/20	0.0480
936421	AD2-055	6.5863	80/20	6.5863
939171	AE1-147 C	0.8052	Adder	0.95
940201	AE2-001 C	0.8017	Adder	0.94
940861	AE2-074 C	2.0463	80/20	2.0463
941191	AE2-113 C	6.2788	80/20	6.2788
941261	AE2-120 C	0.7998	Adder	0.94
941271	AE2-121 C	0.4313	Adder	0.51
941321	AE2-126 C	1.0780	80/20	1.0780
941421	AE2-139 C	21.6387	80/20	21.6387
942491	AE2-262 C	4.8120	80/20	4.8120
942501	AE2-263 C	4.5233	80/20	4.5233
943751	AF1-043	19.7589	80/20	19.7589
944311	AF1-099 C	7.3046	80/20	7.3046
944321	AF1-100 C	15.0315	80/20	15.0315
944411	AF1-106 O1	5.0642	80/20	5.0642
944771	AF1-142 C	11.6874	80/20	11.6874
944841	AF1-149 C	0.7996	Adder	0.94

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944881	AF1-153 C O1	1.0586	80/20	1.0586
944901	AF1-155 C	1.0538	80/20	1.0538
945161	AF1-181	0.0777	80/20	0.0777
945171	AF1-182	0.3861	80/20	0.3861
945181	AF1-183	0.0917	80/20	0.0917
945331	AF1-198	0.6171	80/20	0.6171
945491	AF1-214 C	0.7999	Adder	0.94
945551	AF1-220 C	8.4266	80/20	8.4266
946111	AF1-276 C	6.3992	80/20	6.3992
946121	AF1-277 C	6.3992	80/20	6.3992
946131	AF1-278 C	5.1002	80/20	5.1002
946211	AF1-286 C O1	2.0510	80/20	2.0510
946421	AF1-306 C	4.6258	80/20	4.6258
957451	AF2-039 C	0.6950	80/20	0.6950
957581	AF2-052 C	3.8617	80/20	3.8617
957681	AF2-062 C	11.6496	80/20	11.6496
957941	AF2-088 C	0.3346	80/20	0.3346
959061	AF2-197 C O2	15.9788	80/20	15.9788
959471	AF2-238 C	3.0841	80/20	3.0841
959481	AF2-239 C	3.0481	80/20	3.0481
959491	AF2-240 C	2.7347	80/20	2.7347
959501	AF2-241 C	2.8613	80/20	2.8613
959741	AF2-265 C	2.2103	80/20	2.2103
960041	AF2-295 C	1.0538	80/20	1.0538
960271	AF2-318 C	3.2952	80/20	3.2952
961141	AF2-405	2.5321	80/20	2.5321
961151	AF2-406	18.9908	80/20	18.9908
961201	AF2-411 O2	64.4430	80/20	64.4430
961211	AF2-412 O2	25.8206	80/20	25.8206
961451	AF2-436	0.1698	80/20	0.1698
WEC	WEC	0.3307	Confirmed LTF	0.3307
LGEE	LGEE	0.5779	Confirmed LTF	0.5779
CPL	CPL	0.3870	Confirmed LTF	0.3870
CBM-W2	CBM-W2	7.8214	Confirmed LTF	7.8214
CBM-W1	CBM-W1	13.7235	Confirmed LTF	13.7235
TVA	TVA	1.2488	Confirmed LTF	1.2488
CBM-S2	CBM-S2	3.9188	Confirmed LTF	3.9188
CBM-S1	CBM-S1	7.7873	Confirmed LTF	7.7873
MEC	MEC	1.6112	Confirmed LTF	1.6112

13.5.47 Index 47

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
101442891	200927	26FOURMILE	PENELEC	200820	26ERIE SE	PENELEC	1	PN-P2-3-PN-230-6G	breaker	245.0	151.56	154.6	DC	16.43

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 O2	7.4035	Adder	16.43
961211	AF2-412 O2	3.1971	Adder	7.1
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

13.5.48 Index 48

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
99743643	208009	LACK	PPL	200074	LACKAW	PJM	3	PL_P42_001057	breaker	1167.0	120.22	122.23	DC	51.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	5.2686	Adder	6.2
200894	26K02	8.7984	Adder	10.35
200898	26AA1-106	3.4019	Adder	4.0
203907	26Y2-042	5.6777	Adder	6.68
203909	26Z1-038	5.2687	Adder	6.2
203910	26Z1-091	4.3538	Adder	5.12
203999	P-047 E	13.0678	Adder	15.37
208052	LAEN G2	27.4578	50/50	27.4578
208053	LAEN G3	27.4578	50/50	27.4578
208055	LAEN G1	27.4578	50/50	27.4578
209003	KSTN IPP (Deactivation : 31/05/2020)	1.9890	Adder	2.34
209009	PEIP 2	3.5998	50/50	3.5998
209010	PEIP 1	2.1994	50/50	2.1994
209029	WAYM IPP	0.7331	50/50	0.7331
294573	P-028 E	31.6118	Adder	37.19
914271	Y2-089	30.4785	50/50	30.4785
916202	Z1-069 E	6.4890	Adder	7.63
917662	Z2-107 E (Suspended)	4.0592	Adder	4.78
918601	AA1-077 C	2.8007	50/50	2.8007
918602	AA1-077 E	37.7264	50/50	37.7264
918682	AA1-082 E	12.1435	Adder	14.29
919201	AA1-144 OP	33.8976	Adder	39.88
919491	AA2-000	47.2181	Adder	55.55
920341	AA2-132 (Suspended)	3.9251	Adder	4.62
922932	AB1-082 OP (Suspended)	1.7593	Adder	2.07
923443	AB1-160 E	1.8540	Adder	2.18
923673	AB1-182 E	3.5931	Adder	4.23
930511	AB1-092	1.7337	Adder	2.04
936421	AD2-055	3.5694	Adder	4.2
938331	AE1-051	4.0592	Adder	4.78
938401	AE1-059 C O1	55.0800	Adder	64.8
940861	AE2-074 C	1.3359	Adder	1.57
940862	AE2-074 E	1.7584	Adder	2.07
941421	AE2-139 C	11.5729	Adder	13.62
941422	AE2-139 E	7.7152	Adder	9.08
943751	AF1-043	10.7082	Adder	12.6
944411	AF1-106 O1	3.5170	Adder	4.14
945331	AF1-198	0.3829	Adder	0.45
946211	AF1-286 C O1	1.4244	Adder	1.68
946212	AF1-286 E O1	0.9672	Adder	1.14
957121	AF2-006 C	5.7306	50/50	5.7306

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957122	AF2-006 E	1.7211	Adder	3.82
957131	AF2-007 C	5.7306	50/50	5.7306
957132	AF2-007 E	1.7211	Adder	3.82
959061	AF2-197 C O2	4.5131	Adder	10.02
959062	AF2-197 E O2	6.7696	Adder	15.03
959471	AF2-238 C	1.0698	Adder	2.37
959472	AF2-238 E	0.7132	Adder	1.58
959481	AF2-239 C	1.2407	Adder	2.75
959482	AF2-239 E	0.9948	Adder	2.21
959491	AF2-240 C	1.0066	Adder	2.23
959492	AF2-240 E	0.8574	Adder	1.9
959501	AF2-241 C	1.0532	Adder	2.34
959502	AF2-241 E	0.8108	Adder	1.8
959741	AF2-265 C	0.7667	Adder	1.7
959742	AF2-265 E	0.5706	Adder	1.27
959912	AF2-282 E	0.6454	Adder	1.43
959922	AF2-283 E	0.4303	Adder	0.96
960031	AF2-294 C	1.2545	Adder	2.78
960032	AF2-294 E	0.8363	Adder	1.86
960271	AF2-318 C	1.3413	Adder	2.98
960272	AF2-318 E	0.8942	Adder	1.98
961141	AF2-405	0.9320	Adder	2.07
961151	AF2-406	6.9900	Adder	15.52
961201	AF2-411 O2	23.0336	Adder	51.13
961211	AF2-412 O2	9.2052	Adder	20.43
961451	AF2-436	0.1865	Adder	0.41
961461	AF2-437	0.2467	Adder	0.55
WEC	WEC	0.0891	Confirmed LTF	0.0891
LGEE	LGEE	0.1438	Confirmed LTF	0.1438
CBM-W2	CBM-W2	1.6544	Confirmed LTF	1.6544
CBM-W1	CBM-W1	4.0282	Confirmed LTF	4.0282
TVA	TVA	0.2058	Confirmed LTF	0.2058
O-066	O-066	32.5584	Confirmed LTF	32.5584
CBM-S1	CBM-S1	1.4228	Confirmed LTF	1.4228
G-007	G-007	4.6634	Confirmed LTF	4.6634
MEC	MEC	0.4004	Confirmed LTF	0.4004
CATAWBA	CATAWBA	0.0073	Confirmed LTF	0.0073

13.5.49 Index 49

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
99743701	208009	LACK	PPL	200074	LACKAW	PJM	4	PL_P42_001055	breaker	1145.0	107.04	108.88	DC	46.0

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	4.7537	Adder	5.59
200894	26K02	7.9202	Adder	9.32
200898	26AA1-106	3.0638	Adder	3.6
203907	26Y2-042	5.1254	Adder	6.03
203909	26Z1-038	4.7538	Adder	5.59
203910	26Z1-091	3.9256	Adder	4.62
203999	P-047 E	11.7664	Adder	13.84
208052	LAEN G2	24.8026	50/50	24.8026
208053	LAEN G3	24.8026	50/50	24.8026
208055	LAEN G1	24.8026	50/50	24.8026
209003	KSTN IPP (Deactivation : 31/05/2020)	1.7967	Adder	2.11
209009	PEIP 2	3.2517	50/50	3.2517
209010	PEIP 1	1.9867	50/50	1.9867
209029	WAYM IPP	0.6622	50/50	0.6622
294573	P-028 E	28.5223	Adder	33.56
914271	Y2-089	27.5312	50/50	27.5312
916202	Z1-069 E	5.8297	Adder	6.86
917662	Z2-107 E (Suspended)	3.6666	Adder	4.31
918601	AA1-077 C	2.5299	50/50	2.5299
918602	AA1-077 E	34.0782	50/50	34.0782
918682	AA1-082 E	10.9475	Adder	12.88
919201	AA1-144 OP	30.5572	Adder	35.95
919491	AA2-000	42.3696	Adder	49.85
920341	AA2-132 (Suspended)	3.5376	Adder	4.16
922932	AB1-082 OP (Suspended)	1.5770	Adder	1.86
923443	AB1-160 E	1.6656	Adder	1.96
923673	AB1-182 E	3.1299	Adder	3.68
925951	AC1-071 C (Suspended)	2.7815	Adder	3.27
925952	AC1-071 E (Suspended)	18.6207	Adder	21.91
930511	AB1-092	1.5557	Adder	1.83
936421	AD2-055	3.2029	Adder	3.77
938331	AE1-051	3.6666	Adder	4.31
938401	AE1-059 C O1	45.1639	Adder	53.13
940861	AE2-074 C	1.1974	Adder	1.41
940862	AE2-074 E	1.5762	Adder	1.85
941421	AE2-139 C	10.4283	Adder	12.27
941422	AE2-139 E	6.9522	Adder	8.18
943751	AF1-043	9.6087	Adder	11.3
944411	AF1-106 O1	3.1680	Adder	3.73
945331	AF1-198	0.3446	Adder	0.41
946211	AF1-286 C O1	1.2830	Adder	1.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946212	AF1-286 E O1	0.8712	Adder	1.02
957121	AF2-006 C	5.1764	50/50	5.1764
957122	AF2-006 E	1.5547	Adder	3.45
957131	AF2-007 C	5.1764	50/50	5.1764
957132	AF2-007 E	1.5547	Adder	3.45
959061	AF2-197 C O2	4.0686	Adder	9.03
959062	AF2-197 E O2	6.1029	Adder	13.55
959471	AF2-238 C	0.9634	Adder	2.14
959472	AF2-238 E	0.6423	Adder	1.43
959481	AF2-239 C	1.1185	Adder	2.48
959482	AF2-239 E	0.8968	Adder	1.99
959491	AF2-240 C	0.9067	Adder	2.01
959492	AF2-240 E	0.7723	Adder	1.71
959501	AF2-241 C	0.9486	Adder	2.11
959502	AF2-241 E	0.7304	Adder	1.62
959741	AF2-265 C	0.6904	Adder	1.53
959742	AF2-265 E	0.5138	Adder	1.14
959912	AF2-282 E	0.5830	Adder	1.29
959922	AF2-283 E	0.3887	Adder	0.86
959942	AF2-285 E	0.2425	Adder	0.54
960031	AF2-294 C	1.1306	Adder	2.51
960032	AF2-294 E	0.7537	Adder	1.67
960271	AF2-318 C	1.2092	Adder	2.68
960272	AF2-318 E	0.8061	Adder	1.79
961141	AF2-405	0.8395	Adder	1.86
961151	AF2-406	6.2963	Adder	13.98
961201	AF2-411 O2	20.7253	Adder	46.01
961211	AF2-412 O2	8.2787	Adder	18.38
961261	AF2-417 C O2	1.4553	Adder	3.23
961262	AF2-417 E O2	0.9702	Adder	2.15
961451	AF2-436	0.1682	Adder	0.37
961461	AF2-437	0.2227	Adder	0.49
WEC	WEC	0.0589	Confirmed LTF	0.0589
LGEE	LGEE	0.0907	Confirmed LTF	0.0907
CBM-W2	CBM-W2	0.9419	Confirmed LTF	0.9419
CBM-W1	CBM-W1	2.7772	Confirmed LTF	2.7772
TVA	TVA	0.0938	Confirmed LTF	0.0938
O-066	O-066	26.6582	Confirmed LTF	26.6582
CBM-S1	CBM-S1	0.7157	Confirmed LTF	0.7157
G-007	G-007	3.9489	Confirmed LTF	3.9489
MEC	MEC	0.2542	Confirmed LTF	0.2542
CATAWBA	CATAWBA	0.0283	Confirmed LTF	0.0283

13.5.50 Index 50

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
100836926	235203	01KISSNG	AP	235197	01KARNSC	AP	1	PN-P1-2-PN-345-107T	single	268.0	145.36	148.01	DC	15.72

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
943151	AE2-344 C	6.9131	80/20	6.9131
943351	AF1-006 C	1.2268	80/20	1.2268
943751	AF1-043	5.4282	Adder	6.39
944001	AF1-068 C O1	0.5791	Adder	0.68
944181	AF1-086 C O1	1.2012	Adder	1.41
944261	AF1-094 C	1.3013	80/20	1.3013
944281	AF1-096 C	1.5670	80/20	1.5670
944301	AF1-098 C	4.4381	80/20	4.4381
944311	AF1-099 C	4.0006	Adder	4.71
944321	AF1-100 C	8.6190	Adder	10.14
944381	AF1-103 O1	1.6700	80/20	1.6700
944391	AF1-104 O1	1.9318	80/20	1.9318
944471	AF1-112 C	0.5846	Adder	0.69
944671	AF1-132 C O1	0.5414	Adder	0.64
944691	AF1-134 C O1	0.6922	Adder	0.81
944771	AF1-142 C	6.4009	Adder	7.53
944841	AF1-149 C	0.5575	Adder	0.66
944881	AF1-153 C O1	1.1507	80/20	1.1507
944901	AF1-155 C	1.1615	80/20	1.1615
945021	AF1-167 C	1.4654	80/20	1.4654
945051	AF1-170 C	4.5584	80/20	4.5584
945121	AF1-177	0.4175	80/20	0.4175
945161	AF1-181	0.0460	Adder	0.05
945171	AF1-182	0.2300	Adder	0.27
945181	AF1-183	0.0571	Adder	0.07
945331	AF1-198	0.1099	Adder	0.13
945451	AF1-210 C	1.3130	80/20	1.3130
945491	AF1-214 C	0.5577	Adder	0.66
945551	AF1-220 C	5.8245	Adder	6.85
945751	AF1-240 C O1	1.5150	80/20	1.5150
946111	AF1-276 C	4.1027	Adder	4.83
946121	AF1-277 C	4.1027	Adder	4.83
946131	AF1-278 C	3.2699	Adder	3.85
946221	AF1-287 C	1.1894	80/20	1.1894
946381	AF1-302 C	2.0515	80/20	2.0515
946401	AF1-304 C	8.1156	80/20	8.1156
946421	AF1-306 C	3.9889	80/20	3.9889
946771	AF1-217 C O2	1.1894	80/20	1.1894
957161	AF2-010 C	5.0365	80/20	5.0365
957451	AF2-039 C	0.2431	Adder	0.54
957571	AF2-051 C O2	3.5125	80/20	3.5125
957581	AF2-052 C	1.1710	Adder	2.6
957681	AF2-062 C	3.8318	Adder	8.51
957941	AF2-088 C	0.1170	Adder	0.26
957951	AF2-089 C	0.4309	80/20	0.4309
958031	AF2-097 C	0.2875	80/20	0.2875
958271	AF2-121 C	0.3244	Adder	0.72
958361	AF2-130 C	1.8707	80/20	1.8707
958731	AF2-164 C O2	5.0021	80/20	5.0021
958741	AF2-165 C	1.6831	80/20	1.6831
958751	AF2-166 C	1.8707	80/20	1.8707
958791	AF2-170 C	1.1591	80/20	1.1591

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959441	AF2-235 C	0.7835	80/20	0.7835
959461	AF2-237 C	0.6506	80/20	0.6506
959521	AF2-243 C	1.2623	80/20	1.2623
960041	AF2-295 C	1.1615	80/20	1.1615
960051	AF2-296 C	0.3669	Adder	0.81
960211	AF2-312 C	0.2747	Adder	0.61
960321	AF2-323 C O2	2.7995	80/20	2.7995
961201	AF2-411 O2	7.0805	Adder	15.72
961211	AF2-412 O2	3.1075	Adder	6.9
NEWTON	NEWTON	0.7307	Confirmed LTF	0.7307
FARMERCITY	FARMERCITY	0.0375	Confirmed LTF	0.0375
G-007A	G-007A	1.9683	Confirmed LTF	1.9683
VFT	VFT	5.4438	Confirmed LTF	5.4438
CALDERWOOD	CALDERWOOD	0.2858	Confirmed LTF	0.2858
PRAIRIE	PRAIRIE	1.7151	Confirmed LTF	1.7151
CHEOAH	CHEOAH	0.2863	Confirmed LTF	0.2863
EDWARDS	EDWARDS	0.2439	Confirmed LTF	0.2439
TILTON	TILTON	0.4378	Confirmed LTF	0.4378
MADISON	MADISON	0.0544	Confirmed LTF	0.0544
GIBSON	GIBSON	0.3740	Confirmed LTF	0.3740
BLUEG	BLUEG	1.1874	Confirmed LTF	1.1874
TRIMBLE	TRIMBLE	0.3812	Confirmed LTF	0.3812
CATAWBA	CATAWBA	0.1708	Confirmed LTF	0.1708

13.5.51 Index 51

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	
98949006	235219	01MILES	B	AP	235970	01DALE	AP	1	AP-P1-3-WP-230-325T	single	554.0	121.76	123.27	DC	18.42

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	4.2273	80/20	4.2273
200643	26SENECA#2	3.9924	80/20	3.9924
200644	26SENECA#3	0.3931	80/20	0.3931
200649	26PENNTech	1.1827	80/20	1.1827
200665	26SHAWVL 3	6.7642	80/20	6.7642
200666	26SHAWVL 4	6.6874	80/20	6.6874
200715	26SHAWVL 1	4.3179	80/20	4.3179
200722	26SHAWVL 2	4.4066	80/20	4.4066
200887	26ARMNA MT	0.2176	80/20	0.2176
200898	26AA1-106	1.9448	80/20	1.9448
200905	26Q36	0.1745	80/20	0.1745
200913	26SHAW-D	0.1866	80/20	0.1866
200949	26X1-109	9.0180	80/20	9.0180
201201	26WRREN CT	0.8793	80/20	0.8793
201477	26Y2-055	2.5955	80/20	2.5955
203261	26BLOSSBCT	0.2534	80/20	0.2534
203283	26MANOR_T86	0.0142	80/20	0.0142
203349	26Z1-069 C	0.1660	80/20	0.1660
203351	26GROZ1-110	0.3355	80/20	0.3355
203352	26CANZ2-011	0.3355	80/20	0.3355
919201	AA1-144 OP	11.7833	80/20	11.7833
919491	AA2-000	95.7206	80/20	95.7206
922932	AB1-082 OP (Suspended)	1.6195	80/20	1.6195
923442	AB1-160 C	0.0474	80/20	0.0474
930511	AB1-092	3.5146	80/20	3.5146
934801	AD1-108	0.0253	80/20	0.0253
934811	AD1-109	0.0185	80/20	0.0185
936421	AD2-055	7.2359	80/20	7.2359
936991	AD2-133 C	1.8212	80/20	1.8212
939171	AE1-147 C	2.3670	80/20	2.3670
940201	AE2-001 C	2.0989	80/20	2.0989
940681	AE2-055 C (Suspended)	-1.6111	Adder	-1.9
940861	AE2-074 C	1.2297	80/20	1.2297
941191	AE2-113 C	7.6040	80/20	7.6040
941261	AE2-120 C	1.9012	80/20	1.9012
941271	AE2-121 C	1.6439	80/20	1.6439
941321	AE2-126 C	2.0389	80/20	2.0389
941331	AE2-129 C	1.6408	80/20	1.6408
941351	AE2-131 C	1.6408	80/20	1.6408
941421	AE2-139 C	5.5440	80/20	5.5440

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942491	AE2-262 C	18.3805	80/20	18.3805
942501	AE2-263 C	17.2777	80/20	17.2777
942961	AE2-316 C	5.2288	80/20	5.2288
943751	AF1-043	21.7077	80/20	21.7077
944181	AF1-086 C O1	1.6594	80/20	1.6594
944311	AF1-099 C	27.9016	80/20	27.9016
944321	AF1-100 C	35.4120	80/20	35.4120
944381	AF1-103 O1	1.7886	80/20	1.7886
944411	AF1-106 O1	1.0460	Adder	1.23
944691	AF1-134 C O1	1.4820	80/20	1.4820
944771	AF1-142 C	44.6426	80/20	44.6426
944841	AF1-149 C	1.8790	80/20	1.8790
944881	AF1-153 C O1	2.1181	80/20	2.1181
944901	AF1-155 C	2.1029	80/20	2.1029
945121	AF1-177	0.4471	80/20	0.4471
945161	AF1-181	0.1824	80/20	0.1824
945171	AF1-182	0.9069	80/20	0.9069
945181	AF1-183	0.2052	80/20	0.2052
945331	AF1-198	0.1933	80/20	0.1933
945491	AF1-214 C	1.9127	80/20	1.9127
945551	AF1-220 C	14.8130	80/20	14.8130
946111	AF1-276 C	5.6856	80/20	5.6856
946121	AF1-277 C	5.6856	80/20	5.6856
946131	AF1-278 C	4.5315	80/20	4.5315
946211	AF1-286 C O1	0.4236	Adder	0.5
946381	AF1-302 C	2.2833	80/20	2.2833
946421	AF1-306 C	9.2857	80/20	9.2857
957451	AF2-039 C	1.4600	80/20	1.4600
957581	AF2-052 C	3.6241	80/20	3.6241
957681	AF2-062 C	9.8208	80/20	9.8208
957941	AF2-088 C	0.7030	80/20	0.7030
958271	AF2-121 C	1.6408	80/20	1.6408
959061	AF2-197 C O2	2.7555	80/20	2.7555
959471	AF2-238 C	0.8461	80/20	0.8461
959481	AF2-239 C	0.7011	80/20	0.7011
959491	AF2-240 C	0.2994	Adder	0.66
959501	AF2-241 C	0.3132	Adder	0.7
959741	AF2-265 C	0.6064	80/20	0.6064
960041	AF2-295 C	2.1029	80/20	2.1029
960051	AF2-296 C	1.4820	80/20	1.4820
960271	AF2-318 C	0.7579	80/20	0.7579
961141	AF2-405	0.2772	Adder	0.62
961151	AF2-406	2.0789	Adder	4.61
961201	AF2-411 O2	8.2969	Adder	18.42
WEC	WEC	0.1345	Confirmed LTF	0.1345
LGEE	LGEE	0.2248	Confirmed LTF	0.2248
CPL	CPL	0.0364	Confirmed LTF	0.0364
CBM-W2	CBM-W2	2.8583	Confirmed LTF	2.8583
CBM-W1	CBM-W1	5.8547	Confirmed LTF	5.8547
TVA	TVA	0.4172	Confirmed LTF	0.4172
CBM-S2	CBM-S2	0.7398	Confirmed LTF	0.7398
CBM-S1	CBM-S1	2.6838	Confirmed LTF	2.6838

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
MEC	MEC	0.6308	Confirmed LTF	0.6308

13.5.52 Index 52

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
98948976	235248	01SHINGL	AP	200513	26LEWISTWN	PENELEC	1	PN-P1-2-PN-230-004	single	570.0	152.09	156.62	DC	26.19

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	7.5718	80/20	7.5718
200643	26SENECA#2	7.1511	80/20	7.1511
200644	26SENECA#3	0.7041	80/20	0.7041
200649	26PENNTech	1.7564	80/20	1.7564
200665	26SHAWVL 3	10.0554	80/20	10.0554
200666	26SHAWVL 4	10.0247	80/20	10.0247
200715	26SHAWVL 1	6.4324	80/20	6.4324
200722	26SHAWVL 2	6.5964	80/20	6.5964
200887	26ARMNA MT	0.3057	80/20	0.3057
200898	26AA1-106	2.6101	80/20	2.6101
200905	26Q36	0.2651	80/20	0.2651
200913	26SHAW-D	0.2788	80/20	0.2788
200949	26X1-109	12.2668	80/20	12.2668
203261	26BLOSSBCT	0.3514	80/20	0.3514
203283	26MANOR_T86	0.0194	80/20	0.0194
203349	26Z1-069 C	0.2495	80/20	0.2495
203350	26MILZ1-092	0.2933	80/20	0.2933
203351	26GROZ1-110	0.4502	80/20	0.4502
203352	26CANZ2-011	0.4502	80/20	0.4502
919201	AA1-144 OP	15.9740	80/20	15.9740
919491	AA2-000	124.4775	80/20	124.4775
922932	AB1-082 OP (Suspended)	2.5197	80/20	2.5197
923442	AB1-160 C	0.0713	80/20	0.0713
930511	AB1-092	4.5704	80/20	4.5704
934801	AD1-108	0.0339	80/20	0.0339
934811	AD1-109	0.0249	80/20	0.0249
935061	AD1-142	0.0162	80/20	0.0162
936421	AD2-055	9.4097	80/20	9.4097
936991	AD2-133 C	2.7662	80/20	2.7662
939171	AE1-147 C	5.9532	80/20	5.9532
940201	AE2-001 C	5.9746	80/20	5.9746
940681	AE2-055 C (Suspended)	6.2995	80/20	6.2995
940861	AE2-074 C	1.9132	80/20	1.9132
941191	AE2-113 C	11.6092	80/20	11.6092
941261	AE2-120 C	5.9862	80/20	5.9862
941271	AE2-121 C	3.1454	80/20	3.1454
941321	AE2-126 C	3.0374	80/20	3.0374
941331	AE2-129 C	2.4682	80/20	2.4682
941351	AE2-131 C	2.4682	80/20	2.4682
941421	AE2-139 C	7.4169	80/20	7.4169

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942351	AE2-248 C	4.9311	80/20	4.9311
942491	AE2-262 C	20.3115	80/20	20.3115
942501	AE2-263 C	19.0928	80/20	19.0928
942961	AE2-316 C	7.3837	80/20	7.3837
943751	AF1-043	28.2292	80/20	28.2292
944001	AF1-068 C O1	6.6185	80/20	6.6185
944181	AF1-086 C O1	2.4689	80/20	2.4689
944311	AF1-099 C	30.8329	80/20	30.8329
944321	AF1-100 C	50.7630	80/20	50.7630
944411	AF1-106 O1	1.7090	80/20	1.7090
944471	AF1-112 C	6.5370	80/20	6.5370
944671	AF1-132 C O1	6.2278	80/20	6.2278
944691	AF1-134 C O1	2.2108	80/20	2.2108
944771	AF1-142 C	49.3326	80/20	49.3326
944841	AF1-149 C	5.9875	80/20	5.9875
944881	AF1-153 C O1	2.9974	80/20	2.9974
944901	AF1-155 C	2.9759	80/20	2.9759
945161	AF1-181	0.2711	80/20	0.2711
945171	AF1-182	1.3594	80/20	1.3594
945181	AF1-183	0.3057	80/20	0.3057
945331	AF1-198	0.2681	80/20	0.2681
945491	AF1-214 C	5.9855	80/20	5.9855
945551	AF1-220 C	22.0175	80/20	22.0175
946111	AF1-276 C	9.5978	80/20	9.5978
946121	AF1-277 C	9.5978	80/20	9.5978
946131	AF1-278 C	7.6496	80/20	7.6496
946381	AF1-302 C	3.2243	80/20	3.2243
946421	AF1-306 C	13.2859	80/20	13.2859
957451	AF2-039 C	2.1815	80/20	2.1815
957581	AF2-052 C	5.6825	80/20	5.6825
957681	AF2-062 C	16.3800	80/20	16.3800
957941	AF2-088 C	1.0503	80/20	1.0503
958271	AF2-121 C	2.4682	80/20	2.4682
959061	AF2-197 C O2	3.7481	80/20	3.7481
959471	AF2-238 C	1.1707	80/20	1.1707
959481	AF2-239 C	0.9611	80/20	0.9611
959491	AF2-240 C	0.9229	80/20	0.9229
959501	AF2-241 C	0.9656	80/20	0.9656
959741	AF2-265 C	0.8390	80/20	0.8390
960041	AF2-295 C	2.9759	80/20	2.9759
960051	AF2-296 C	2.2108	80/20	2.2108
960271	AF2-318 C	1.0391	80/20	1.0391
961151	AF2-406	6.4088	80/20	6.4088
961201	AF2-411 O2	26.1930	80/20	26.1930
WEC	WEC	0.1269	Confirmed LTF	0.1269
LGEE	LGEE	0.2117	Confirmed LTF	0.2117
CBM-W2	CBM-W2	2.6208	Confirmed LTF	2.6208
CBM-W1	CBM-W1	5.5294	Confirmed LTF	5.5294
TVA	TVA	0.3710	Confirmed LTF	0.3710
CBM-S2	CBM-S2	0.4624	Confirmed LTF	0.4624
CBM-S1	CBM-S1	2.4282	Confirmed LTF	2.4282
MEC	MEC	0.5911	Confirmed LTF	0.5911

13.5.53 Index 53

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
98949463	239036	02PERRY	ATSI	239334	02L.CENTER	ATSI	1	ATSI-P7-1-CEI-345-012	tower	1667.0	138.87	139.79	DC	33.7

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

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944261	AF1-094 C	3.7304	50/50	3.7304
944262	AF1-094 E	2.4870	50/50	2.4870
944281	AF1-096 C	3.0055	50/50	3.0055
944282	AF1-096 E	2.0037	50/50	2.0037
944301	AF1-098 C	15.5957	50/50	15.5957
944302	AF1-098 E	10.3971	50/50	10.3971
944311	AF1-099 C	6.7967	Adder	8.0
944312	AF1-099 E	4.5311	Adder	5.33
944321	AF1-100 C	14.4470	Adder	17.0
944322	AF1-100 E	9.6314	Adder	11.33
944381	AF1-103 O1	4.1230	Adder	4.85
944391	AF1-104 O1	7.6890	50/50	7.6890
944411	AF1-106 O1	1.8280	Adder	2.15
944691	AF1-134 C O1	1.0484	Adder	1.23
944692	AF1-134 E O1	0.6989	Adder	0.82
944771	AF1-142 C	10.8746	Adder	12.79
944772	AF1-142 E	7.2498	Adder	8.53
944881	AF1-153 C O1	1.3361	Adder	1.57
944882	AF1-153 E O1	0.8907	Adder	1.05
944901	AF1-155 C	1.3364	Adder	1.57
944902	AF1-155 E	0.8909	Adder	1.05
945021	AF1-167 C	0.8563	Adder	1.01
945022	AF1-167 E	0.5719	Adder	0.67
945051	AF1-170 C	17.0171	50/50	17.0171
945052	AF1-170 E	11.3448	50/50	11.3448
945121	AF1-177	1.0308	Adder	1.21
945161	AF1-181	0.0770	Adder	0.09
945171	AF1-182	0.3849	Adder	0.45
945181	AF1-183	0.0953	Adder	0.11
945331	AF1-198	0.2317	Adder	0.27
945451	AF1-210 C	0.9320	Adder	1.1
945452	AF1-210 E	0.6214	Adder	0.73
945551	AF1-220 C	10.7563	Adder	12.65
945552	AF1-220 E	7.1748	Adder	8.44
945751	AF1-240 C O1	1.3002	Adder	1.53
945752	AF1-240 E O1	0.8668	Adder	1.02
946111	AF1-276 C	9.7533	Adder	11.47
946112	AF1-276 E	4.8038	Adder	5.65
946121	AF1-277 C	9.7533	Adder	11.47
946122	AF1-277 E	4.8038	Adder	5.65
946131	AF1-278 C	7.7735	Adder	9.15
946132	AF1-278 E	3.8664	Adder	4.55
946211	AF1-286 C O1	0.7403	Adder	0.87
946212	AF1-286 E O1	0.5027	Adder	0.59
946221	AF1-287 C	4.1222	50/50	4.1222
946222	AF1-287 E	2.7482	50/50	2.7482
946381	AF1-302 C	1.9622	Adder	2.31
946382	AF1-302 E	2.6163	Adder	3.08
946401	AF1-304 C	12.1222	Adder	14.26
946402	AF1-304 E	8.0815	Adder	9.51
946421	AF1-306 C	5.6819	Adder	6.68
946422	AF1-306 E	22.7276	Adder	26.74

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	4.1222	50/50	4.1222
946772	AF1-217 E O2	2.7482	50/50	2.7482
957161	AF2-010 C	14.1675	50/50	14.1675
957162	AF2-010 E	9.5477	50/50	9.5477
957451	AF2-039 C	0.4050	Adder	0.9
957452	AF2-039 E	0.2700	Adder	0.6
957571	AF2-051 C O2	10.2105	50/50	10.2105
957572	AF2-051 E O2	5.2600	50/50	5.2600
957581	AF2-052 C	2.5484	Adder	5.66
957582	AF2-052 E	1.2398	Adder	2.75
957681	AF2-062 C	8.9864	Adder	19.95
957682	AF2-062 E	5.9909	Adder	13.3
957941	AF2-088 C	0.1950	Adder	0.43
957942	AF2-088 E	0.1300	Adder	0.29
957951	AF2-089 C	0.8265	50/50	0.8265
957952	AF2-089 E	0.4258	50/50	0.4258
958031	AF2-097 C	1.0829	50/50	1.0829
958032	AF2-097 E	0.7219	50/50	0.7219
958361	AF2-130 C	1.0081	Adder	2.24
958362	AF2-130 E	0.6720	Adder	1.49
958731	AF2-164 C O2	11.9626	50/50	11.9626
958732	AF2-164 E O2	7.9750	50/50	7.9750
958741	AF2-165 C	1.2049	Adder	2.67
958742	AF2-165 E	0.8033	Adder	1.78
958751	AF2-166 C	1.0081	Adder	2.24
958752	AF2-166 E	0.6720	Adder	1.49
958791	AF2-170 C	4.6134	50/50	4.6134
958792	AF2-170 E	3.0756	50/50	3.0756
959441	AF2-235 C	1.5028	50/50	1.5028
959442	AF2-235 E	1.0018	50/50	1.0018
959461	AF2-237 C	1.8652	50/50	1.8652
959462	AF2-237 E	1.2435	50/50	1.2435
959471	AF2-238 C	0.5669	Adder	1.26
959472	AF2-238 E	0.3779	Adder	0.84
959491	AF2-240 C	0.5232	Adder	1.16
959492	AF2-240 E	0.4457	Adder	0.99
959501	AF2-241 C	0.5474	Adder	1.22
959502	AF2-241 E	0.4214	Adder	0.94
959521	AF2-243 C	0.9037	Adder	2.01
959522	AF2-243 E	0.6024	Adder	1.34
959741	AF2-265 C	0.4063	Adder	0.9
959742	AF2-265 E	0.3023	Adder	0.67
959822	AF2-273 E	0.1985	Adder	0.44
960041	AF2-295 C	0.7083	Adder	1.57
960042	AF2-295 E	0.4722	Adder	1.05
960051	AF2-296 C	0.5556	Adder	1.23
960052	AF2-296 E	0.3704	Adder	0.82
960321	AF2-323 C O2	8.2239	50/50	8.2239
960322	AF2-323 E O2	5.4826	50/50	5.4826
961141	AF2-405	0.4844	Adder	1.08
961151	AF2-406	3.6332	Adder	8.06
961201	AF2-411 O2	15.1814	Adder	33.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961211	AF2-412 O2	6.6190	Adder	14.69
NEWTON	NEWTON	3.1547	Confirmed LTF	3.1547
FARMERCITY	FARMERCITY	0.1625	Confirmed LTF	0.1625
G-007A	G-007A	5.9050	Confirmed LTF	5.9050
VFT	VFT	16.2217	Confirmed LTF	16.2217
CALDERWOOD	CALDERWOOD	1.1610	Confirmed LTF	1.1610
PRAIRIE	PRAIRIE	7.3641	Confirmed LTF	7.3641
CHEOAH	CHEOAH	1.1617	Confirmed LTF	1.1617
EDWARDS	EDWARDS	1.0731	Confirmed LTF	1.0731
TILTON	TILTON	1.9076	Confirmed LTF	1.9076
MADISON	MADISON	0.0847	Confirmed LTF	0.0847
GIBSON	GIBSON	1.6058	Confirmed LTF	1.6058
BLUEG	BLUEG	5.0344	Confirmed LTF	5.0344
TRIMBLE	TRIMBLE	1.6166	Confirmed LTF	1.6166
CATAWBA	CATAWBA	0.6682	Confirmed LTF	0.6682

13.5.54 Index 54

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
99744102	919490	AA2-000 TAP	PENELEC	200908	26CHAPMAN+	PENELEC	1	Base Case	single	546.0	119.39	124.84	DC	29.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O2	7.0975	80/20	7.0975
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	1.2774	80/20	1.2774
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O2	29.7450	80/20	29.7450
961211	AF2-412 O2	11.3061	80/20	11.3061
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

13.5.55 Index 55

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
99743514	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	146.99	156.5	DC	78.8

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 O2	2.6853	Adder	5.96
957572	AF2-051 E O2	1.3834	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 O2	5.3805	Adder	11.94
958732	AF2-164 E O2	3.5870	Adder	7.96
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 O2	3.0354	Adder	6.74
959062	AF2-197 E O2	4.5531	Adder	10.11
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 O2	2.1354	Adder	4.74
960322	AF2-323 E O2	1.4236	Adder	3.16
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 O2	78.8040	50/50	78.8040
961211	AF2-412 O2	38.0835	50/50	38.0835
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

13.5.56 Index 56

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
99743444	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	166.61	176.34	DC	78.99

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 O2	2.6879	Adder	5.97
957572	AF2-051 E O2	1.3847	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 O2	5.3922	Adder	11.97
958732	AF2-164 E O2	3.5948	Adder	7.98
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 O2	3.0369	Adder	6.74
959062	AF2-197 E O2	4.5553	Adder	10.11
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 O2	2.1372	Adder	4.74
960322	AF2-323 E O2	1.4248	Adder	3.16
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 O2	78.9900	50/50	78.9900
961211	AF2-412 O2	38.1862	50/50	38.1862
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

13.5.57 Index 57

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
99743544	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	150.86	153.49	DC	36.47

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 O2	2.2151	50/50	2.2151
957002	AF2-001 E O2	1.4767	50/50	1.4767
957011	AF2-002 C O2	1.1075	50/50	1.1075
957012	AF2-002 E O2	0.7384	50/50	0.7384
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 O2	1.3234	Adder	2.94
957572	AF2-051 E O2	0.6818	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 O2	2.4418	Adder	5.42
958732	AF2-164 E O2	1.6279	Adder	3.61
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 O2	1.5489	Adder	3.44
959062	AF2-197 E O2	2.3233	Adder	5.16
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 O2	1.0517	Adder	2.33
960322	AF2-323 E O2	0.7011	Adder	1.56
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O2	0.9492	Adder	2.11
960452	AF2-336 E O2	0.6328	Adder	1.4
960461	AF2-337 C O2	0.9492	Adder	2.11
960462	AF2-337 E O2	0.6328	Adder	1.4
960471	AF2-338 C O2	0.9492	Adder	2.11
960472	AF2-338 E O2	0.6328	Adder	1.4
960481	AF2-339 C O2	0.9492	Adder	2.11
960482	AF2-339 E O2	0.6328	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 O2	16.4302	Adder	36.47
961211	AF2-412 O2	7.7183	Adder	17.13
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

13.6 Contingency Descriptions - Secondary POI

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-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PN-P2_3-PN-230-0252-C	CONTINGENCY 'PN-P2_3-PN-230-0252-C' /* SHELOCTA 230 KV STUCK BREAKER (HOMER CITY/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PN-P2_3-PN-230-0252-A	CONTINGENCY 'PN-P2_3-PN-230-0252-A' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PL_P42_001057	CONTINGENCY 'PL_P42_001057' /* LACK-PAUP 230KV STUCK BREAKER CONNECTED TO LACK TR2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 925950 CKT 1 /* LACK-AC1-071 TAP 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* LACK-LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 4 /* LACK-LACKAW 500/230KV T4 END

Contingency Name	Contingency Definition
PL_P42_001056	CONTINGENCY 'PL_P42_001056' /* LACK-SUMT 2 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500-230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 2 /* LACK-SUMT 2 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P42_001055	CONTINGENCY 'PL_P42_001055' /* LACK-SUMT 1 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500-230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 1 /* LACK-SUMT 1 230 END
AP-P1-2-WP-230-324T_FSA_A-B	CONTINGENCY 'AP-P1-2-WP-230-324T_FSA_A-B' /* MOSHANNON-MARSHALL 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235220 TO BUS 200908 CKT 1 /* 01MOSHAN 230 26CHAPMAN+ 230 DISCONNECT BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 /* 26CHAPMAN+ 230 AA2-000 TAP 230 END
PL_P12_000193	CONTINGENCY 'PL_P12_000193' /* NMES-LACK 230KV LINE DISCONNECT BRANCH FROM BUS 200677 TO BUS 200706 CKT 3 /* NO MESHO- N.MESHPN 115-230 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 END
AP-P1-2-WP-230-005B	CONTINGENCY 'AP-P1-2-WP-230-005B' /* QUEUE AE2-262 - MOSHANNON 230KV DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES B 230 END
PN-P2_3-PN-230-0252-B	CONTINGENCY 'PN-P2_3-PN-230-0252-B' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/HOMER CITY) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-14FT	CONTINGENCY 'PN-P2-3-PN-230-14FT' /* LEWISTOWN STUCK 230KV BREAKER B34 (YEAGERTWON #2) DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 235248 CKT 1 /* 26LEWISTWN 230 01SHINGL 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 TO BUS 200548 CKT 2/* 26LEWISTWN 230 26LEWISTWN 115 26LEWISTWN 46.00 DISCONNECT BRANCH FROM BUS 200531 TO BUS 200550 CKT 2 /* 26YEAGRTWN 230 26YEAGRTWN 46 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 CKT 3 /* 26LEWISTWN 230 26LEWISTWN 115 END
PN-P1-3-PN-345-001	CONTINGENCY 'PN-P1-3-PN-345-001' /* MAINESBURG 345/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200930 TO BUS 200929 CKT 1 /* 26MAINESBURG345 26MAINESBURG115 REMOVE SHUNT R1 FROM BUS 200930 /* 26MAINESBURG345 R1 REMOVE SHUNT C1 FROM BUS 200930 END
PN-P2-3-PN-115-84D1	CONTINGENCY 'PN-P2-3-PN-115-84D1' /* MAINESBURG 115KV SB 9 DISCONNECT BRANCH FROM BUS 200930 TO BUS 200929 CKT 1 /* 26MAINESBURG345 26MAINESBURG115 DISCONNECT BRANCH FROM BUS 200929 TO BUS 200885 CKT 1 /* 26MAINESBURG115 26EVERT DR 115 END
ATSI-P2-3-CEI-345-004D	CONTINGENCY 'ATSI-P2-3-CEI-345-004D' /* ERIE WEST 345KV BKR 8 DISCONNECT BRANCH FROM BUS 200599 TO BUS 200600 CKT 1 /* 26ERIE W 345 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BUS 200600 /* 26ERIE SO 345 DISCONNECT BUS 238547 /* 02AT 345 END
PL_P13_100348	CONTINGENCY 'PL_P13_100348' /* LACK 500/230KV T4 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK-LACKAW 500- 230 T3 END

Contingency Name	Contingency Definition
PN-P2-4-PN-230-14GT	CONTINGENCY 'PN-P2-4-PN-230-14GT' /* LEWISTOWN STUCK 230KV BUS TIE BREAKER 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 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 TO BUS 200548 CKT 1/* 26LEWISTWN 230 26LEWISTWN 115 26LEWISTWN 46.00 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 TO BUS 200548 CKT 2/* 26LEWISTWN 230 26LEWISTWN 115 26LEWISTWN 46.00 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 CKT 3 /* 26LEWISTWN 230 26LEWISTWN 115 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 1 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 208005 CKT 1 /* 26LEWISTWN 230 JUNI BU2 230 REDUCE BUS 200513 SHUNT BY 100 PERCENT /* 26LEWISTWN 230 END
ATSI-P7-1-CEI-345-016	CONTINGENCY 'ATSI-P7-1-CEI-345-016' /* PERRY-NORTHFEILD AND PERRY- LC 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 239036 TO BUS 239358 CKT 1 /* 02PERRY 345 02NFIELD 345 DISCONNECT BRANCH FROM BUS 239036 TO BUS 239334 CKT 1 /* 02PERRY 345 02L.CENTER 345 END
AP-P2-2-WP-230-005T	CONTINGENCY 'AP-P2-2-WP-230-005T' /* SHINGLETOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
PN-P1-2-PN-230-004	CONTINGENCY 'PN-P1-2-PN-230-004' /* GLADE - WARREN 230KV DISCONNECT BRANCH FROM BUS 200811 TO BUS 200593 CKT 1 /* 26WARREN 230 26GLADE 230 END
ATSI-P7-1-CEI-345-012	CONTINGENCY 'ATSI-P7-1-CEI-345-012' /* PERRY-EASTLAKE AND PERRY- NORTHFIELD 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 238684 TO BUS 239036 CKT 1 /* 02EASTLK 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 239358 TO BUS 239036 CKT 1 /* 02NFIELD 345 02PERRY 345 END

Contingency Name	Contingency Definition
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
ATSI-P7-1-CEI-345-017	CONTINGENCY 'ATSI-P7-1-CEI-345-017' /* PERRY-NORTHFEILD AND LC- HARDING 345KV LINE OUTAGES DISCONNECT BRANCH FROM BUS 239036 TO BUS 239358 CKT 1 /* 02PERRY 345 02NFIELD 345 DISCONNECT BRANCH FROM BUS 239334 TO BUS 238783 CKT 1 /* 02L.CENTER 345 02HARDIN 345 END
PN-P2-3-PN-115-23D	CONTINGENCY 'PN-P2-3-PN-115-23D' /* 622 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200568 CKT 6 /* 26ERIE SO. 115 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200600 CKT 5 /* 26ERIE SO. 230 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200571 CKT 1 /* 26ERIE SO. 115 26UNION CY 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200572 CKT 1 /* 26ERIE SO. 115 26EDINB S. 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200850 CKT 1 /* 26ERIE SO. 115 26GESG TAP 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200589 CKT 1 /* 26ERIE SO. 115 26FR RD. W 115 DISCONNECT BRANCH FROM BUS 200589 TO BUS 200635 CKT 5 /* 26FR RD. W 115 26FR RD W. 35 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 END
PL_P13_100347	CONTINGENCY 'PL_P13_100347' /* LACK 500/230KV T3 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 END
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

Contingency Name	Contingency Definition
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.MESH PN 230 END
AP-P1-2-WP-230-322T	CONTINGENCY 'AP-P1-2-WP-230-322T' /* SHINGLETOWN-SHAWVILLE 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
PL_P13_100329	CONTINGENCY 'PL_P13_100329' /* LACK 230/69KV LACK T1 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P13_100328	CONTINGENCY 'PL_P13_100328' /* LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 2 /* LACK T2 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK T4 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

Contingency Name	Contingency Definition
ATSI-P1-3-SYS-345-722	CONTINGENCY 'ATSI-P1-3-SYS-345-722' /* TRAN 02S8-ATT 345 TO 02ASH_3 138 CK 8 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 END
PN-P1-3-PN-230-006	CONTINGENCY 'PN-P1-3-PN-230-006' /* ERIE SOUTH #8 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200600 TO BUS 200819 CKT 8 /* 26ERIE SO 345 26ERIE SE 230 END
PN-P1-3-PN-230-008	CONTINGENCY 'PN-P1-3-PN-230-008' /* ERIE SOUTH #6 230/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200568 TO BUS 200567 CKT 6 /* 26ERIE SO. 230 26ERIE SO. 115 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200918 CKT ZB /* 26ERIE SO. 230 26ERIE S TIE230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200600 TO BUS 200568 CKT 5 /* 26ERIE SO 345 26ERIE SO. 230 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
PN-P1-2-PN-345-003-A	CONTINGENCY 'PN-P1-2-PN-345-003-A' /* HANDSOME LAKE - WAYNE 345KV DISCONNECT BRANCH FROM BUS 200826 TO BUS 958730 CKT 1 /* 26HANDSMLK 345 AF2-164 TAP 345 END
PN-P2-3-PN-115-84A1	CONTINGENCY 'PN-P2-3-PN-115-84A1' /* MAINESBURG 115KV SB DISCONNECT BRANCH FROM BUS 200929 TO BUS 200672 CKT 1 /* 26MAINESBURG115 26MANSFIEL 115 DISCONNECT BRANCH FROM BUS 200930 TO BUS 200929 CKT 1 /* 26MAINESBURG345 26MAINESBURG115 END
PN-P1-3-PN-230-004A	CONTINGENCY 'PN-P1-3-PN-230-004A' /* HOMER CITY SOUTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202641 CKT S/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYS 23.00 END

Contingency Name	Contingency Definition
AP-P1-2-WP-230-006	CONTINGENCY 'AP-P1-2-WP-230-006' /* MILESBURG - SHINGLETOWN 230KV DISCONNECT BRANCH FROM BUS 235219 TO BUS 235970 CKT 1 /* 01MILES 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235970 TO BUS 235248 CKT 1 /* 01DALE 230 01SHINGL 230 DISCONNECT BRANCH FROM BUS 235970 TO BUS 236824 CKT 81 /* 01DALE 230 01DALE 46 46 DISCONNECT BUS 235970 /* 01DALE 230 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
PN-P2-3-PN-230-14CT	CONTINGENCY 'PN-P2-3-PN-230-14CT' /* LEWISTOWN STUCK 230KV BREAKER - SHINGLETOWN DISCONNECT BRANCH FROM BUS 200513 TO BUS 200517 CKT 1 /* 26LEWISTWN 230 26RAYSTOWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 235248 CKT 1 /* 26LEWISTWN 230 01SHINGL 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200531 CKT 2 /* 26LEWISTWN 230 26YEAGRTWN 230 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 TO BUS 200548 CKT 2/* 26LEWISTWN 230 26LEWISTWN 115 26LEWISTWN 46.00 DISCONNECT BRANCH FROM BUS 200513 TO BUS 200512 CKT 3 /* 26LEWISTWN 230 26LEWISTWN 115 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-P1-3-WP-230-325T	CONTINGENCY 'AP-P1-3-WP-230-325T' /* SHINGLETOWN #81 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 81 /* 01SHINGL 230 01SHINGL 46 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
Base Case	
200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 END

Contingency Name	Contingency Definition
PN-P1-2-PN-230-025	CONTINGENCY 'PN-P1-2-PN-230-025' /* CONEMAUGH - SEWARD 230KV DISCONNECT BRANCH FROM BUS 200912 TO BUS 200793 CKT 1 /* 26CONEMAGH 230 26SEWARD 2 230 END
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-P1-3-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
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 /* 01MILES B 230 01MILES BG 46 DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES B 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
200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 235220 CKT 1 END

Contingency Name	Contingency Definition
PN-P2-3-PN-230-9G-A	CONTINGENCY 'PN-P2-3-PN-230-9G-A' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERSVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200743 TO BUS 200796 CKT 3 /* 26HOOVERSV 115 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END
PN-P1_2-PN-230-0103	CONTINGENCY 'PN-P1_2-PN-230-0103' /* SHELOCTA - KEYSTONE 230 KV LINE OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 END
PN-P1-3-PN-230-033	CONTINGENCY 'PN-P1-3-PN-230-033' /* PIERCE BROOK 345/230KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200942 TO BUS 200943 CKT 1 /* 26PIERCEBRK 345 26PIERCEBRK 230 END
PN-P1-3-PN-230-027	CONTINGENCY 'PN-P1-3-PN-230-027' /* ERIE SOUTH #7 XFMR FAULT DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
ATSI-P1-1-CEI-345-711	CONTINGENCY 'ATSI-P1-1-CEI-345-711' /* GEN 02PERRG1 22.0 UNIT 1 REMOVE MACHINE 1 FROM BUS 239035 /* 02PERRG1 22 END
PN-P1-3-PN-230-001T	CONTINGENCY 'PN-P1-3-PN-230-001T' /* CONEMAUGH #1 500/230KV XFMR DISCONNECT BRANCH FROM BUS 200005 TO BUS 200912 CKT 3 /* CONEM-GH 500 26CONEMAGH 230 END

14 Affected Systems

14.1 NYISO

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